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THE SHORT-TERM DANISH INTERBANK MARKET BEFORE, DURING AND AFTER THE FINANCIAL CRISIS

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# DANMARKS NATIONALBANK WORKING PAPERS

## THE SHORT-TERM DANISH INTERBANK MARKET BEFORE, DURING AND AFTER THE FINANCIAL CRISIS

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## RESUME

### *Det korte danske pengemarked før, under og efter finanskrisen*

I papiret foretages en analyse af strukturen på det danske usikrede dag til dag-pengemarked før, under og efter finanskrisen. Handelsaktiviteten faldt i kølvandet på finanskrisen i 2008, hvilket kan afspejle øget opmærksomhed på kreditrisiko og en reduktion i antallet af kreditinstitutter som følge af fusioner og banklukninger. Handelsaktiviteten blev yderligere reduceret efter den store forøgelse af de pengepolitiske modparterers rammer for indestående på foliokonti i Nationalbanken i forbindelse med introduktionen af negative renter. I de seneste par år er handelsaktiviteten blevet koncentreret omkring relativt få markedsdeltagere, hovedsageligt de systemiske institutter. Analysen er baseret på data for pengemarkedstransaktioner mellem Nationalbankens pengepolitiske modparter, som er estimeret på basis af betalinger i Nationalbankens betalingssystem, Kronos for perioden 2003-2015.

## ABSTRACT

### *The short-term Danish interbank market before, during and after the financial crisis*

The paper studies the microstructure of the short-term uncollateralised Danish interbank market before, during and after the financial crisis. The financial crisis in 2008 was followed by a slowdown in trading activity which might reflect increased awareness of counterparty credit-risk and a reduction in the number of banks due to mergers and acquisitions as well as bank failures. A further reduction in trading activity followed the large increase of the monetary-policy counterparties' current-account limits in mid-2012 in relation to introduction of negative interest rates. In the most recent years, the trading activity has been concentrated on relatively few participants, mainly the Systemically Important Financial Institutions (SIFIs). The analysis is based on data on money-market transactions among Denmark's Nationalbank's monetary-policy counterparties estimated from payment flows from Denmark's Nationalbank's payment system, Kronos, for the period 2003-2015.

## KEY WORDS

Interbank market structures; Day-to-day interest rates; Payment system data; Monetary-policy implementation; Interconnectedness.

## JEL CLASSIFICATION

G21; G28; E42; E58.

## ACKNOWLEDGEMENTS

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# NON-TECHNICAL SUMMARY

This paper studies the microstructure of the short-term Danish interbank market before, during and after the recent financial crisis. More specifically, we focus on Danmarks Nationalbank's monetary-policy counterparties' trading among themselves in the market for uncollateralised krone-denominated loan contracts with a maturity of one day. We pay particular attention to the interplay between the money market and the Nationalbank's monetary-policy instruments. Furthermore, we address the interconnectedness of the market participants from a financial stability perspective. The analysis is based on data on money-market transactions among Danmarks Nationalbank's monetary-policy counterparties estimated from payment flows from Danmarks Nationalbank's payment system, Kronos, for the period 2003-2015.

During the last couple of years the total daily turnover of uncollateralised day-to-day loans among Danmarks Nationalbank's monetary-policy counterparties has amounted to around 4,000-5,000 million kroner per banking day. There has been a downward trend in trading activity – both in turnover volumes and the number of transactions – since the outbreak of the most recent financial crisis in 2008. This might reflect increased awareness of counterparty credit-risk and therefore a switch towards a higher degree of collateralised lending which also has been seen in the euro area money market. There has been a further reduction in trading activity since the significant increase of the counterparties' current-account limits in mid-2012 in relation to the introduction of negative interest rates on Danmarks Nationalbank's certificates of deposit. The current-account rate remained unchanged at zero per cent which all else equal gave the counterparties an incentive to place funds at current accounts rather than in certificates of deposit or placements in the interbank market. Furthermore, the higher current-account deposits enabled the banks to manage large daily liquidity fluctuations without resorting to the interbank market.

The overnight<sup>1</sup> segment has on average been slightly larger than the tomorrow-next<sup>2</sup> segment when it comes to trading volume among the Nationalbank's monetary-policy counterparties. Measured by the share of transactions, however, the overnight segment is much larger than the tomorrow-next segment. This probably reflects that tomorrow-next trades are planned in advance, while overnight trades to a larger extent are used to counter unexpected liquidity shocks. In recent years with ample current-account liquidity, the share of tomorrow-next transactions has declined. In such a regime a large part of the transactions will reflect unforeseen liquidity shocks that have to be covered in the overnight market. Furthermore, the switch from three to two days settlement in the Danish bond market in October 2014 might all else equal have increased the share of overnight transactions related to bond transactions.

The decline in trading activity has been followed by an increase in the average transaction size, in particular since the introduction of a negative spread between Danmarks Nationalbank's interest rate on certificates of deposits and on current accounts in July 2012. With ample current-account liquidity the banks have only entered into the interbank market for major transactions. Furthermore, this development also reflects the significant reduction in the number of smaller banks since 2008.

Over the period 2003-2015 as a whole the most frequent transaction size has been 50 million kroner followed by a transaction size of 100 million kroner. However, since 2012 the typical transaction size increased significantly, especially on days with market operations.

The number of monetary-policy counterparties has declined from around 120 in 2003 to around 85 in 2014. The reduction in the number of counterparties has mainly occurred in the group of smaller banks. However, the total number of banks has declined even more due to mergers and

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<sup>1</sup> I.e. lending or borrowing of liquidity from the agreement date to the next day.

<sup>2</sup> I.e. lending or borrowing of liquidity from the day after the agreement date to the next day.

acquisitions as well as a number of bank failures during the financial crisis. As a result almost all Danish banks are now monetary-policy counterparties. Previously, banks without status as monetary-policy counterparty relied on correspondent banks for liquidity management.

The number of active banks trading in the uncollateralised day-to-day interbank market on a given day has declined from around 30-35 in 2003-04 to around 10 during the most recent years. During the entire period since 2003 it has to a high degree been the same banks that have participated in the market year after year. Furthermore, the market share of the largest institutions has increased since 2008 in step with the reduction in the total number of banks. Medium-sized and small banks accounted only for around 5 per cent of the lending activity and around 20 per cent of the borrowing activity in 2014. The internal trading among medium-sized and small banks has also declined since the outbreak of the most recent financial crisis. The tendency for a large part of the turnover to be concentrated on relatively few participants has long been known from money markets in other countries.

Prior to the financial crisis, the largest banks traded with more than 30 different counterparties, while the group of medium-sized banks on average had more than 25 different counterparties. Since then, the number of trading partners has declined significantly for all groups of banks which reflects the general decline in turnover.

In most of the period since 2003 the turnover in the interbank market has been lower on days with market operations by Danmarks Nationalbank than on days without market operations. However, in the period with ample current-account liquidity since the middle of 2012 the reverse has often been the case.

The spreads between the highest and lowest interest rates on loan contracts in the uncollateralised day-to-day market and the current-account rate can be seen as rough indicators for the premiums on liquidity risk and credit risks in the market. The risk premiums were very high in 2008 but declined significantly in the last part of the year after the introduction of a general government guarantee of claims of depositors and other unsecured creditors in deposit banks (Bank Package 1). There is in general a larger spread between the highest interest rates and the current-account rate in the overnight market than in the tomorrow-next market. This difference might be interpreted as the result of a liquidity premium.

The highest and lowest interest rates charged on credit extended by banks in various size groups tend to be more or less similar. This might indicate that all banks have roughly the same assessment and valuation of credit and liquidity risks in the short-term Danish interbank market. On funds received it seems that the spread between the highest over-night interest rates and the current-account rate was lowest for the largest banks during the recent financial crisis.

The decline in trading activity and the degree of interconnectedness during the recent years is clearly visible from detailed maps of the individual banks' bilateral exposures. In the most recent years, the trading activity has been concentrated on relatively few participants, mainly the Systemically Important Financial Institutions (SIFIs). However, the relative importance of the individual SIFI seems to change relatively often. The most active bank in one month might for instance only be the fifth most important market participant the month after.

Overall, in 2005-06 the number of banks coming to market for liquidity exceeded the number of banks providing liquidity considerably. In 2007-12 the situation was reversed, perhaps indicating the general tendency towards fewer banks relying on the market for funding. Since 2012 the number of lenders and borrowers has been relatively balanced.

The uncollateralised krone-denominated day-to-day market only comprises a minor share of the overall interbank exposures by banks. However, in some periods and for some banks the significance of the market has been considerably larger. In 2005-09 more than 10 banks had highest borrowing exposure above 15 per cent of their liquid assets and 2 per cent of total assets. In 2007 a

few banks on single days had liabilities in the market equal to 6 per cent of their total assets. The average lending by banks to a single counterpart has in most cases been below 5 percent of liquid assets and below 2 per cent of balance sheet of the lender while the median exposure has declined from 0.4 percent of total assets in 2008-10 to close to zero today.

Looking at the entire period 2003-15 the institutions designated as Danish SIFIs in 2014 have enjoyed a negative spread to the average tomorrow-next rate in the market. Relative to the non-SIFI banks the spread has on average been between 2.5 (trade-weighted average) and 6 basis point (unweighted average). Except for 2007-08 the spread seems to have been relatively stable over the period. No direct effect from the announcement of the appointment of Danish SIFI banks is visible in the spread. This is the case for both the formal appointment in June 2014, the approval of Bank Package 6 in October 2013 which contained the identification criteria for the Danish SIFIs and for the publication of the report by the SIFI committee in March 2013.

We also explore the borrowing terms of banks that came in financial distress during the crisis. Such banks paid on average a significantly higher interest rate than other banks on their borrowing in the day-to-day uncollateralised money market well before the time of announcement. This suggests that the market was at least partially aware of increased credit risk associated with loans to those banks, which later became distressed.

# 1. INTRODUCTION

During the recent global financial crisis private banks concentrated on securing own liquidity needs and were hesitant to lend excess liquidity to others. In many countries, central banks had to respond by providing extra liquidity-adding market operations and introducing new lending facilities in order to prevent a negative spill-over from a potential liquidity freeze on the interbank market to credit intermediation vis-à-vis non-financial firms and households. As a result a large part of the short-term interbank market moved to the balance sheets of central banks.

The experiences from the crisis have once again highlighted the importance of a resilient and well-functioning interbank market with efficient price formation for allocation of short-term liquidity on market terms in the financial system. More generally, a well-functioning interbank market is also important for market-based pricing of liquidity risks and credit risks as well as for ensuring a clear transmission from monetary-policy interest rates to the short-term market rates. The interest rates in the interbank market are the basis for the interest rates which the banks offer their customers for deposits or lending.

In this paper we take a closer look at the microstructure of the short-term Danish interbank market before, during and after the recent financial crisis. More specifically, we focus on Danmarks Nationalbank's monetary-policy counterparties' trading among themselves in the market for uncollateralised krone-denominated loan contracts with a maturity of one day. We pay particular attention to the interplay between the money market and the Nationalbank's monetary-policy instruments. Furthermore, we address the interconnectedness of the market participants from a financial stability perspective.

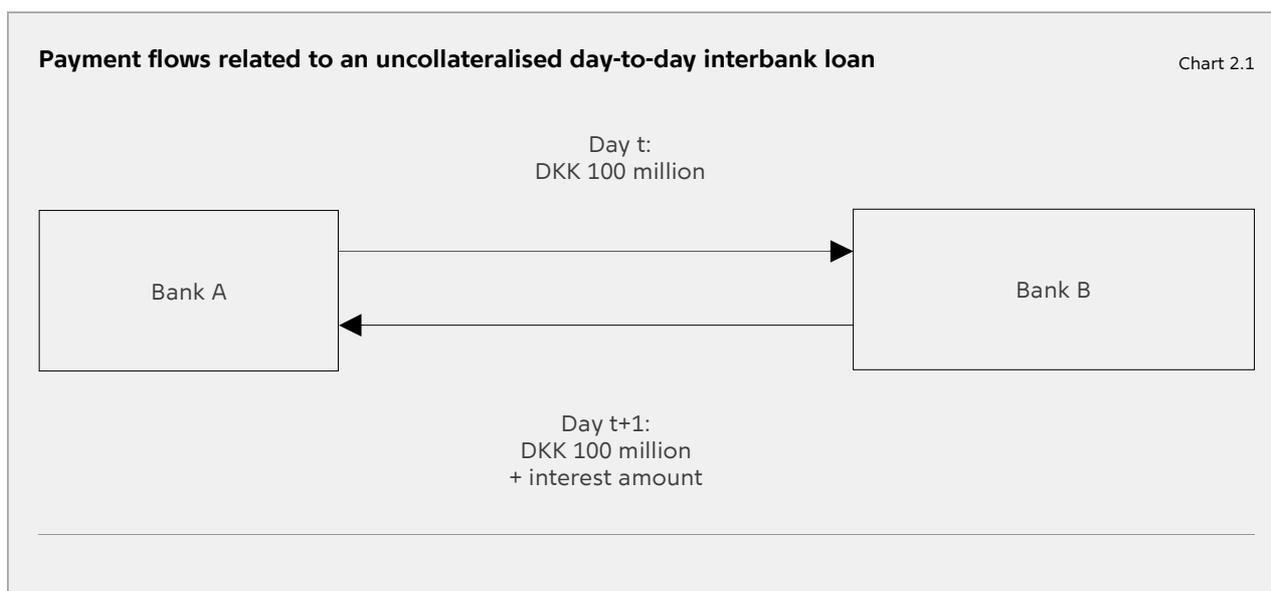
We base our analysis on transactions data for the period 2003-2015 estimated via a Furfine-style algorithm on the basis of payment flows from Danmarks Nationalbank's real-time gross settlement (RTGS) system, Kronos, combined with information from related SWIFT-messages in order to identify the ultimate borrower and lender banks. These detailed payment-based bank-to-bank loan-level data allow us to map details of the market structure that we are unable to uncover from the more aggregated reporting to Danmarks Nationalbank's various money market statistics.

The remainder of this paper is structured as follows. In Section 2 we briefly review the literature on interbank markets based on data derived by Furfine-style algorithms. Furthermore, we offer a detailed description of our data sources and compilation methods. Section 3 covers trading activity, microstructure of the interbank market and interplay with the Nationalbank's monetary-policy instruments whereas Section 4 covers interest rates on the loan contracts. Interconnectedness and issues in relation to financial stability are covered in Section 5. Section 6 offers some final remarks and outlines issues for further research.

## 2. DATA SOURCES AND COMPILATION METHODS

In a seminal paper Furfine (1999) analysed the microstructure of the federal funds market (i.e. the US uncollateralised day-to-day interbank market) based on transaction-level data from the Fedwire payments system identified via a search algorithm. Since then a range of similar studies on the microstructure of the interbank market have been conducted in other countries, including the UK (Millard and Polenghi, 2004), Denmark (Abildgren and Arnt, 2004), Canada (Hendry and Kamhi, 2009) and the euro area (Arciero *et al.*, 2013). Data based on a Furfine-style algorithm have also been used for studies on e.g. trading networks and interconnectedness (Bech and Rørdam, 2009; Bech and Atalay, 2010), liquidity demand (Acharya and Merrouche, 2013), the bargaining power of lenders and borrowers (Ashcraft and Duffie, 2007; Allen *et al.*, 2012), the presence of calendar-day effects, market segmentation and the degree of arbitrage (Demiralp *et al.*, 2006; Kraenzlin and Nellen, 2015), contagion risk in the interbank market (Amundsen and Arnt, 2005), derivation of intra-day interest rates and turnover-based measures of overnight interest rates (Akram and Christophersen, 2013a; Jurgilas and Žikeš, 2014) and the effect on interest rates of liquidity, systemic importance, financial turbulence and counterparty risk (Jørgensen *et al.*, 2011; Afonso *et al.*, 2011; Abbassi *et al.*, 2015; Jensen and Korsgaard, 2015; de Andoain *et al.*, 2014).

For the analysis in this paper we use a Furfine-style algorithm to compile transactions data covering the uncollateralised Danish day-to-day interbank market in the period from 22 September 2003 to 31 March 2015. The underlying dataset consists of payment flows from Danmarks Nationalbank's real-time gross settlement (RTGS) system, Kronos, combined with information from SWIFT-messages (BIC codes) related to the payment flows in order to identify the ultimate borrower and lender banks. The Kronos system is described in more details in Danmarks Nationalbank (2005) and Madsen (2008).



The basic idea of the search algorithm is very simple, cf. Chart 2.1. For instance, if bank A on Monday agrees on an overnight loan of 100 million kroner to bank B at an

annual interest rate of 2 per cent, the transaction implies a payment of 100 million kroner from bank A's current account with Danmarks Nationalbank to bank B's current account with the Nationalbank on the same day. When the loan is repaid including interest the next day (Tuesday), an opposite payment from bank B's account with the Nationalbank to bank A's account with the Nationalbank of 100 million kroner plus interest is executed. The search algorithm runs through all payments among account holders at Danmarks Nationalbank and searches for repayments on the following banking day that could "match" the principal of the loan plus an accrued interest. The agreed interest rate for the individual loans is not known by the algorithm in advance and may depend on the counterparty's credit rating, the time of transaction and liquidity in the money market in general. The algorithm therefore searches for counterbalancing payments where the accrued interest may vary within a certain spread around the average market level on the relevant day.

The interest-rate spread used in our algorithm is determined on the basis of the day-to-day interest rates (weighted daily average) that – together with total turnover figures – are reported daily to Danmarks Nationalbank from around 10 of the largest players in the Danish money market. The lower limit of the interval used by the algorithm is determined as the lowest reported interest rate for uncollateralised overnight or tomorrow-next transactions less 100 basis points (bps). Similarly, the upper limit of the interval is determined as the highest reported interest rate plus 100 bps. The interval is not constant as the difference between the lowest and the highest reported interest rate varies from day to day. If several payments fulfil the requirements, the match which interest rate is closest to the reported rate is chosen.

The reason for adding and deducting 100 bps is that the interest rates reported by each bank are the weighted average of all trades in the relevant segment. The interest rates for the individual trades may therefore deviate from the reported average.

To avoid that other types of transactions than uncollateralised day-to-day loans are identified by the algorithm only payments of at least 1 million kroner and which are in increments of 100.000 kroner are considered principal transactions. Transfers above the amount of 1 million kroner and where the increment can't be presented in 100.000 kroner are possible re-payments. The reason for this criterion is that "round figures" are the market standard for transactions in the uncollateralised day-to-day market. Furthermore, it ensures that foreign-exchange swaps with one leg in kroner are not included, as these are typically agreed with a principal in round amounts in US dollars (or euro) which predominantly result in odd amounts in Danish kroner. Furthermore, FX swaps are to a large extent settled via CLS and thus not via individual transactions between current accounts via the Kronos payment system. The latter also applies to collateralised trades in the form of repos, which are settled by VP Securities Services.

In this paper we focus on Danmarks Nationalbank's monetary-policy counterparties' trading among themselves in the uncollateralised day-to-day market. In this case the underlying dataset only consists of interbank payments (a so-called SWIFT MT202 payment message) initiated by financial institutions, which serve as monetary-policy counterparties, cf. Table 2.1. Transactions on behalf of non-bank customers are excluded from the dataset. The SWIFT message also reveals information on the final initiator and beneficiary. It is therefore possible to distinguish transactions on own behalf from transactions carried out as a correspondent for another bank. Finally, it should be noted that loans between institutions that are both part of the same financial group and that both have current accounts with Danmarks Nationalbank are disregarded.

**Transactions in the Danish RTGS-system, daily averages**

Table 2.1

	Value of transactions, million DKK				Number of transactions			
	2011	2012	2013	2014	2011	2012	2013	2014
Interbank payments via Kronos, total	101,405	109,262	96,126	91,993	3,008	3,328	3,895	4,096
Interbank payments initiated by a bank (Swift - MT202)	88,293	97,440	85,847	80,952	2,391	2,508	2,661	2,722
Identified day-to-day loans between Danish monetary-policy counterparties	7,969	4,817	3,491	4,364	23	13	7	7

Source: Danmarks Nationalbank

Seen in a broader perspective, our data set has a number of advantages compared to similar data sets from other countries. First, there is only one RTGS-system in Denmark. All interbank transactions between participants are therefore in our underlying data. Second, the use of reported interest rates as the basis of the spread also differs from most algorithms in the existing literature. Our approach therefore takes the volatility in the market rate into account: Periods with high uncertainty – such as during the recent financial crisis – widens the spread between the highest and lowest reported interest rate significantly. Almost 90 per cent of the number of identified day-to-day loans falls within the spread between the lowest and highest reported interest rate. Furthermore, to test the robustness of the algorithm we also examined the effect of adding (deducting) 200 bps rather than 100 bps to (from) the highest (lowest) reported interest rate. As shown in Table 2.2 such a widening of the interest-rate interval used to search for repayments are not of importance for the results. There seems not to be any significant amount of loans agreed at higher or lower interest rates than the interest-rate spread applied for matching of payments by our algorithm.

**Distribution of identified loans conditioned on additional spread**

Table 2.2

Additional spread	Within reported spread	With additional spread						Total
		10 bps	11-25 bps	26-50 bps	51-75 bps	76-100 bps	101-200 bps	
Number of transactions, per cent	87.60	10.92	1.08	0.29	0.06	0.02	0.03	100.00
Value of transactions, per cent	88.89	10.41	0.53	0.10	0.03	0.03	0.02	100.00

Note: The distribution is based on algorithm data consisting of loans between Danish monetary-policy counterparties in the period September 2003 – March 2015.

Source: Danmarks Nationalbank.

However, our compilation of interbank-market transactions based on payment-system data via a Furfine-style algorithm is in principle also associated with some factors of uncertainty. For example, the algorithm will fail to identify instances where several loans to the same counterparty on the same day are bundled into one repayment on the following banking day. Similarly, the algorithm fails to identify loans between

parties executed via a common correspondent bank. Our assumption that re-payments have to be expressed in increments below 100.000 kroner also implies that loans with an agreed interest of exactly zero percent will not be identified by the algorithm since principal and re-payment are equal. However, loans with a negative interest rate can be identified. Finally, the capture of "random" items that are not attached to day-to-day money-market deposits cannot be ruled out.

There has recently been some discussion in the literature regarding the reliability of the Furfine algorithm as a method to identify uncollateralised day-to-day loans from payment flows in the US, cf. Armantier and Copeland (2012). In contrast, the European Central Bank (2014, p. 67) found that the Furfine algorithm gave very reliable results when the algorithm was used to identify transactions in the over-night interbank market based on Target2 data for Italy and Spain. To check the robustness of the Furfine algorithm, Abildgren and Arnt (2004) compared the trading volumes calculated via the algorithm with the results from a questionnaire survey for selected banks. They concluded that in the case of Denmark it was possible to obtain a fair picture of the turnover in the market for uncollateralised day-to-day interbank loans via the Furfine algorithm, at least back in 2004.

In order to assess the quality of our dataset we have performed a number of robustness checks. First, our estimated figure for the aggregated trading activity among Danmarks Nationalbank's monetary-policy counterparties in the period 4th quarter of 2003 and the 1st quarter of 2004 is very close to that of Abildgren and Arnt (2004).

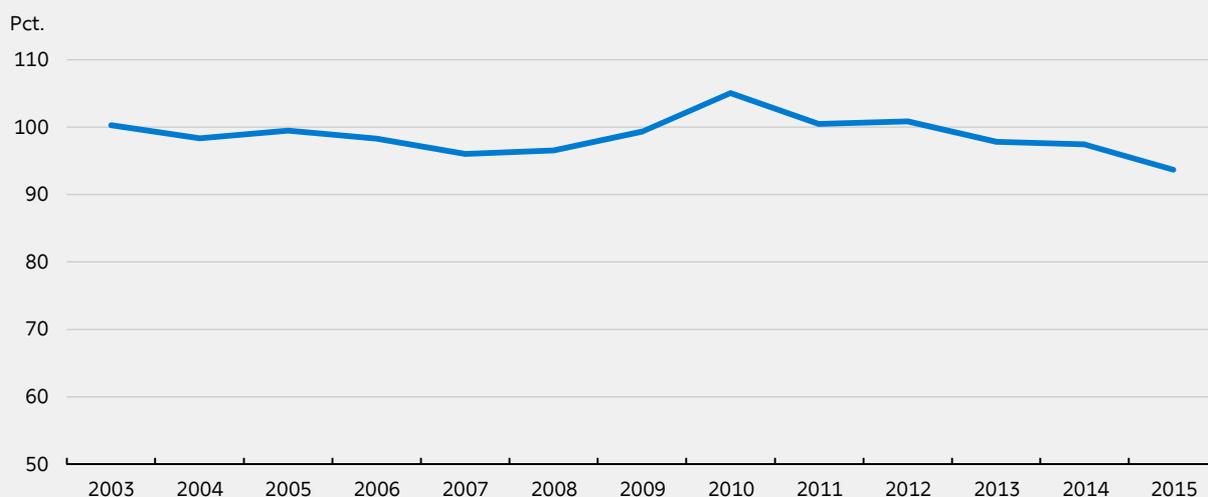
Secondly, we have compared our figures for trading activity on a daily basis with the previously mentioned turnover statistics (based on trades with Danish as well as foreign counterparties) reported directly to Danmarks Nationalbank from around 10 major banks. In general we find a very good match for those Danish banks that mainly trade with other domestic banks, cf. Chart 2.2.<sup>3</sup> We are not able to make meaningful comparisons for Danish banks with a large trading activity with foreign banks since we are not able to identify trades in the Danish money market between Danish banks and foreign banks that make use of their correspondent bank in Denmark as trading partner. The latter is also the reason why we restrict our analysis in this paper to internal trading among Danmarks Nationalbank's monetary-policy counterparties' in the uncollateralised day-to-day market.

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<sup>3</sup> This is in line with Akram and Christophersen (2013b), whose evaluation of the algorithm on the Norwegian interbank money market found that the Furfine algorithm provided more reliable results for the smaller domestically-oriented banks.

**Estimated total value of day-to-day loans relative to reported value for six Danish banks that mainly trade with other domestic banks**

Chart 2.2



Note.: Annual totals. Beginning of sample: 22 September 2003. End of sample: 31 March 2015. The six banks accounted for around 10 per cent of the total value of day-to-day loan transactions among the Nationalbank's monetary-policy counterparties during the period September 2003 - March 2015.

Source: Danmarks Nationalbank.

Finally, it should be mentioned that our underlying data only contain information on the settlement time of the loan and not the time of the loan agreement. It is therefore not possible to distinguish between overnight and tomorrow-next transactions without further information or assumptions. If, for instance, the algorithm identifies a payment from bank A to bank B on Thursday and a reverse payment from bank B to bank A the following day it might originate from an overnight loan traded on Thursday or a tomorrow-next loan traded on Wednesday. We have, however, been able to make a split between overnight and tomorrow-next transactions based on the settlement time. Following anecdotal evidence from market participants – which indicates that tomorrow-next transactions often are booked early on the settlement day – transactions settled prior to 9.40 AM have been classified as tomorrow-next transactions<sup>4</sup> whereas transactions with later settlement are treated as overnight transactions. The results seem reasonable when compared with the daily turnover statistics reported directly to Danmarks Nationalbank from the largest players in the Danish money market. However, we assess that the degree of uncertainty related to the overnight versus tomorrow-next split is somewhat larger than that related to the rest of our figures.

<sup>4</sup> And spot-next transactions. However, the amount of spot-next transactions in the Danish money market is very limited, cf. Section 3.

## 3. TRADING ACTIVITY

### 3.1. THE SIGNIFICANCE OF THE DANISH UNCOLLATERALISED DAY-TO-DAY INTERBANK MARKET

The Danish interbank market is the market among banks for loan agreements and interest-rate derivatives denominated in Danish kroner with a maturity of up to one year. The loan types traded in this market comprise uncollateralised loans (deposits), loans against bonds as collateral (repos) and loans against foreign exchange as collateral (foreign-exchange swaps).<sup>5</sup>

Loans with a maturity of one day account for most of the lending and borrowing activity in the deposit market, cf. Chart 3.1. The turnover of uncollateralised day-to-day loans is approximately equally divided between the overnight (o/n) segment, i.e. lending of liquidity from the agreement date to the next day, and the tomorrow-next (t/n) segment, i.e. lending of liquidity from the day after the agreement date to the next day. The spot-next (s/n) segment of the deposit market – i.e. lending of liquidity from the second day after the agreement date to the next day – is almost non-existent.

The large tomorrow-next segment in the Danish deposit market is in marked contrast to the euro area money market where most of the turnover in uncollateralised day-to-day loans takes place in the overnight segment, cf. European Central Bank (2015). This reflects differences in Denmark's Nationalbank's and the ECB's monetary-policy instruments: In Denmark, the monetary-policy counterparties do not have access to a marginal lending facility as is the case for banks in the euro area. The Danish banks therefore tend to prefer to handle predictable liquidity fluctuations in the tomorrow-next segment and use the overnight segment for unpredicted liquidity needs.<sup>6</sup>

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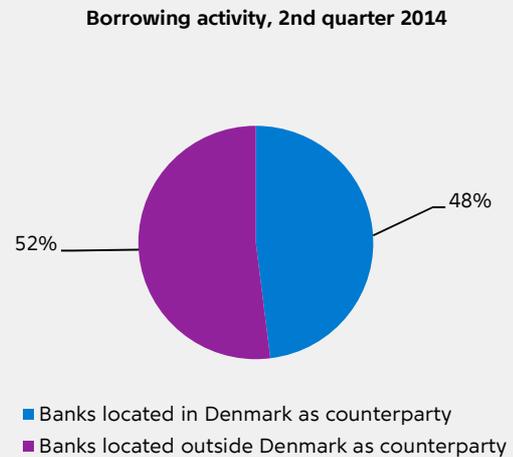
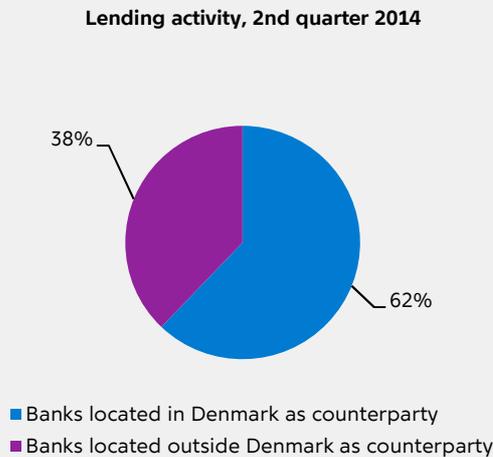
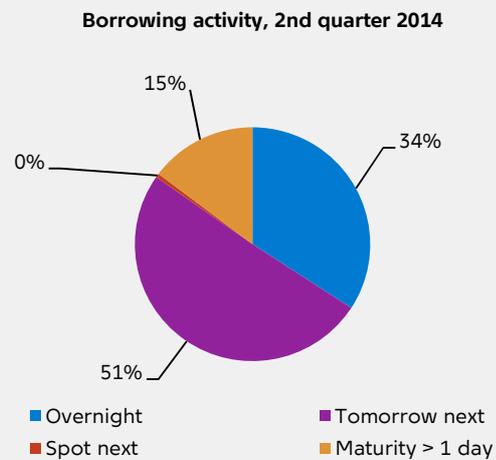
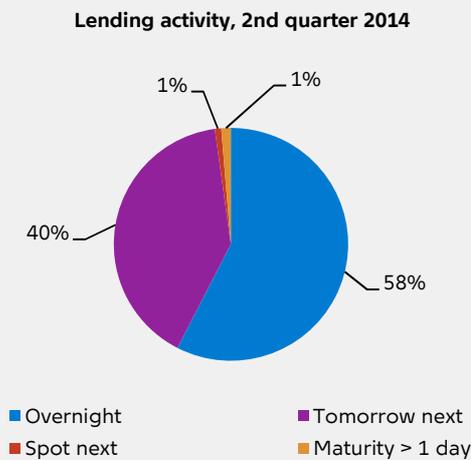
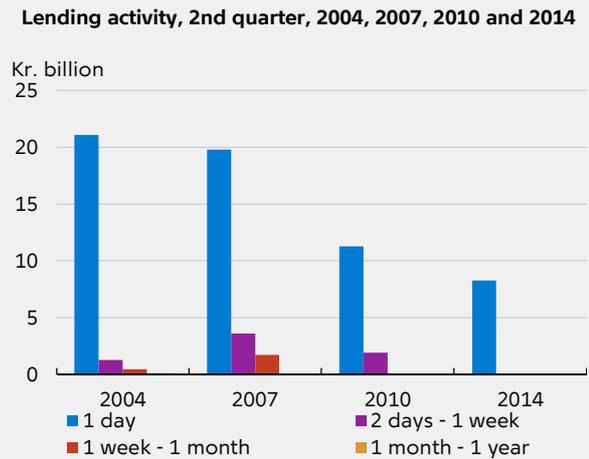
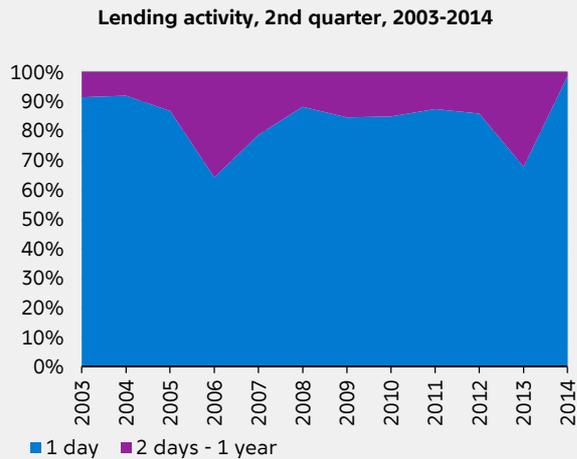
<sup>5</sup> For more general descriptions of the developments in the Danish interbank market since the early 1990s, the reader is referred to Mehlbye and Topp (1996), Damm and Pedersen (1997), Pedersen (2002), Abildgren and Arnt (2004), Andersen (2004), Kjærgaard and Skjærbæk (2008), Jørgensen and Risbjerg (2010), Jørgensen *et al.* (2011), Mindested and Risbjerg (2011), Mindested *et al.* (2012, 2013) and Christensen *et al.* (2014).

<sup>6</sup> The absence of a marginal lending facility at Denmark's Nationalbank reflects the Danish fixed-exchange-rate policy vis-à-vis the euro: Without a marginal lending facility the very short-term money-market interest rates can rise freely if liquidity conditions tighten in periods with a downward pressure on the krone and an outflow of foreign exchange from Denmark. This rise in the level of short-term market interest rates in such a situation will tend to dampen the outflow of foreign exchange and thereby support the fixed-exchange-rate policy. For a general description of Denmark's Nationalbank's monetary-policy instruments, see Denmark's Nationalbank (2009) and Spange and Toftdahl (2014).

In an exposition on monetary-policy implementation, Bindseil (2004) states that the "... monetary policy strategy is not of key relevance to choosing an appropriate approach to monetary policy implementation, i.e. monetary policy is implemented through the control of short-term interest rates, irrespective of the strategy..." (quotation from page 3) and that: "... it is indeed possible to analyse monetary policy implementation without considering the macroeconomic strategy..." (quotation from page 8). While these statements may be valid in a very general sense with respect to monetary-policy implementation, they certainly have to be qualified when one takes a closer look at the monetary-policy implementation in Denmark. There are several features in Denmark's Nationalbank's choice of monetary-policy instruments that are closely related to the monetary-policy strategy, i.e. the hard peg vis-à-vis the euro, cf. Chapter 3 in Abildgren *et al.* (2010).

## Turnover in deposits

Chart 3.1



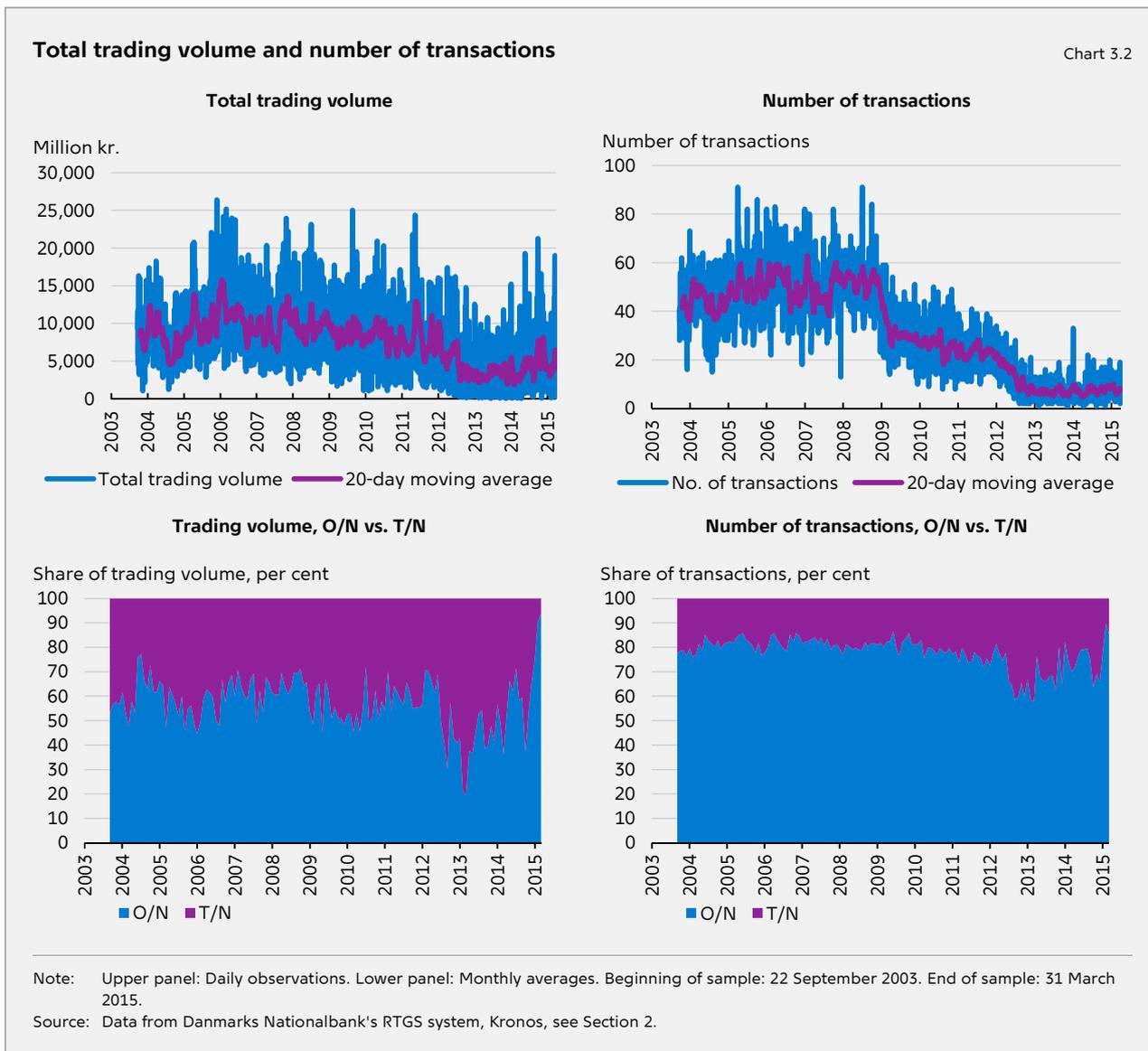
Note: Based on reporting from major Danish banks. The composition of borrowing and lending activity differs due to transactions with non-reporting domestic and foreign banks. Figures for 2nd quarter prior to 2012 refer to April.

Source: Danmarks Nationalbank's annual money market survey, Jørgensen and Risbjerg (2010) and Mindsted et al. (2013).

Around one half of the turnover in the uncollateralised Danish interbank market is traded among Danish banks and banks located outside Denmark (including branches and subsidiaries of banks resident in Denmark). The other half is traded among Danish banks themselves. In this paper we focus on the latter segment of the market – or more specifically, Danmarks Nationalbank's monetary-policy counterparties' trading among themselves in the uncollateralised day-to-day market.

### 3.2. TRADING ACTIVITY

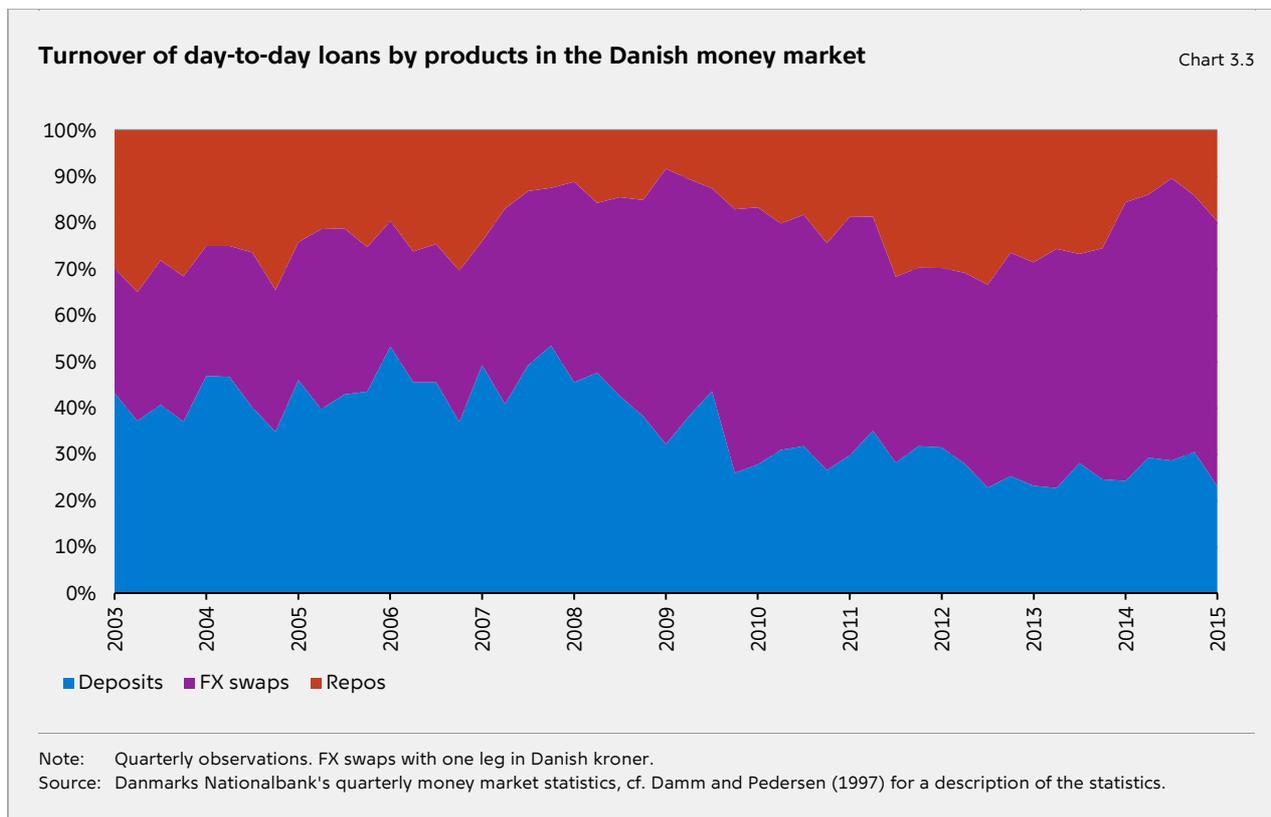
During the last couple of years the total daily turnover of uncollateralised day-to-day loans among Danmarks Nationalbank's monetary-policy counterparties has amounted to around 4,000-5,000 million kroner per banking day. There has been a downward trend in trading activity – both in turnover volumes and the number of transactions – since the outbreak of the most recent financial crises in 2008, cf. Chart 3.2. The relative large decline in the number of transactions during 2008 and 2009 compared to the trading volume reflects a significant reduction in the number of smaller banks, cf. below.



The overnight segment has on average been slightly larger than the tomorrow-next segment when it comes to trading volume. Measured by the share of transactions, however, the overnight segment is much larger than the tomorrow-next segment. This probably reflects that tomorrow-next trades are planned in advance, while overnight trades to a larger extent are used to counter unexpected liquidity shocks. In recent years with ample current-account liquidity, the share of tomorrow-next transactions has declined. In such a regime a large part of the transactions will reflect unforeseen

liquidity shocks that have to be covered in the overnight market. Furthermore, the switch from three to two days settlement in the Danish bond market in October 2014 might all else equal have increased the share of overnight transactions related to bond transactions.

The decline in uncollateralised trading activity might reflect an increased awareness of counterparty credit risk that has caused a switch towards a larger share of collateralised lending activity since 2007, especially FX swaps, cf. Chart 3.3. The same trend has also been seen in the euro area money market, cf. European Central Bank (2015).

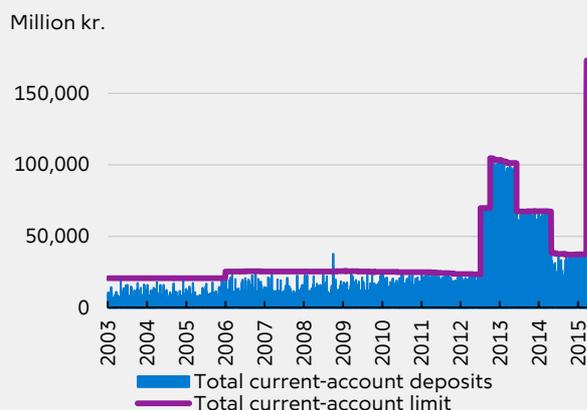


Furthermore, there seems to have been a further reduction in trading activity since the significant increase of the counterparties' current-account limits and the introduction of negative interest rates on Danmarks Nationalbank's certificates of deposit in July 2012, cf. the list of events in Annex A. The current-account rate remained unchanged at zero per cent which all else equal gave the counterparties an incentive to place funds at current accounts rather than in certificates of deposit or placements in the interbank market, cf. Chart 3.4. Furthermore, the higher current-account deposits have enabled the banks to manage large daily liquidity fluctuations without resorting to the interbank market.

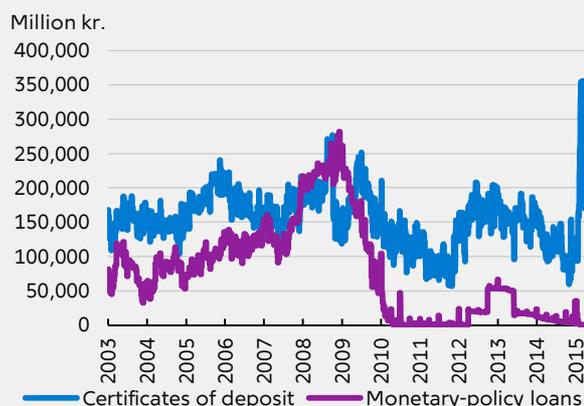
## Danmarks Nationalbank's monetary-policy instruments and interest rates

Chart 3.4

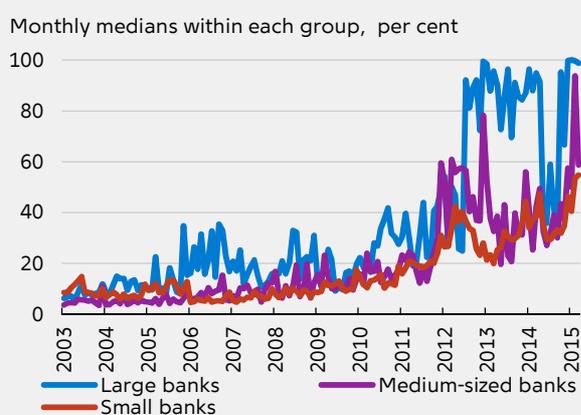
### Current-account deposits and limits



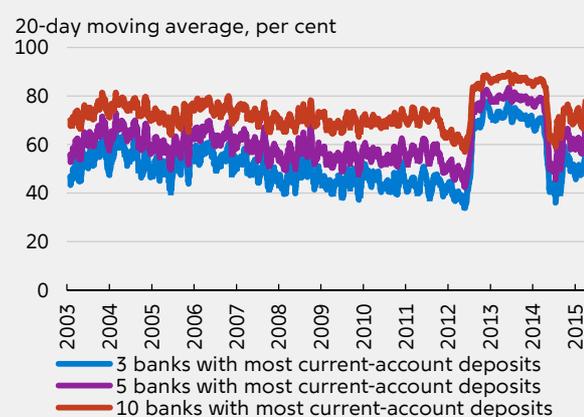
### Certificates of deposit and monetary-policy loans



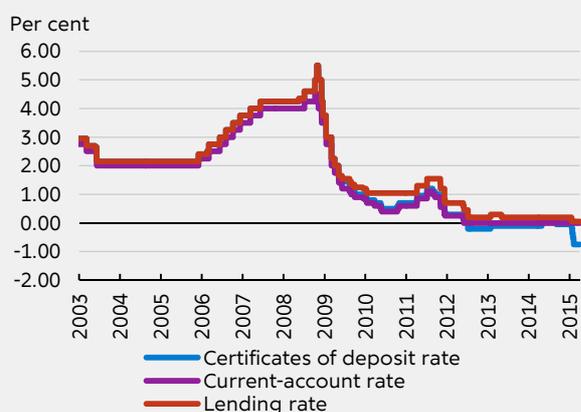
### Degree of utilisation of individual current-account limits



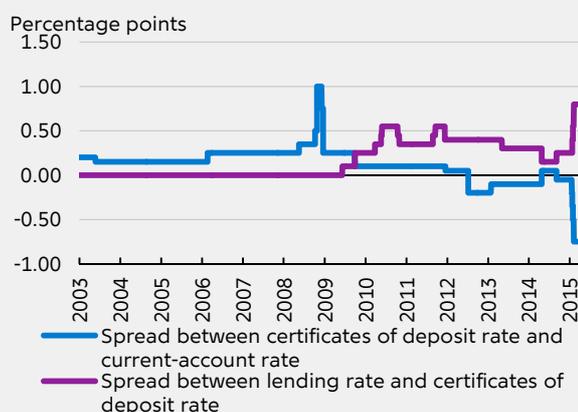
### Concentration of current-account deposits



### Interest rates



### Spreads



Notes: Daily observations. Current-account deposits with Danmarks Nationalbank are demand deposits which the monetary-policy counterparties may use as a means of payment without notice and at their own initiative. The standard maturity of Danmarks Nationalbank's monetary-policy loans and certificates of deposits was reduced from 14 to 7 days in May 2007.

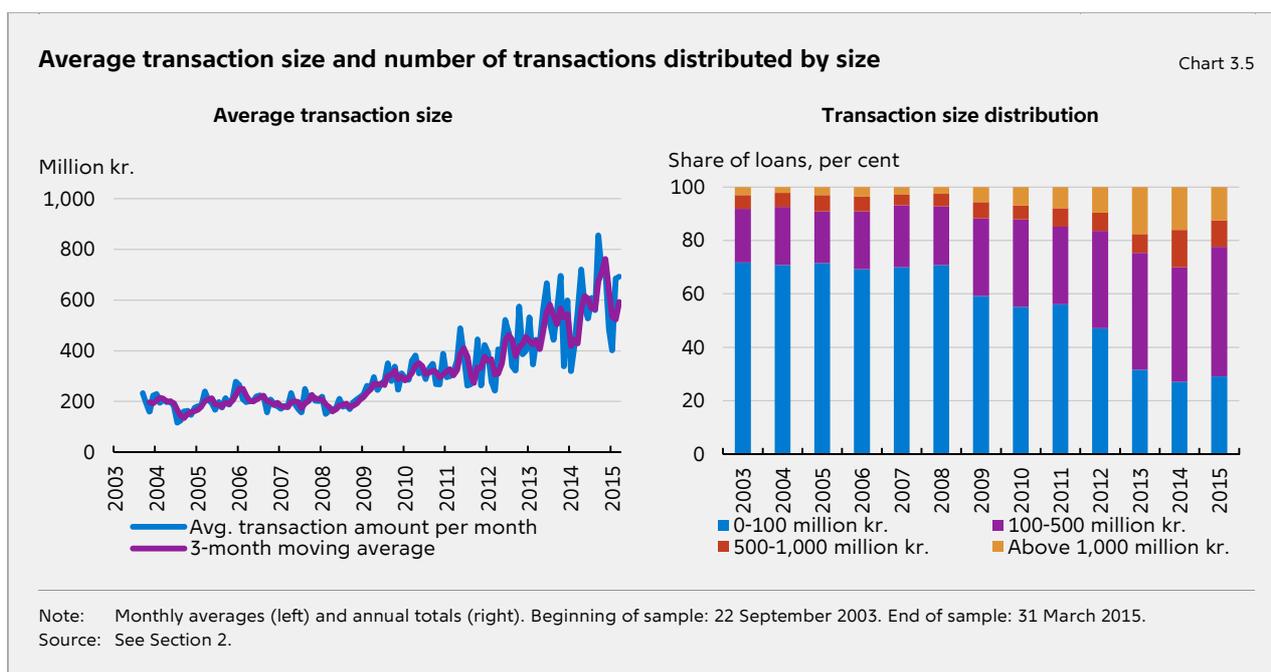
Source: Danmarks Nationalbank.

The current-account limits are normally aimed at reducing the funds immediately available for speculation in a weakening of the Danish krone. The overall limit on the monetary-policy counterparties current-account deposits with Danmarks Nationalbank are broken down by the individual banks, taking into account their activities in the money market, cf. Annex B. If the overall limit is exceeded at the close of the day, de-

posits exceeding the individual limits are converted into certificates of deposit. The current-account limits of the individual counterparty are only binding if the total sum of current-account deposits from all counterparties exceeds the overall limit. A bank can thus exceed its individual limit, provided that the overall limit is not exceeded. However, with the upward pressure on the krone in 2012 and again in early 2015, large current-account deposits did not constitute a problem in relation to the fixed-exchange-rate policy. The increased current-account limits reduced the impact of the negative interest rate on certificates of deposits on the monetary-policy counterparties without hampering the interest-rate pass-through from the Nationalbank's certificate-of-deposits rate to the money-market rate, cf. Jørgensen and Risbjerg (2012).

### 3.3. TRANSACTION SIZES

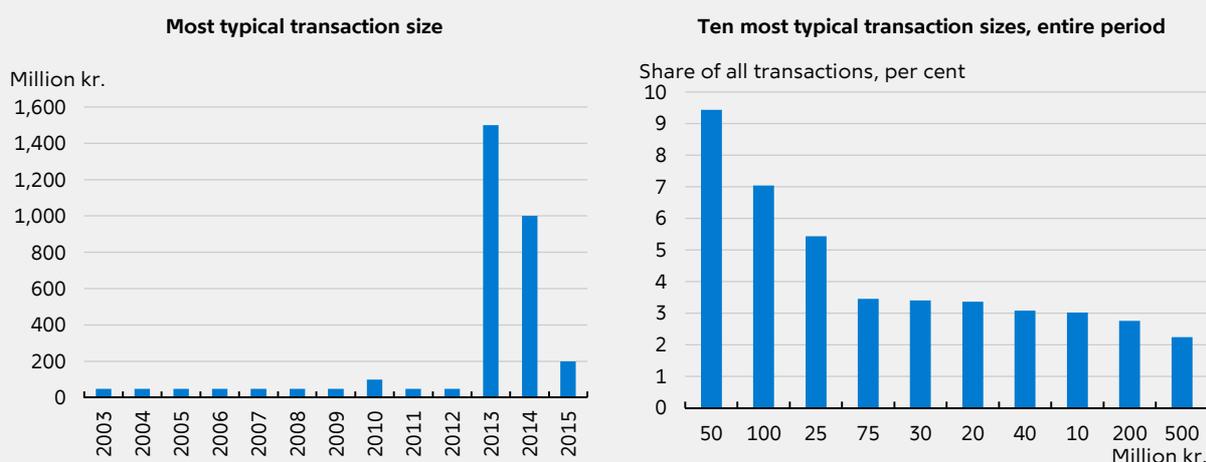
The decline in trading activity has been followed by an increase in the average transaction size, in particular since the introduction of a negative spread between Denmark's Nationalbank's interest rate on certificates of deposits and on current accounts in July 2012. There has also been a decline in the share of transactions with small sizes, cf. Chart 3.5. With ample current-account liquidity the banks have only entered into the interbank market for major transactions. Furthermore, this development also reflects the significant reduction in the number of smaller banks since 2008.



Over the period 2003q4-2015q1 as a whole the most frequent transaction size has been 50 million kroner followed by a transaction size of 100 million kroner, cf. Chart 3.6. However, since 2012 the typical transaction size increased significantly, especially on days with market operations.

### Most typical transaction size per year and the ten most typical transaction sizes for the entire period

Chart 3.6



Note: Beginning of sample: 22 September 2003. End of sample: 31 March 2015.  
Source: See Section 2.

## 3.4. MARKET PARTICIPATION AND CONCENTRATION

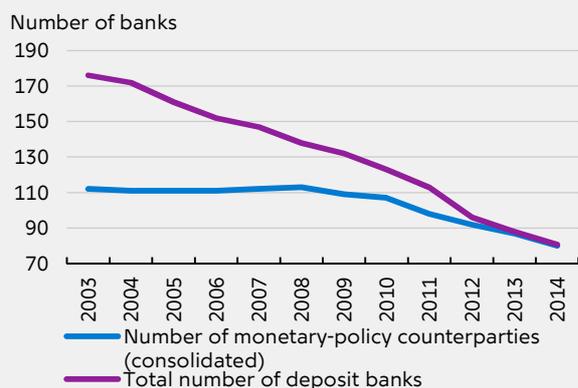
The number of monetary-policy counterparties has declined from around 120 in 2003 to around 85 in 2014, cf. Chart 3.7. The reduction in the number of counterparties has mainly occurred in the group of smaller banks (defined as banks in the Danish Financial Supervisory Authority's group 3-4<sup>7</sup>, cf. Annex D). The total number of banks has declined even more significantly due to mergers and acquisitions as well a number of bank failures during the most recent financial crisis, cf. Annex C. As a result almost all Danish banks are now monetary-policy counterparties. Previously, banks without status as monetary-policy counterparty relied on correspondent banks for liquidity management. The number of active banks that trade in the uncollateralised day-to-day interbank market on a given day has declined from around 30-35 in 2003-04 to around 10 in the most recent years. However, it should be mentioned that the value of the "existence of a market place" cannot be measured solely by the actual use of the market. Potential access to the market in case of a liquidity shortage is also important.

<sup>7</sup> The FSA size groups (group 1-4) only cover deposit banks and not mortgage banks which are also eligible as monetary-policy counterparties. We have placed the mortgage banks in those FSA groups where the deposit banks of the relevant financial groups are located.

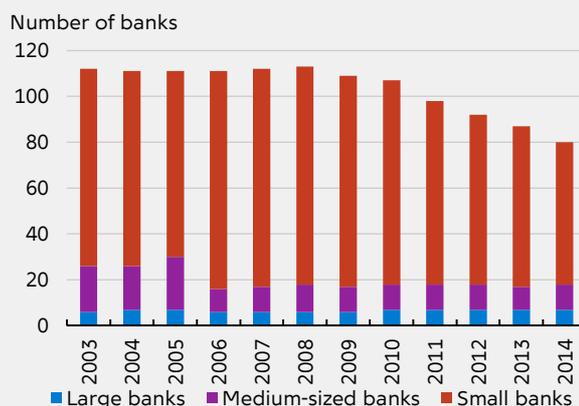
## Number of monetary policy counterparties and number of banks

Chart 3.7

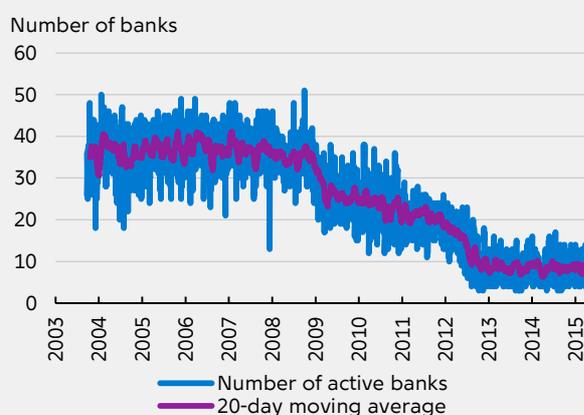
### Number of monetary-policy counterparties and banks



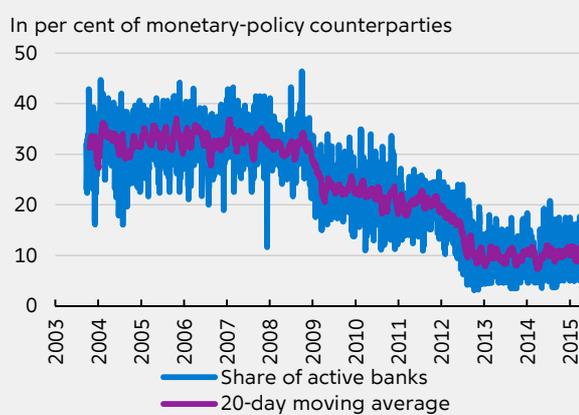
### Monetary-policy counterparties divided by bank size



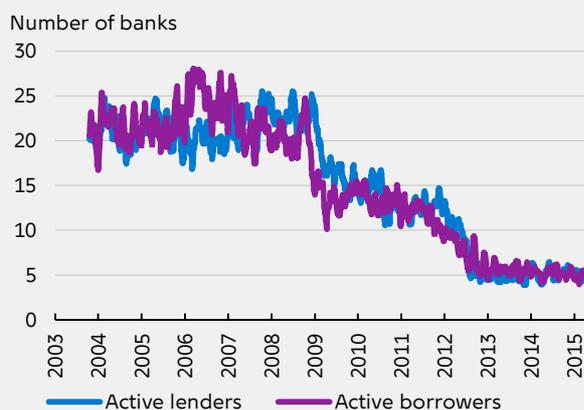
### Active monetary-policy counterparties



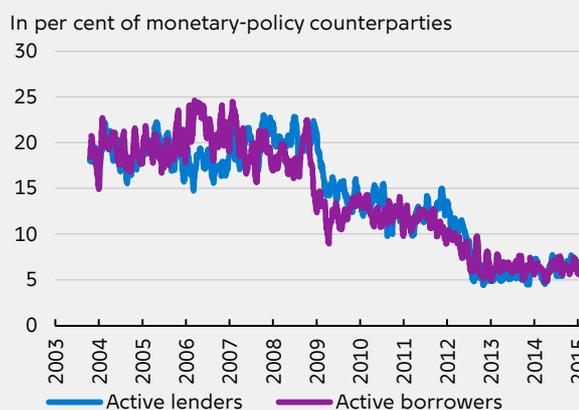
### Active monetary-policy counterparties



### Active lenders and borrowers, 20-day moving average



### Active lenders and borrowers, 20-day moving average

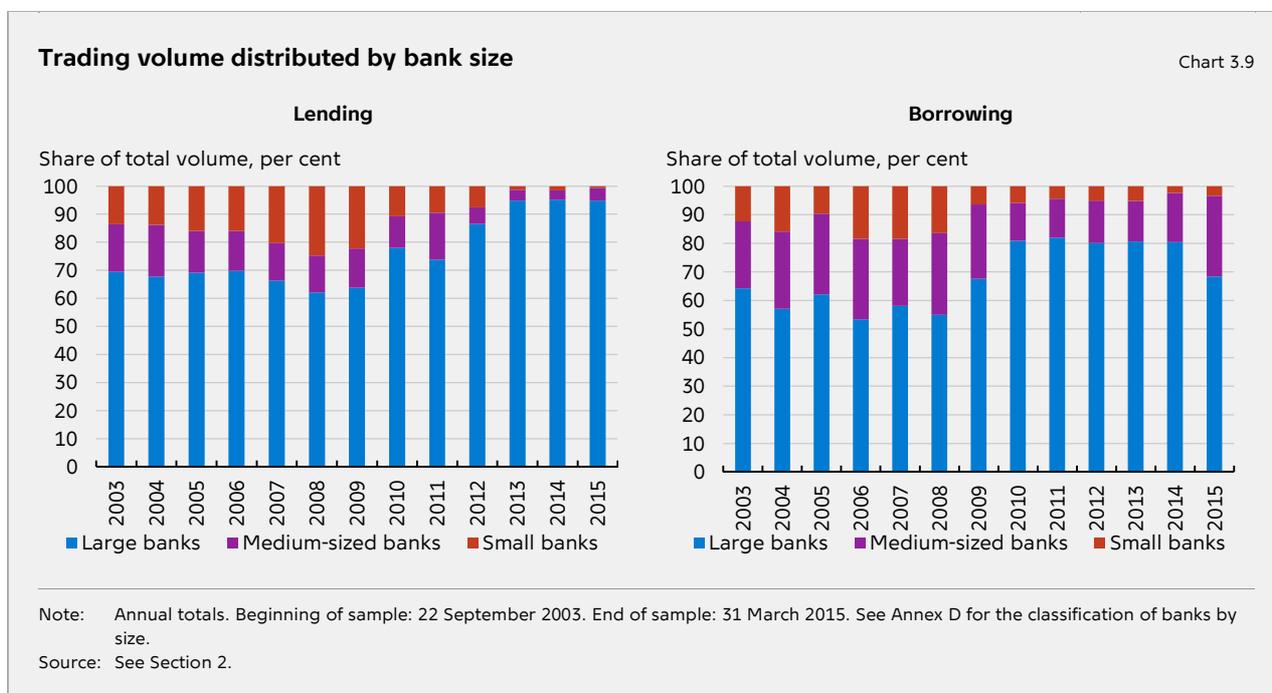
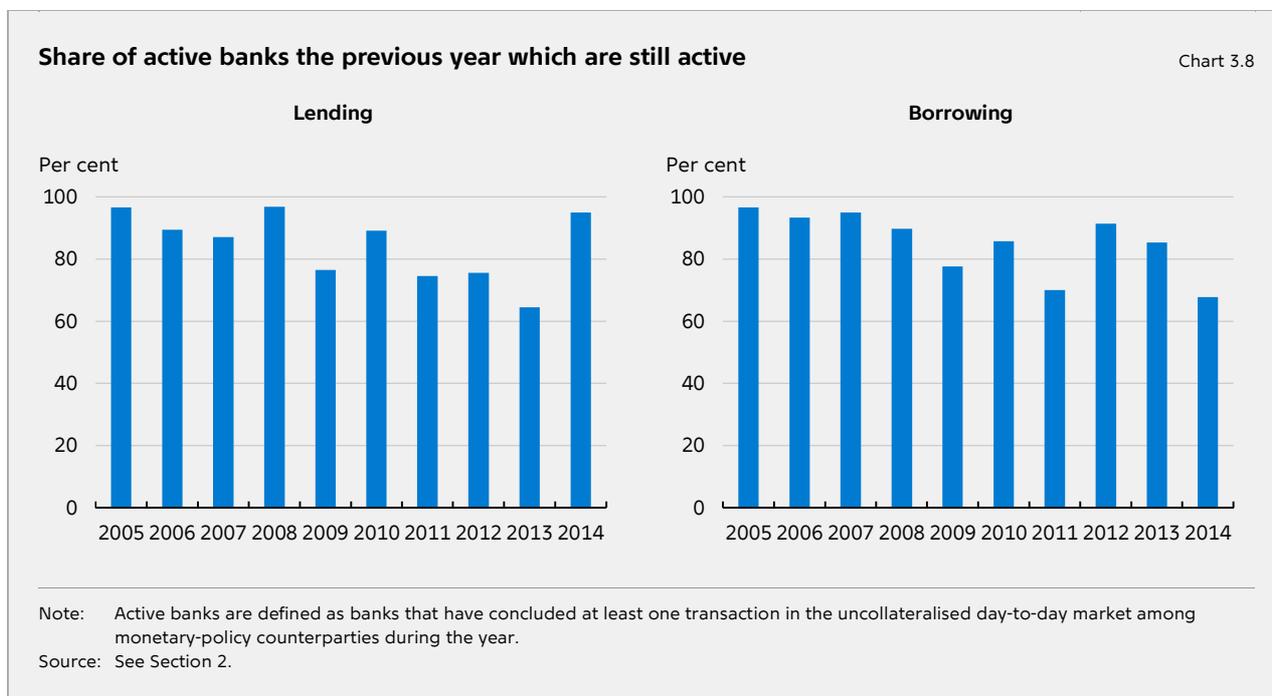


Note: Top row: End of year. Middle and bottom row: Daily observations. Beginning of sample: 22 September 2003. End of sample: 31 March 2015. The total number of banks covers deposit banks (excluding branches in Denmark of foreign credit institutes conducting banking activities in Denmark as defined in the Danish Financial Business Act). The number of monetary-policy counterparties is consolidated at the group level. Active banks are defined as banks that have concluded at least one transaction in the uncollateralised day-to-day market among monetary-policy counterparties. See Annex D for the classification of banks by size.

Source: Danmarks Nationalbank and Danish FSA. See also Section 2.

During the entire period since 2003 it has to a high degree been the same banks that have participated in the market year after year, cf. Chart 3.8. The market share of the largest institutions (almost corresponding to banks in the Danish Financial Supervisory Authority's group 1, cf. Annex D) has increased since 2008 in step with the reduction in

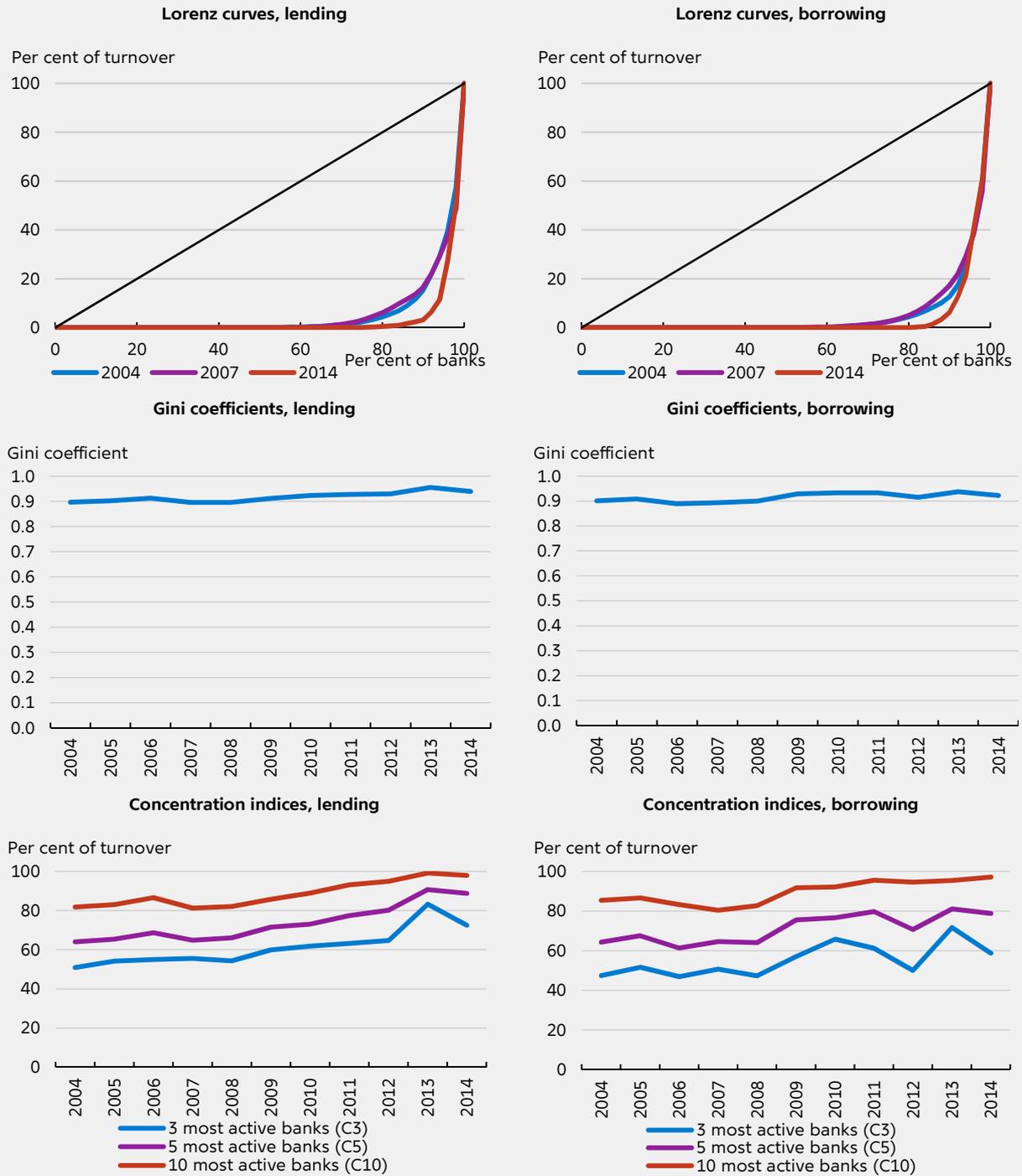
the total number of banks, cf. Chart 3.9. The tendency for a large part of the turnover to be concentrated on relatively few participants has long been known from money markets in other countries. Furfine (1999) found that only around 1,000 out of 10,000 banks participated in the Fed funds market and that the 100 largest accounted for more than 85 per cent of the trading volume.



In relation to Chart 3.9 it should be noted that the composition of the FSA size group changes over time, cf. Annex D. However, the Lorenz curves and market concentration indices (C3, C5 and C10) in Chart 3.10 confirm that the market concentration has increased over time for both lending and borrowing activity.

**Lorenz curves, Gini coefficients and concentration indices for turnover**

Chart 3.10



Note: Annual totals. The Gini coefficient is a measure of statistical dispersion. A value of 1 indicates the most extreme degree of dispersion (in this case corresponding to one bank being accountable for all lending or borrowing activity), whereas a value of 0 indicates the lowest possible degree of dispersion (in this case corresponding to all active banks being accountable for an equal share of total turnover). The Gini coefficient is defined for each year as the area between the 45-degree line and the Lorenz curve divided by the total area below the 45-degree line. The Lorenz curves shown have been discretised, but the Gini coefficients are based on the actual Lorenz curves.

Source: See Section 2.

The "wholesale market" nature of the interbank market can be further illustrated by Table 3.1. Medium-sized and small banks (corresponding to FSA groups 2-4) accounted only for around 5 per cent of the lending activity and around 20 per cent of the bor-

rowing activity in 2014. Furthermore, the internal trading among medium-sized and small banks amounted to just around 3 per cent of the total trading activity. Annex F offers information corresponding to Table 3.1 for every year since 2003.

**Breakdown of loans by size groups of the banks sending and receiving loans, 2014**

Table 3.1

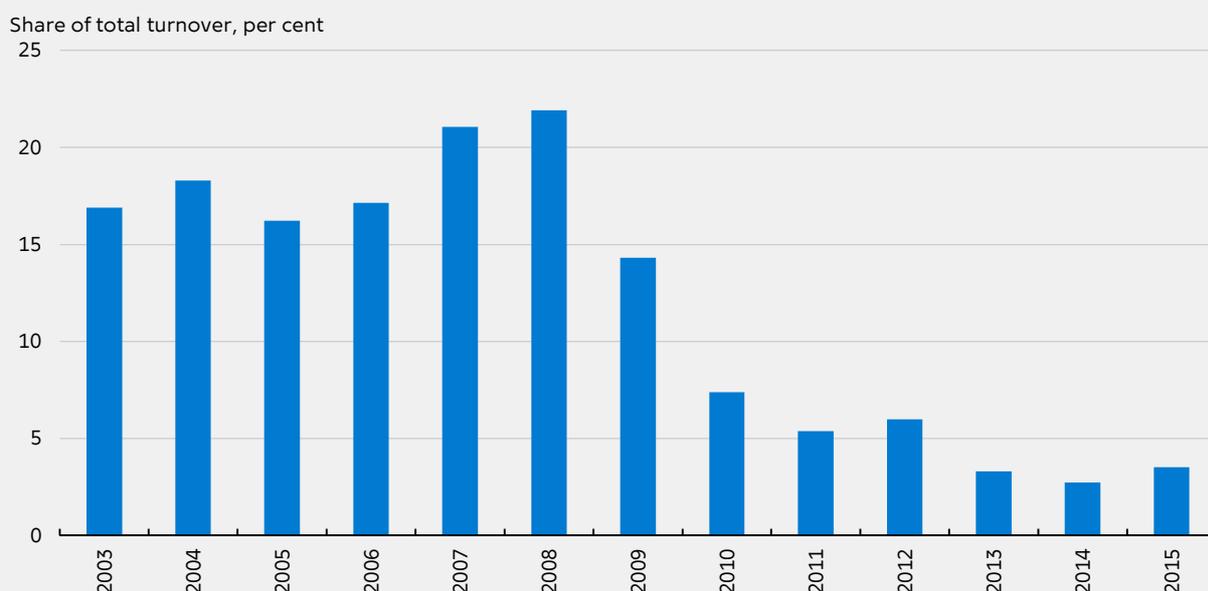
Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	3,419	657	78	4,154
Medium-sized	66	52	26	143
Small	25	42	0	67
All	3,510	751	103	4,364

Source: See Section 2.

The internal trading among medium-sized and small banks has declined since the outbreak of the most recent financial crisis, cf. Chart 3.11. Again, it should be noted that the composition of the FSA size group changes over time, which partly explain the large drops from 2008 to 2009 and from 2009 to 2010. However, the same picture arises when correcting for the change in FSA group composition. Trading between banks using the same correspondent bank is not included in our data, cf. Section 2. This might lead to an underestimation of the internal trading activity among banks in FSA group 2-4.

**Internal trading among medium-sized and small banks**

Chart 3.11

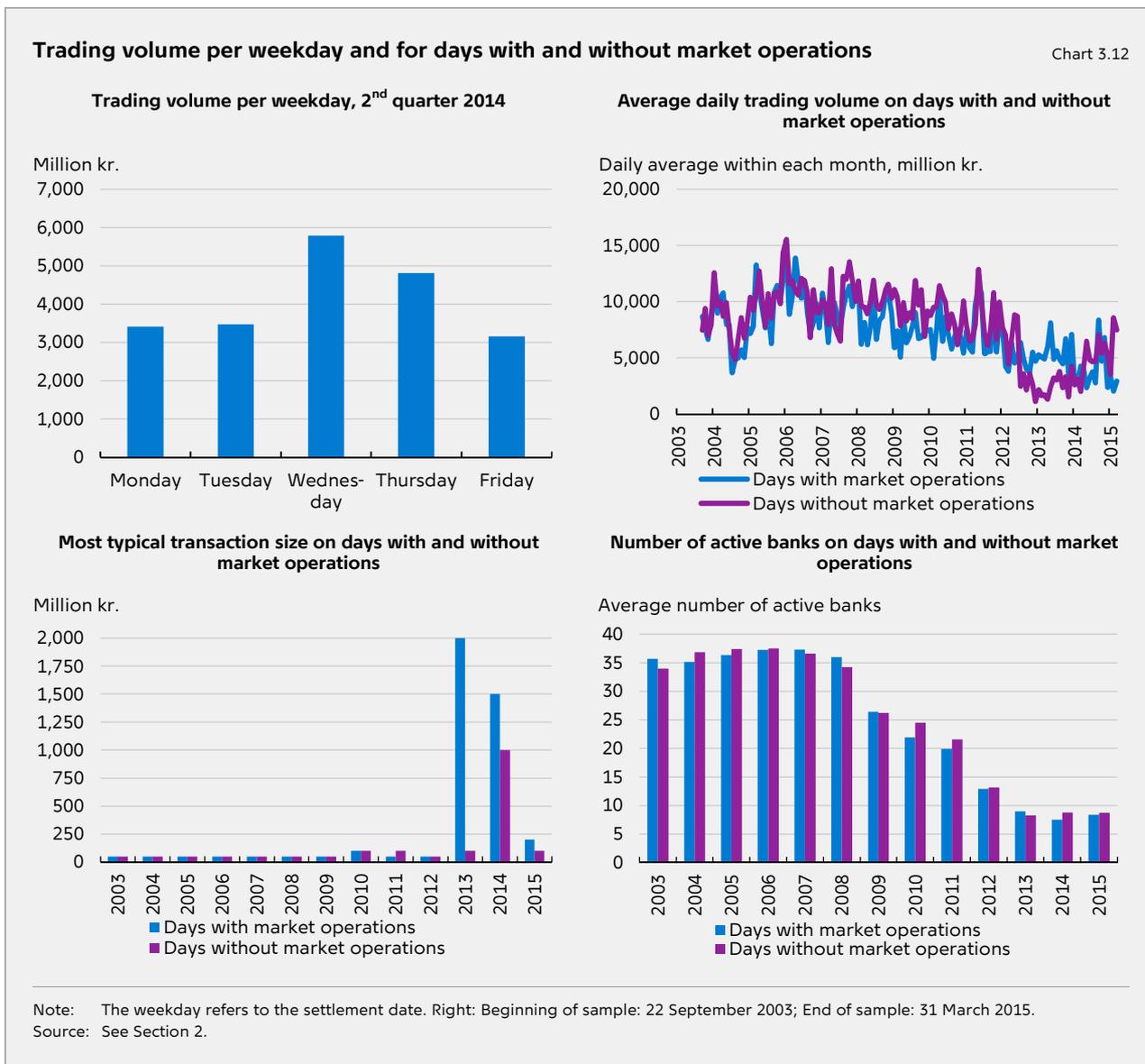


Note: Annual totals. Beginning of sample: 22 September 2003. End of sample: 31 March 2015.

Source: See Section 2.

### 3.5. WEEK DAYS AND MARKET OPERATIONS

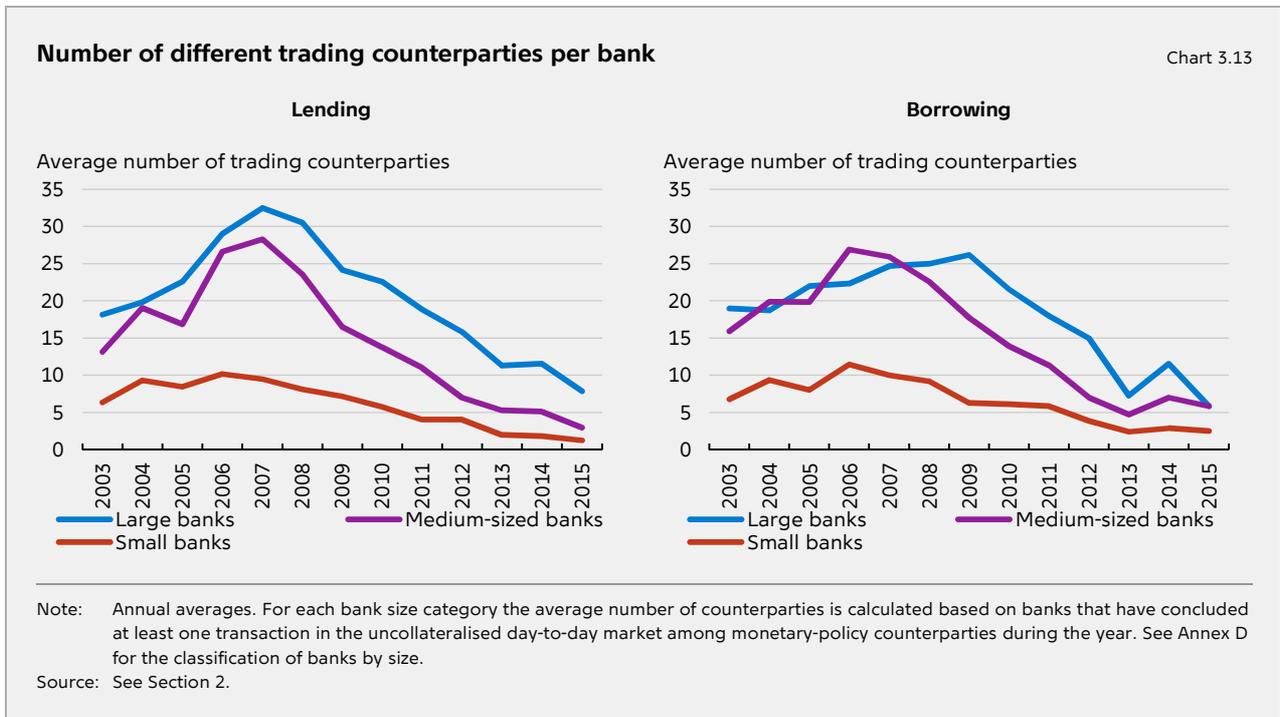
The turnover is fairly equally distributed on the days of the week. In the second quarter of 2014 the lowest average daily turnover occurred with settlement on Fridays when Danmarks Nationalbank was usually open for sale of certificates of deposit and collateralised monetary-policy lending. The highest average daily turnover occurred with settlement on Wednesdays, cf. Chart 3.12.



In most of the period since 2003 the turnover in the interbank market has been lower on days with market operations by Danmarks Nationalbank than on days without market operations. However, in the period with ample current-account liquidity since the middle of 2012 the reverse has often been the case.

### 3.6. NUMBER OF TRADING COUNTERPARTIES

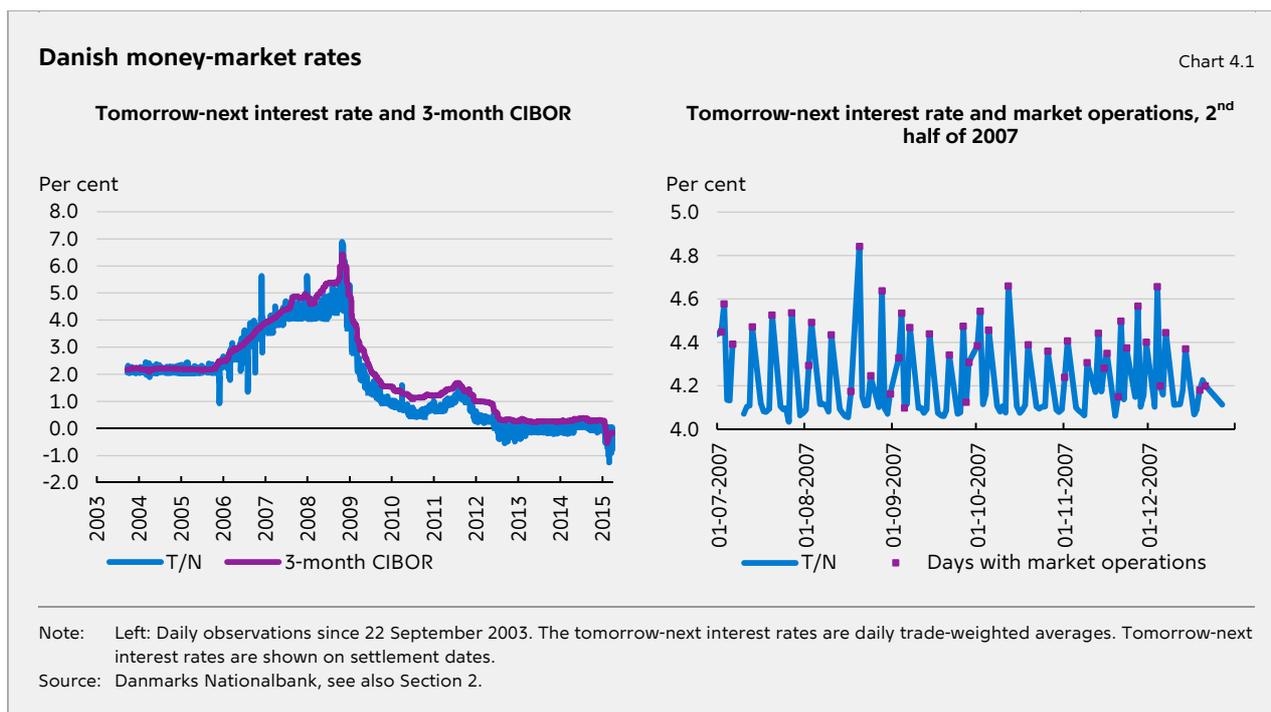
Chart 3.13 shows the average total number of different trading counterparties for active institutions during the period 2003q4-2015q1. Prior to the financial crisis, the largest banks traded with more than 30 different counterparties, while the group of medium-sized banks on average had more than 25 different counterparties. Since then, the number of trading partners has declined significantly for all groups of banks which reflects the general decline in turnover.



## 4. INTEREST RATES

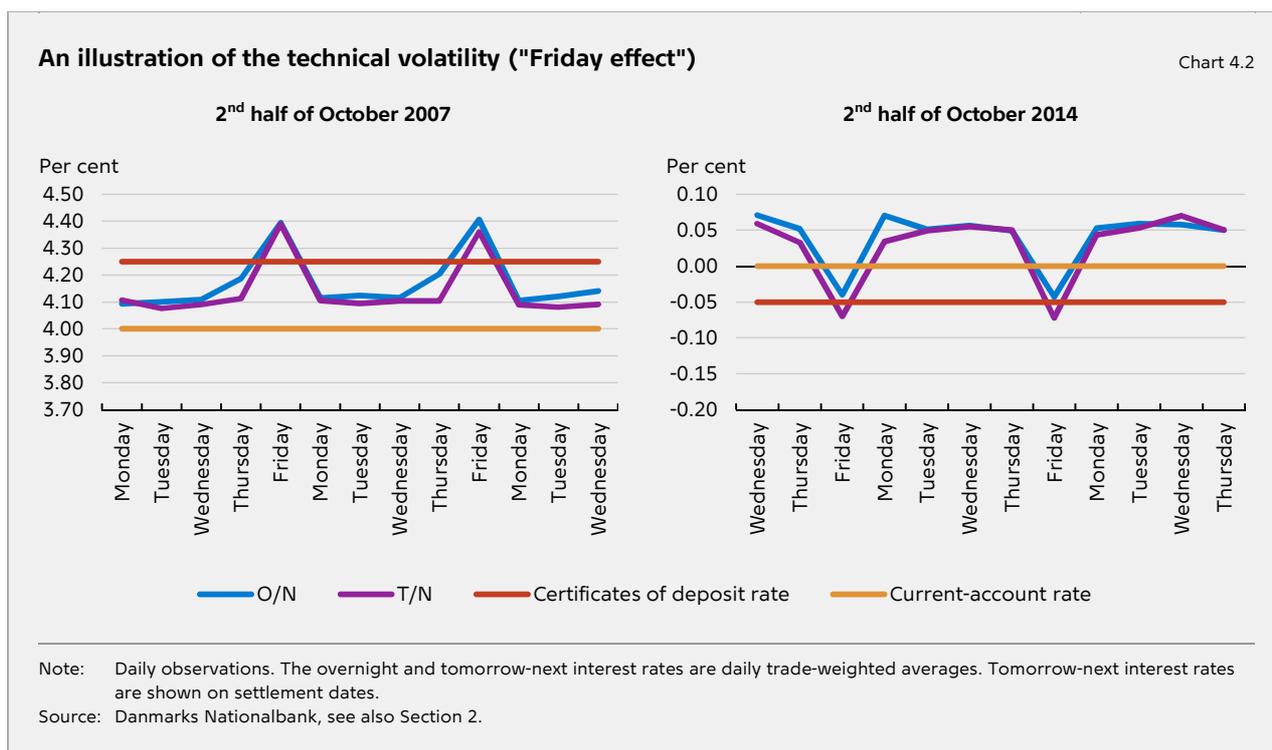
### 4.1. TECHNICAL VOLATILITY

The volatility in the Danish day-to-day interest rates is rather high, cf. Chart 4.1. However, a large part of this volatility is of technical nature and can be attributed to the design of the monetary-policy instruments. Andersen (2004) finds no indications that this predictable volatility component in the day-to-day interest rates has a significant rub-off effect on money-market interest rates for longer maturities.



During most of the period since 2003, the monetary-policy counterparties have had a positive net liquidity position vis-à-vis Danmarks Nationalbank. In periods with a positive spread between the interest rate on certificates of deposit and deposits on current account – such as in October 2007 – the day-to-day money market rate will normally be above but close to the current-account rate on days without market operations by Danmarks Nationalbank. This reflects that for the banking sector as a whole, current-account deposit with Danmarks Nationalbank constitutes the only opportunity to obtain interest on excess krone liquidity on these days. On days when the Nationalbank is open for sale of certificates of deposit – normally the last banking day of the week – banks with excess liquidity have the opportunity to purchase certificates of deposit and thereby place liquidity over the coming week with Danmarks Nationalbank at a rate higher than the current-account interest rate. If they instead choose to lend the liquidity on a day-to-day basis in the money market on the last banking day of the week, they will take into account that during the first four banking days of the following week the liquidity can only be expected to be placed in the money market at a rate of interest close to the current-account interest rate (or with Danmarks Nationalbank at the current-account interest rate). The overnight interest rate on the last banking day of the week (which also applies during the weekend) must therefore be relatively high to give

a bank with excess liquidity an incentive to lend in the overnight market rather than purchase certificates of deposit from Danmarks Nationalbank, cf. Chart 4.2 (left).

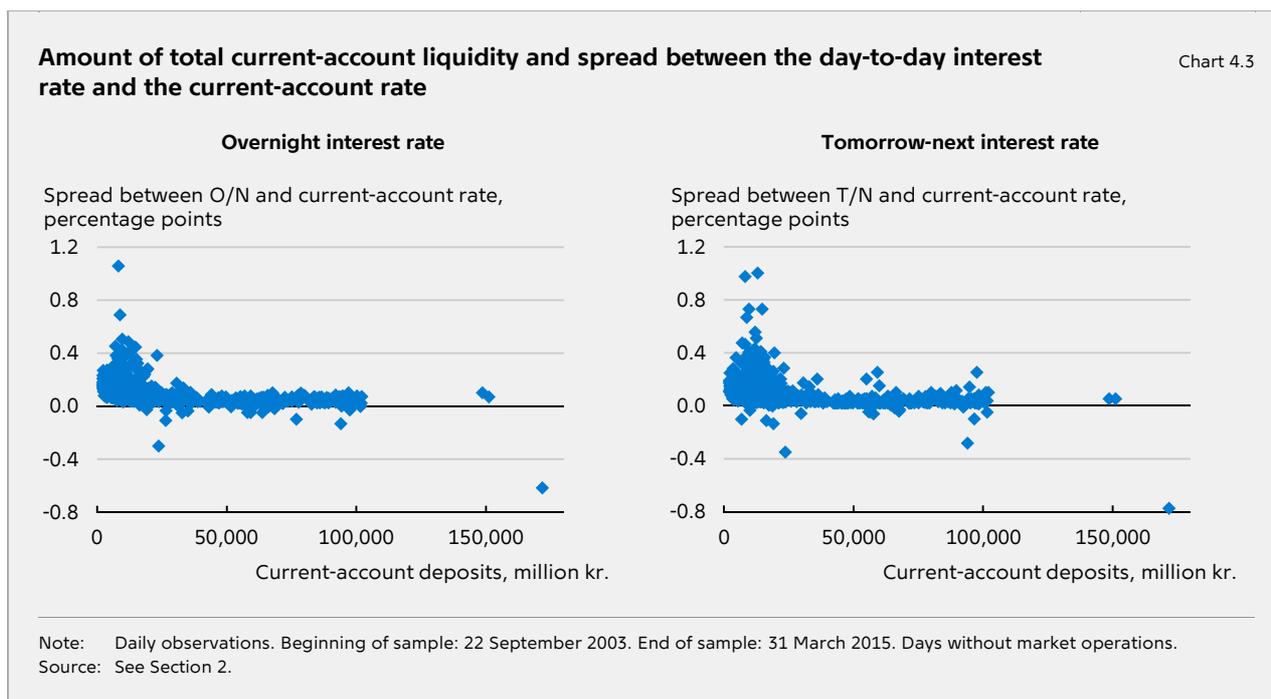


In periods with a negative spread between the interest rate on certificates of deposit and deposits on current account – such as in October 2014 – the day-to-day money-market rate will also normally be close to the current-account rate on days without market operations by Danmarks Nationalbank. On days when the Nationalbank is open for sale of certificates of deposit banks with excess liquidity also have the opportunity to purchase certificates of deposit but at a rate lower than the current-account interest rate. The banking system as a whole will therefore seek to max out the current-account limits and only place liquidity exceeding this limit in certificates of deposit. On days with market operations there will be a tendency towards "no-arbitrage equilibrium" between lending in the day-to-day money market over a 7-day period and purchase of Danmarks Nationalbank's certificates of deposit. The overnight interest rate on these days will therefore be relatively low, cf. Chart 4.2 (right).

In Chart 4.1 one might notice the particularly large spikes in the day-to-day interest rates in 2006 in periods where the Nationalbank was expected to change its monetary-policy interest rates. At that time the maturity of the Nationalbank's certificates of deposits was normally 14 days, and the monetary-policy counterparties were reluctant to tie up liquidity by purchasing certificates of deposit with a maturity of 14 days if interest rates were expected to be raised before the certificates matured. In these situations there would be ample liquidity in the money market and very low day-to-day interest rates. On the other hand, in periods when interest rates were expected to be lowered there would be considerable interest in buying 14-day certificates of deposit that matured after interest rates had been lowered. This could lead to a shortfall of liquidity in the money market and large increases in the day-to-day interest rate. In May 2007, the standard maturity of Danmarks Nationalbank's monetary-policy loans and certificates of deposits was reduced from 14 to 7 days in order to reduce such fluctuations, cf. An-

nex A. By changing from 14-day to 7-day maturities there will normally not be interest-rate adjustments within the lifetime of a monetary-policy loan or certificate of deposit. In periods when the foreign-exchange market is calm, Danmarks Nationalbank usually only changes its interest rates in step with the monetary-policy interest rates of the ECB. However, in situations with upward or downward pressure on the krone, Danmarks Nationalbank might unilaterally change its interest rates in order to stabilise the krone.

As shown in Chart 4.3 the spreads between the day-to-day interest rates and the current-account rate are generally lowest in periods with ample deposits on current accounts.

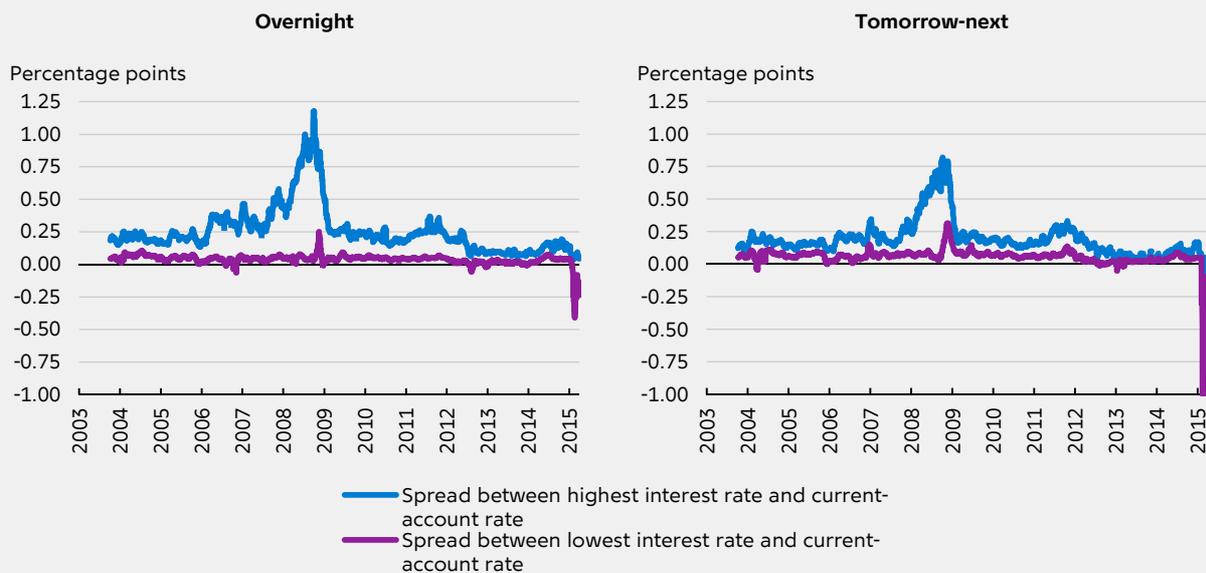


## 4.2. HETEROGENEITY

Chart 4.4 shows the spreads between the highest and lowest interest rates on loan contracts in the uncollateralised day-to-day market and the current-account rate. These spreads can be seen as rough indicators for the premiums on liquidity risk and credit risks in the market. The risk premiums were very high in 2008 but declined significantly in the last part of the year after the introduction of a general government guarantee of claims of depositors and other unsecured creditors in deposit banks (Bank Package 1), cf. Annex A. There is in general a larger spread between the highest interest rates and the current-account rate in the overnight market than in the tomorrow-next market. This difference might be interpreted as the result of a liquidity premium.

Spreads between highest/lowest interest rates and the current-account rate

Chart 4.4



Note: 21-day central moving average. Only days without market operations. Days with only one trade are left out. Beginning of sample: 22 September 2003. End of sample: 31 March 2015.

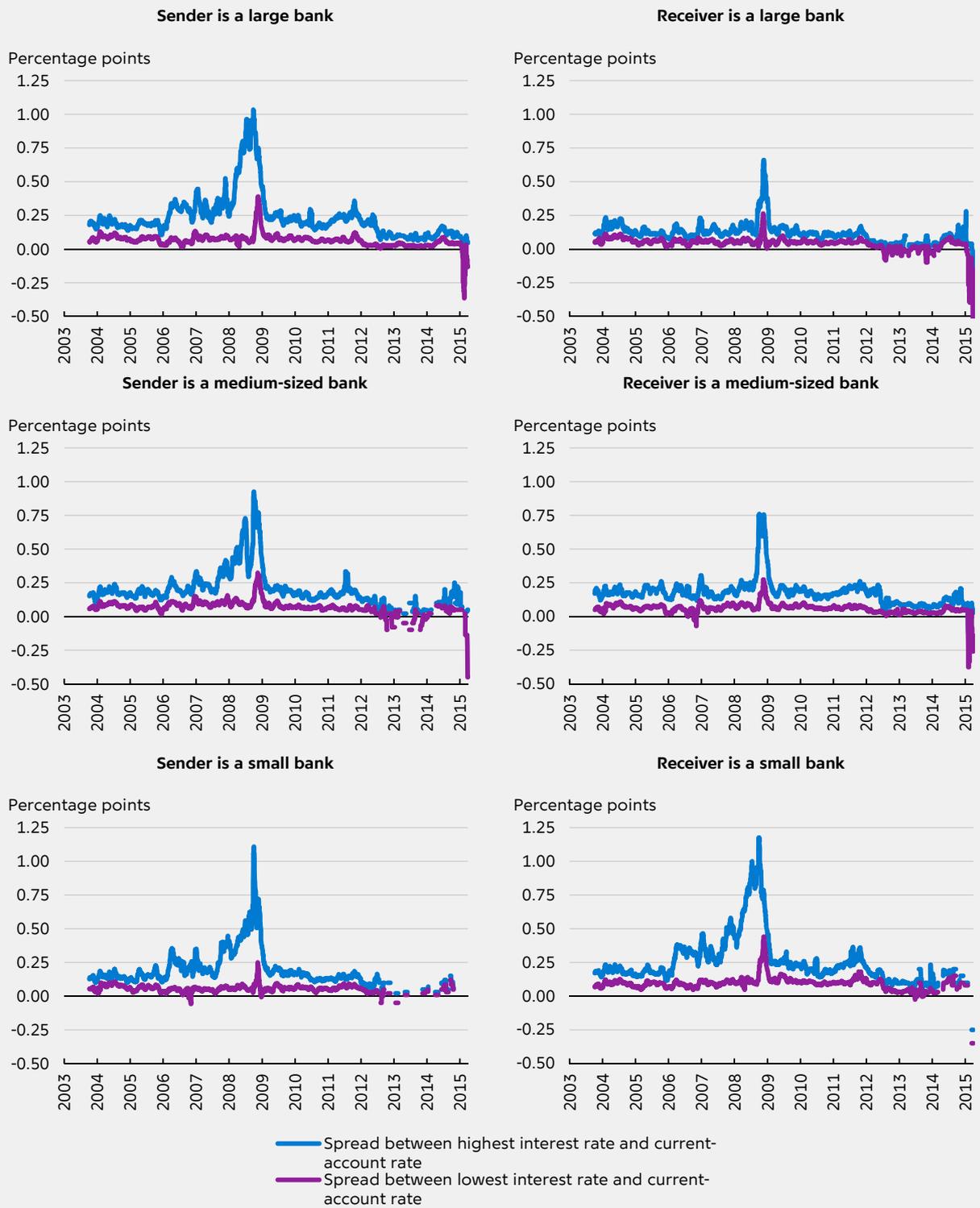
Source: See Section 2.

The highest and lowest interest rates charged on credit extended by banks in various size groups tend to be more or less similar, cf. Chart 4.5 (left column). This might indicate that all banks have roughly the same assessment and valuation of credit and liquidity risks in the short-term Danish interbank market.

On funds received it seems that the spread between the highest overnight interest rates and the current-account rate in general was lowest for large banks during the recent financial crisis, even during period from October 2008 to September 2010 with a general government guarantee (Bank Package 1) that covered all claims of depositors and other unsecured creditors, cf. Chart 4.5 (right column) and Ejerskov (2009).

**Spreads between highest/lowest interest rates and the current-account rate, divided by bank size, overnight**

Chart 4.5



Note: 21-day central moving average. Only days without market operations. Days with only one trade within the category are left out, which results in the discontinuities visible in the charts. Beginning of sample: 22 September 2003. End of sample: 31 March 2015.  
 Source: See Section 2.

## 5. INTERCONNECTEDNESS AND FINANCIAL STABILITY ISSUES

This final section takes a closer look at the detailed trading network in the day-to-day uncollateralised money market and the use of the market by the individual banks viewed from a financial stability perspective. Our focus will be on the degree of interconnectedness among the banks through the market and the developments in the size of the exposures of the individual banks on the lending and borrowing side. Furthermore, we explore the interest rate paid by systemically important financial institutions (SIFIs) relative to non-SIFI banks and examine the degree of market participation and borrowing terms of banks in financial distress.

### 5.1. INTERCONNECTEDNESS, MARKET STRUCTURE AND MARKET ACCESS

The structure and usage of the Danish uncollateralised day-to-day money market has changed markedly over the observed period of 2003-15. The changes are apparent looking at a matrix of the trading network, cf. Chart 5.1, where the rows represent the lending activity by individual banks while the columns represent their borrowing. The chart shows the individual banks' bilateral exposures measured as annual averages of days with exposures. Annex G offers information corresponding to Chart 5.1 for every year since 2003.

In the years 2003-09 the market was widespread with numerous interactions across the participating banks. The active participants consisted of the largest Danish banks, selected as SIFIs in 2014<sup>8</sup>, medium/small Danish banks and a range of branches of foreign banks. The decline in market activity by the medium/small banks after the financial crisis (including bank exits) clearly stands out in the charts as the lower right square of the figure shows falling activity from 2009.

In the most recent years the market has been concentrated on fewer participants, mainly the SIFIs. However, the relative importance of the individual SIFI changes relatively often, i.e. the most active bank in one month might only be the fifth most important market participant the month after. This is the case for both borrowing as well as lending transactions and suggests that the market centralisation in the later years is on the group of SIFIs and not on an individual SIFI.

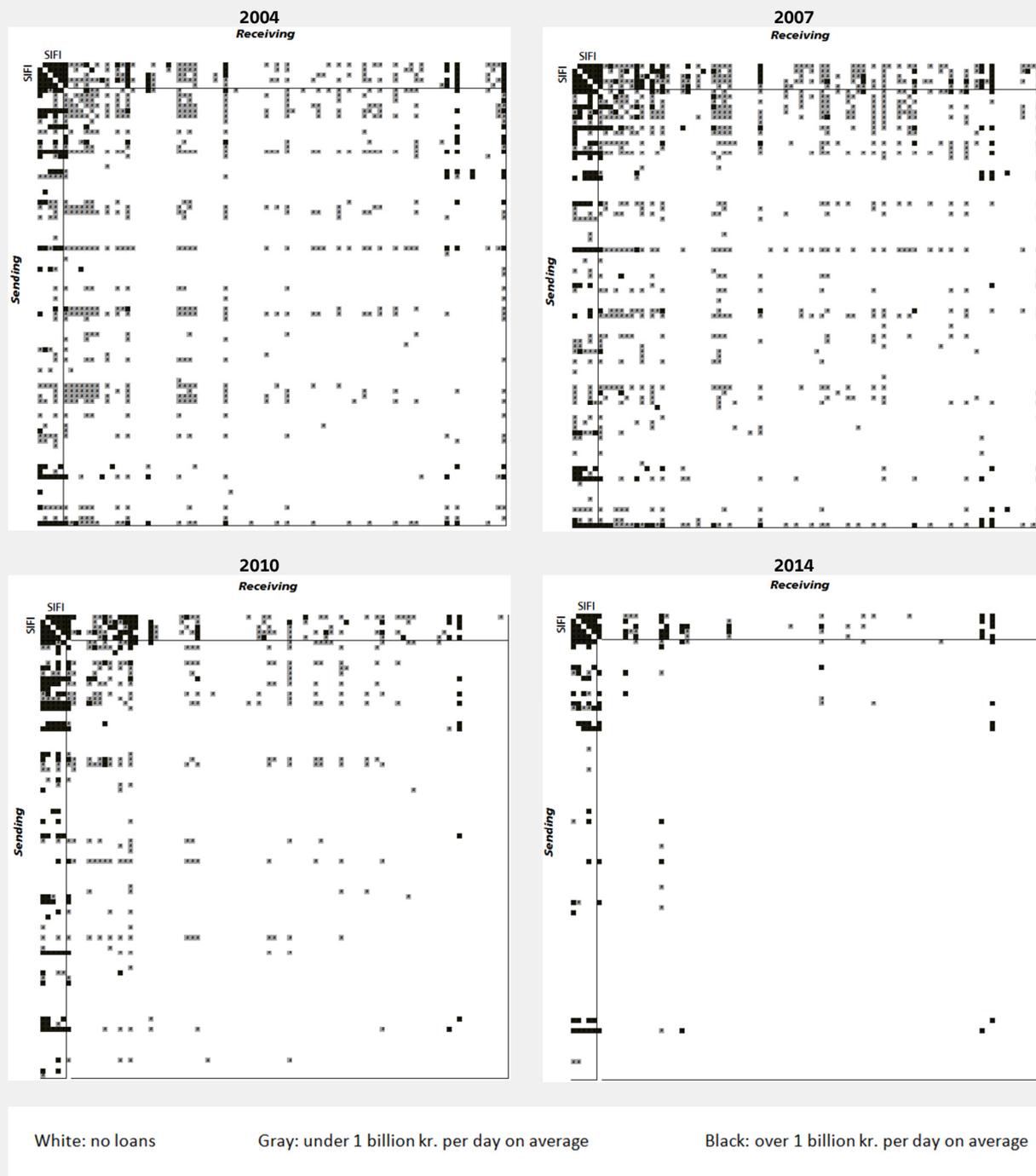
A few of the large and medium-sized banks are still relatively active in the market providing and receiving liquidity for smaller banks. This suggests that they see a business model in assisting the liquidity management of the smaller banks.

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<sup>8</sup> In June 2014, six deposit-banking and mortgage-banking groups were selected by the Danish FSA as systemically important financial institutions, SIFIs, in Denmark: Danske Bank, Nykredit Realkredit, Jyske Bank, Nordea Bank Danmark, Sydbank and DLR Kredit. A financial institution is classified as systemically important if, for two consecutive years, it has exceeded at least one of three indicators of systemic importance: 1. The size of the balance sheet is equivalent to more than 6.5 per cent of Denmark's GDP, 2. Loans comprise more than 5 per cent of total sector loans, 3. Deposits comprise more than 5 per cent of total sector deposits. The selection of institutions was reaffirmed in June 2015.

Individual banks' bilateral exposures in Danish uncollateralised day-to-day interbank market, annual averages of days with exposures

Chart 5.1



Note: The ordering of individual banks is the same in all charts.  
 Source: See Section 2.

Overall, in 2005-06 the number of banks coming to market for liquidity exceeded the number of banks providing liquidity considerably. In 2007-12 the situation was reversed, perhaps indicating the general tendency towards fewer banks relying on the market for funding. Since 2012 the number of lenders and borrowers has been relatively balanced.

## 5.2 THE USE OF THE MARKET FOR LIQUIDITY MANAGEMENT AND FUNDING

In general, banks use the short-term uncollateralised Danish interbank market to manage their daily liquidity and short-term funding needs. For individual banks access to liquidity in the market can at times be important to handle unexpected liquidity shocks. However, the uncollateralised krone-denominated day-to-day market only comprises a minor share of the overall interbank exposures by banks. Furthermore, in line with the general trend in the EU, cf. European Central Bank (2012), Danish banks' overall interbank exposures have declined following the financial crisis. In recent years, Danish banks have in general changed their funding mix considerably towards customer deposits, thus lowering the demand for interbank funding. On average, the Danish banks had a considerable customer funding gap<sup>9</sup> in the years leading up to the financial crisis. Since 2012 this has changed to a surplus.

### **BORROWING AND LIQUIDITY RISK**

The decline in exposures in the short-term uncollateralised Danish interbank market after 2009 is clearly visible in relation to two measures of bank size; liquid assets and balance sheet size, cf. Chart 5.2. In the period 2005-08 a number of banks had on active days average exposures above 5 percent of liquid assets and above 1 percent of total assets. Borrowing by smaller banks has generally been larger relative to their size throughout the period but the fall in the average borrowed amount relative to bank size is much more pronounced for the medium-sized and small banks. Borrowing by the larger banks seems to have been more stable at a lower level relative to their balance sheet size. The lower level might reflect easier access to foreign money markets for the larger banks.

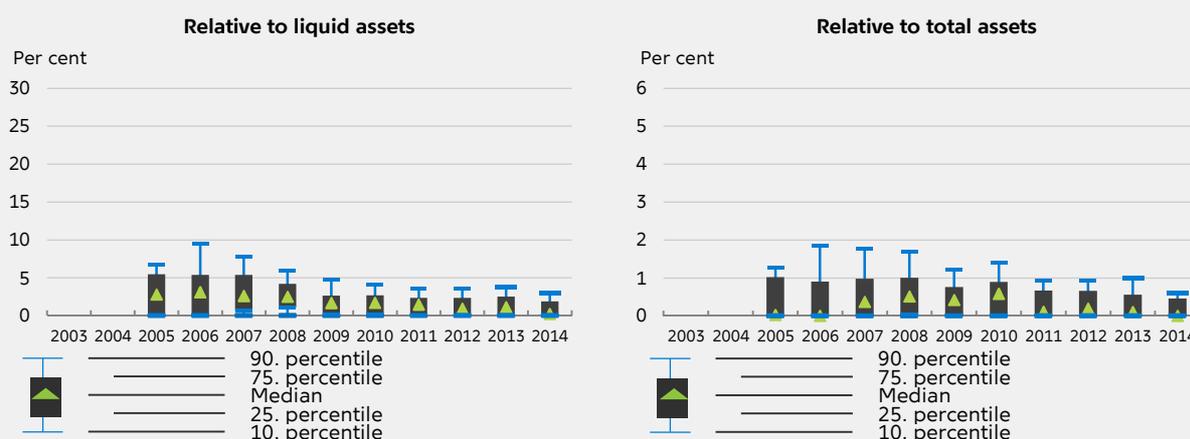
The fall in borrowing levels reflects both less borrowing by individual institutions as well as the closure of some of the banks which used the market heavily relative to their size. The levels in Chart 5.2 generally point towards moderate borrowing levels by banks in the uncollateralised day-to-day money market. The median for the borrowing relative to balance sheet size has moved from around 0.5 percent in 2007-10 to 0.1 percent in 2014.

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<sup>9</sup> Loans less customer deposits.

### Borrowing exposure in the Danish uncollateralised day-to-day money market for Danish banks, annual averages of days with exposures

Chart 5.2

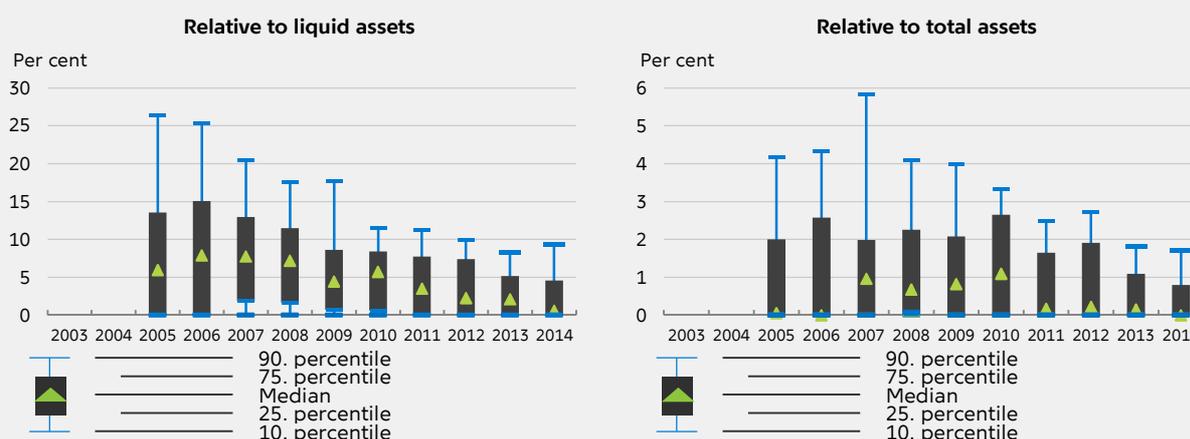


Note: Annual average borrowing amount on active days in the uncollateralised Danish money market relative to end-of-year liquid assets and total assets as defined in the accounting reporting to Finanstilsynet. Data is only available for Danish banks and is at group level.  
Source: See Section 2 and Finanstilsynet.

However, in some periods and for some banks the significance of the market has been considerably larger, cf. Chart 5.3. In 2005-09 more than 10 banks had highest borrowing exposure above 15 per cent of their liquid assets and 2 per cent of total assets. In 2007 a few banks on single days had liabilities in the market equal to 6 per cent of their total assets and a single bank had a highest borrowing of 13 per cent of total assets.

### Highest borrowing exposure in the Danish uncollateralised day-to-day money market for Danish banks

Chart 5.3

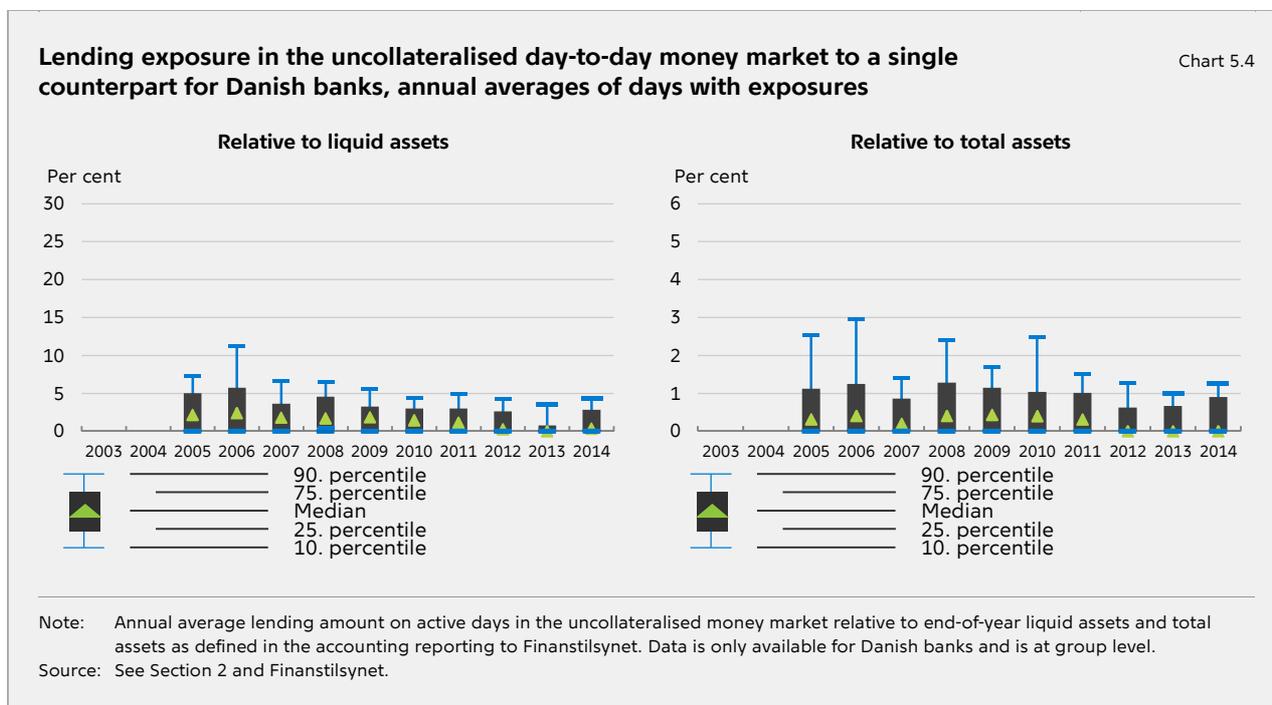


Note: Highest borrowing amount during the year in the uncollateralised Danish money market relative to end-of-year liquid assets and total assets as defined in the accounting reporting to Finanstilsynet. Data is only available for Danish banks and is at group level.  
Source: See Section 2 and Finanstilsynet.

## LENDING AND CREDIT RISK

The average lending by banks to a single counterpart has in most cases been below 5 percent of liquid assets and below 2 per cent of balance sheet of the lender while the

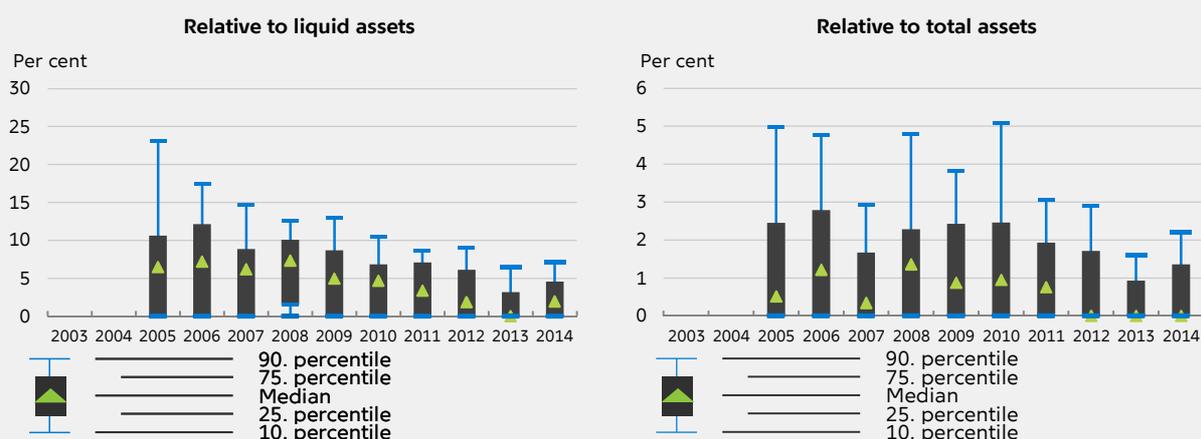
median exposure has declined from 0.4 percent of total assets in 2008-10 to close to zero today, cf. Chart 5.4. This indicates that the average credit risk towards a single counterpart taken by banks in this market has been limited and now is very low. Lending by larger banks to a single counterpart is lower than the average as they normally provide liquidity to banks with considerably smaller balance sheets.



Again, looking at the highest exposure towards a single counterpart, and not the average, the credit risk on some days has been considerably higher, cf. Chart 5.5. From 2012 the level relative to the total asset has fallen as a result of declining lending activity by smaller banks from whom the large loans relative to balance sheet size typically originated.

## Highest lending exposure in the uncollateralised money market to a single counterpart on active days for Danish banks

Chart 5.5



Note: Highest lending amount on active days in the uncollateralised money market relative to end-of-year liquid assets and total assets as defined in the accounting reporting to Finanstilsynet. Data is only available for Danish banks and is at group level.

Source: See Section 2 and Finanstilsynet.

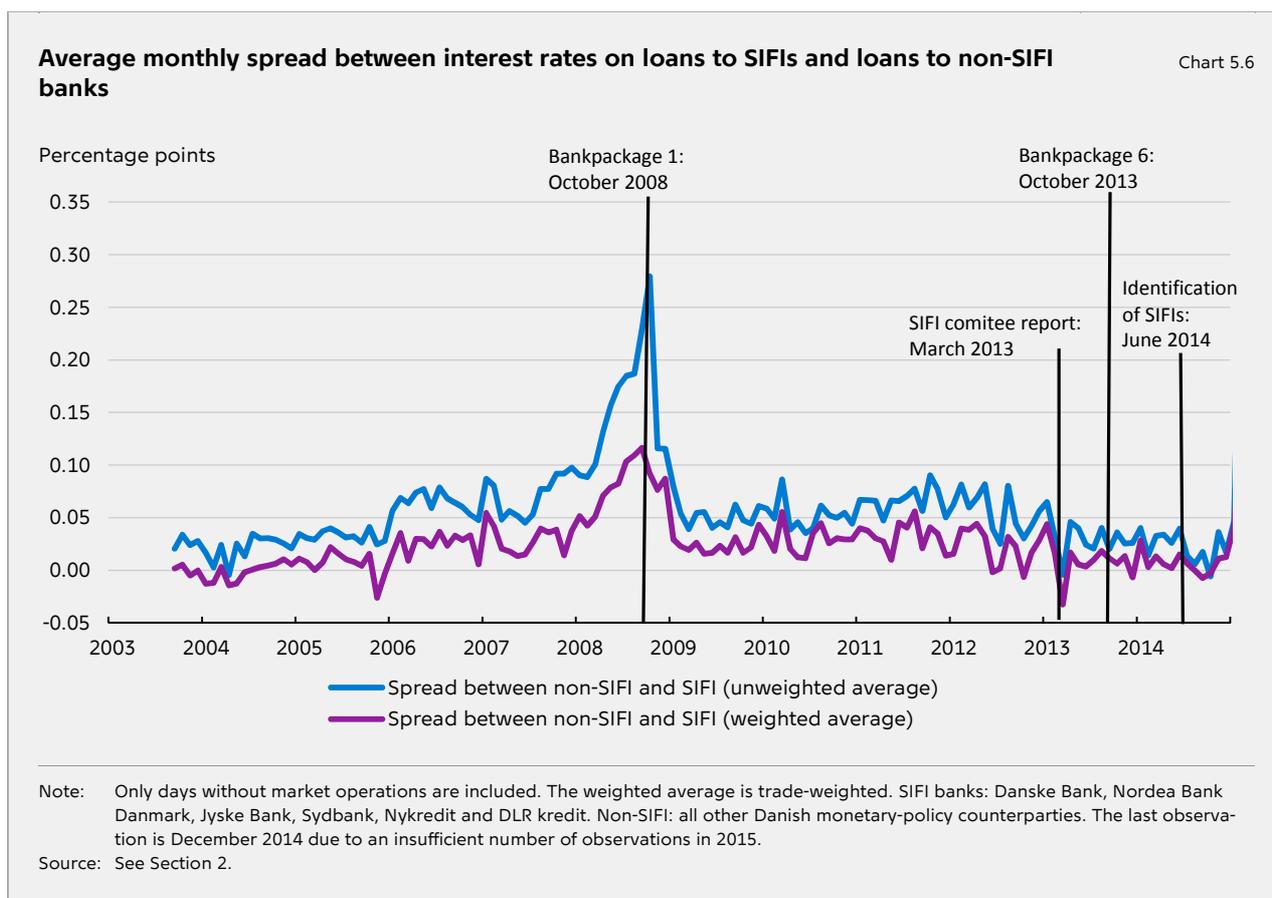
## 5.3 INTEREST RATE DIFFERENCES BETWEEN SIFI AND NON-SIFI BANKS

Looking at the entire period 2003-15 the institutions designated as Danish SIFIs in 2014 have enjoyed a negative spread to the average tomorrow-next rate in the market. Relative to the non-SIFI banks the spread has on average been between 2.5 (trade-weighted average) and 6 basis point (unweighted average). The difference in weighted and unweighted averages suggests that a share of the highest spreads recorded for non-SIFI banks stems from small transactions.

Except for 2007-08 the spread seems to have been relatively stable over the period. In 2007-08 the spread widened progressively and reached a peak in October 2008, cf. Chart 5.6. In early October 2008 the Bank Package 1 was adopted by the Danish Parliament. Included in the Package was a two-year arrangement where the Government guaranteed all the deposit banks' ordinary creditors against losses to the extent that the losses were not covered by the Deposit Guarantee Scheme, other investor arrangements, or covered by other means. This led to a marked decline in the spreads in the market in general in November and December 2008 and also in the spreads between interest rates on loans to SIFIs and loans to non-SIFI banks.

No direct effect from the announcement of the appointment of Danish SIFI banks is visible in the spread. This is the case for both the formal appointment in June 2014, the approval of Bank Package 6 in October 2013 which contained the identification criteria for the Danish SIFIs and for the publication of the report by the SIFI committee in March 2013, cf. the list of events in annex A. It is thus not possible to identify a change in the interest rates paid by Danish SIFIs relative to non-SIFIs in the Danish day-to-day uncollateralised money market. The general tendency to lower interest rates paid by SIFIs over the entire period might stem from perceived implicit government guarantee.

However, it might also simply reflect differences in perceived credit quality of the banks without any relation to government guarantees.



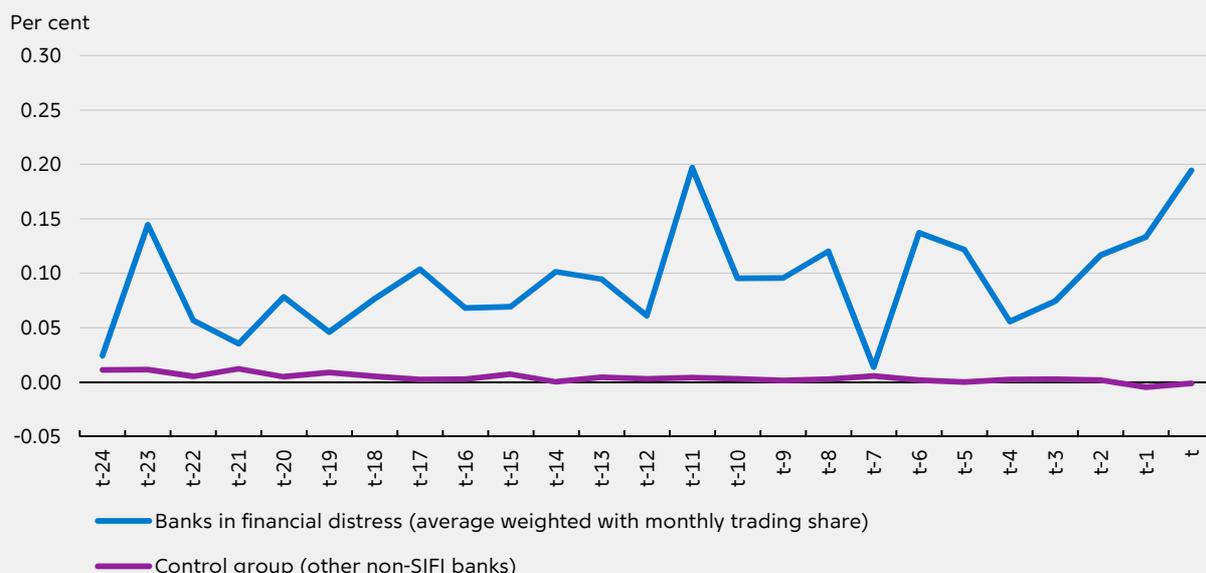
## 5.4 BANKS IN FINANCIAL DISTRESS AND THE EFFECT ON THEIR MARKET PARTICIPATION AND BORROWING TERMS

In this final section we examine if the monitoring of counterparty credit risk results in changes to market access and interest rate spreads paid by banks in financial distress. Banks with increased probability of failure stemming from distress in the form of liquidity, solvency or other issues would be expected to be treated differently due to their increased credit risk. The analysis is conducted by examining a sample of 24 Danish banks that came into financial distress during the period 2008-13. We explore the market access and borrowing terms of these banks around the time of the announcements of their distress, cf. Annex A.

Banks which later became distressed seems on average to have paid a significantly higher interest rate than other banks on their borrowing in the day-to-day uncollateralised money market well before the time of announcement. An interest rate spread relative to other non-SIFI banks is detectable already two years ahead of a distress announcement, cf. Chart 5.7. The spread appears to be increasing in the four months preceding the announcement, and is on average almost 20 basis points at the time of announcement. This suggests that the market was at least partially aware of increased credit risk associated with loans to those banks, which later became distressed.

**Banks in financial distress, monthly interest rate spread**

Chart 5.7



Note: Monthly observations of average spread to average tomorrow-next-interest rate for all banks. Time t is the month of the announcement related to distress, cf. Annex A. The sample of banks in financial distress consists of 24 banks in distress from 2008 to 2013: Roskilde Bank, Bonusbanken, bankTrelleborg, Finansbanken A/S, Ringkjøbing Bank, Løkken Sparekasse, Lokalbanken i Nordsjælland, Gudme Raaschou Bank, Capinordic, Morsø Sparekasse, Skælskør Bank, Eik Bank Danmark, Morsø Bank, Amagerbanken, EBH Bank, Forstædernes Bank, Fionia Bank, Max Bank, Aarhus Lokalbank, vestJYSK Bank, Sparekassen Farsø, Sparekassen Østjylland, Tønder Bank and Sparekassen Lolland. For each bank a control group has been compiled following the same timing as the relevant bank in financial distress.

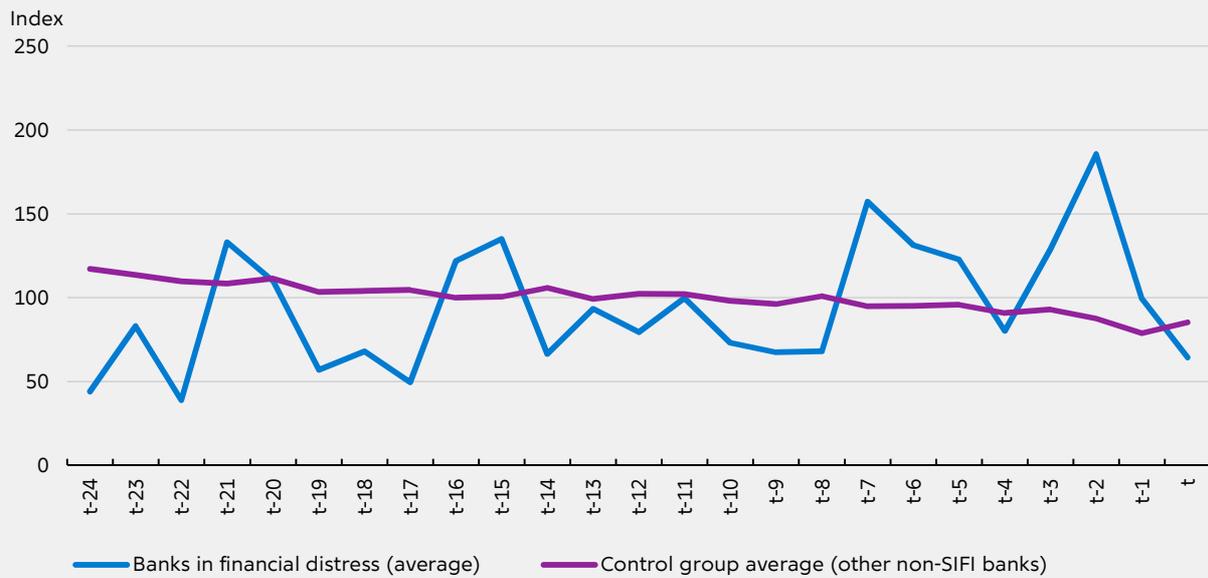
Source: See Section 2.

The awareness of increased credit risk might also to some extent have limited the market access somewhat for the distressed institutions. On average the number of trades made by institutions in distress fell in the two months preceding an announcement. However, the distressed banks were still generally relatively active in the uncollateralised day-to-day money market in the month in which the announcement of distress occurred. This was the case both in terms of the number of trades conducted, cf. Chart 5.8, and the amounts borrowed.

At the time of announcement of distress the number of trades by distressed banks was above 60 per cent of the average of the four years leading up to the announcement while the amount borrowed was at 70 per cent. For non-distressed banks the corresponding figures were 85 per cent and 89 per cent. Taken together these results give an indication that the monitoring of credit risk before official announcements resulted in higher interest rates paid while the indications of limitations in market access for banks with heightened credit risk are less clear.

**Banks in financial distress, monthly trading activity (number of trades)**

Chart 5.8



Note: Monthly observations indexed relative to the average trading activity for the individual banks in the 48 months preceding an announcement event, cf. Annex A. Only distressed banks with more than five active months are included. Time t is the month of the announcement related to distress where available. The sample of banks in financial distress consists of 24 banks in distress from 2008 to 2013: Roskilde Bank, Bonusbanken, bankTrelleborg, Finansbanken A/S, Ringkjøbing Bank, Løkken Sparekasse, Lokalbanken i Nordsjælland, Gudme Raaschou Bank, Capinordic, Morsø Sparekasse, Skælskør Bank, Eik Bank Danmark, Morsø Bank, Amagerbanken, EBH Bank, Forstædernes Bank, Fionia Bank, Max Bank, Aarhus Lokalbank, vestJYSK Bank, Sparekassen Farsø, Sparekassen Østjylland, Tønder Bank and Sparekassen Lolland. For each bank a control group has been compiled following the same timing as the relevant bank in financial distress.

Source: See Section 2.

## 6. FINAL REMARKS AND SCOPE FOR FURTHER RESEARCH

In this paper we have focused on Danmarks Nationalbank's monetary-policy counterparties' trading among themselves in the uncollateralised day-to-day market. For this segment of the money market we have been able to compile fairly complete transactions data estimated via a Furfine-style algorithm on the basis of payment flows from Danmarks Nationalbank's real-time gross settlement (RTGS) system, Kronos, combined with information from related SWIFT-messages.

Even though the day-to-day segment is the most significant part of the uncollateralised interbank market in Denmark, it could be interesting also to cover longer maturities in future research. However, based on experiences from the euro area, one might get less reliable results when Furfine-style algorithms are used to identify loans with longer maturities, cf. European Central Bank (2014).

As mentioned in Section 2 we are not able to identify all trades of krone-denominated day-to-day loans between Danmarks Nationalbank's monetary-policy counterparties' and foreign banks. We have therefore chosen only to analyse the internal trade among the Nationalbank's monetary-policy counterparties in this paper. However, in future research it could be interesting to take a closer look at those money-market trades between Danmarks Nationalbank's monetary-policy counterparties and foreign banks that can be identified via our algorithm.

Another possible area of future research could be a formal econometric analysis of the determinants of the interest rate received and paid on uncollateralised day-to-day interbank loans. In this respect, it could be investigated to what extent the pass-through from monetary-policy interest rates to money-market rates depends on the liquidity positions of the individual banks etc.

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# ANNEX A: LIST OF EVENTS

## MONETARY-POLICY INSTRUMENTS AND OPERATION PROCEDURES, PAYMENT SYSTEMS AND MONEY MARKET – DENMARK

### Lending and deposit facilities in Danish kroner

Announcement date	Implementation date	Expiry date	Description
30 January 2007 (Danmarks Nationalbank's web)	3 May 2007		The standard maturity of Danmarks Nationalbank's monetary-policy loans and certificates of deposits was reduced from 14 to 7 days in order to reduce fluctuations in the day-to-day money-market rate in periods where the Nationalbank was expected to change its monetary-policy interest rates.
9 May 2008 (press release from Danmarks Nationalbank)	23 May 2008	26 February 2011	A temporary credit facility at Danmarks Nationalbank was introduced. Under the facility the monetary-policy counterparties could borrow on a weekly basis against a new special type of bills, so-called "loan bills". Loan bills could be issued by deposit banks in Denmark. When acquired by other monetary-policy counterparties, these bills could be pledged to Danmarks Nationalbank as collateral for loans at an interest rate equivalent to the Nationalbank's lending rate plus a spread. Originally the facility was announced to be available until 20 May 2009. On 11 November 2008 the availability of the facility was extended by one year until 21 May 2010. On 8 April 2010 came another extension until 26 February 2011.
26 September 2008 (press release from Danmarks Nationalbank)	26 September 2008	26 February 2011	Danmarks Nationalbank introduced a temporary credit facility offering loans on a weekly basis to the monetary-policy counterparties on the basis of their excess capital adequacy (i.e. the difference between base capital and the capital need) less a margin of 1 percentage point. The maximum credit line was DKK 800 million per institution and the interest rate was equivalent to the Nationalbank's lending rate plus a spread. Originally the facility was announced to be available until 30 January 2009. On 7 October 2008 the availability of the facility was prolonged until 30 September 2010. On 8 April 2010 came another extension until 26 February 2011.
4 June 2009 (press release from Danmarks Nationalbank)	8 June 2009 (The first open market operation with this margin took place on 12 June 2009)		Danmarks Nationalbank introduced a spread between its lending rate and the rate of interest on certificates of deposit. The aim was to give deposit banks and mortgage banks an incentive to even out mutual liquidity differences via the money market rather than using Danmarks Nationalbank's facilities.
30 September 2011 (press release from Danmarks Nationalbank)	28 October 2011	27 June 2014	Danmarks Nationalbank introduced 6-month loans at a variable rate of interest equivalent to Danmarks Nationalbank's lending rate. The 6-month loans were offered on the last Friday of each month. On 2 December 2013 it was announced that the possibility of raising 6-months loans would be terminated with effect from July 1, 2014.
5 December 2011 (speech at The Danish Bankers Association's Annual Meeting)  8 December 2011 (press release from Danmarks Nationalbank)			Danmarks Nationalbank supplemented its monetary-policy instruments with the option to perform liquidity-adjusting deposit and loan operations in kroner to absorb or provide liquidity outside the normal instruments. These operations may be deposits with Danmarks Nationalbank, loans against pledging of collateral included in Danmarks Nationalbank's collateral basis, or FX swaps, where foreign exchange is collateral. Danmarks Nationalbank may allocate or absorb liquidity in kroner by auction or by conducting bilateral transactions with individual counterparties. The rate of interest and maturity will reflect market conditions.
8 December 2011 (general facility - press release from Danmarks Nationalbank)  16 January 2012 (conditions and	30 March 2012 (first offering)	28 September 2012 (last offering)	Danmarks Nationalbank offered its monetary-policy counterparties 3-year loans at a variable rate of interest equivalent to Danmarks Nationalbank's lending rate plus a premium.

dates - press release from Danmarks Nationalbank)			
10 February 2012			Danmarks Nationalbank posted a technical description on the handling of potentially negative monetary-policy interest rates on its website.
14 June 2012 (Danmarks Nationalbank's Monetary Review)			Danmarks Nationalbank announces that it has instruments for handling negative interest rates, if the fixed-exchange-rate policy requires further interest-rate reductions.
5 July 2012 (Interest rate reduction with a move into the negative range - press release from Danmarks Nationalbank)	6 July 2012	24 April 2014	Danmarks Nationalbank introduced a negative nominal rate of interest on certificates of deposit to counter a sustained inflow of foreign exchange and a tendency for the krone to strengthen. This was the first time ever one of Danmarks Nationalbank's interest rates became negative.
4 September 2014 (Interest rate reduction with a move into the negative range - press release from Danmarks Nationalbank)	5 September 2014		Danmarks Nationalbank reintroduced a negative nominal rate of interest on certificates of deposit as a consequence of a reduction of the European Central Bank's monetary-policy rates.

### The current-account-limit system

Announcement date	Implementation date	Expiry date	Description
	2 January 2003		Minor revision of the individual limits for the monetary-policy counterparties' current-account deposits with Danmarks Nationalbank.
	2 January 2006		The current-account-limit system for the monetary-policy counterparties' current-account deposits with Danmarks Nationalbank was simplified. All counterparties became subject to a standard limit of 100 million kroner. Counterparties with most money-market activity received a supplement to the standard limit. At the same time, the Nationalbank raised the overall limit for current-account deposits from around 20 to 25 billion kroner. This reflected partly the introduction of standardised limits, which gave many smaller banks a higher limit than before, partly the general economic development since the last adjustment of the current-account limits in 2003.
	2 March 2006		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded. Prior to the conversion a number of monetary-policy counterparties had deposited large sums at their current accounts at Danmarks Nationalbank. Anticipating an increase in interest rates, these institutions speculated in depositing their excess liquidity in their current accounts and deferring their purchases of certificates of deposit until interest rates had risen. Just over kr. 9 billion of the total current-account deposit was converted into certificates of deposit.
	26 September 2008; 29 September 2008; and 30 September 2008		The turbulent money markets, combined with heavy demand for liquidity around the end of the quarter, led to temporary suspension of the current-account limit.
	6 January 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	8 June 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit.
5 July 2012 (press release from Danmarks Nationalbank)	6 July 2012	24 April 2014	The current-account limits were raised significantly to reduce the impact of the negative interest rate on the monetary-policy counterparties.
	9 July 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.

	13 July 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	31 August 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	5 October 2012		Danmarks Nationalbank raised the limit for the monetary-policy counterparties' current-account deposits by an amount corresponding to the increase in the 3-year loans, so that the overall current-account limit was just under kr. 105 billion. The reason was that, viewed in isolation, the increase in the 3-year loans entailed an equivalent increase in the counterparties' holdings of certificates of deposit at the negative rate of interest, and that the counterparties' holdings already ensured a sufficient pass-through from the rate of interest on certificates of deposit to money-market interest rates before the most recent 3-year loans were offered.
	4 December 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	21 December 2012		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	4 March 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	15 March 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	7 June 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	14 June 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	2 July 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	5 July 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	2 August 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	30 August 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	11 October 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	1 November 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	4 November 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	8 November 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	29 November 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	3 December 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	6 December 2013		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	3 January 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	10 January 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	20 January		Danmarks Nationalbank converted current-account deposits into

	2014		certificates of deposit because the overall current-account limit had been exceeded.
	4 February 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	7 February 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	28 February 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	7 March 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	2 April 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
24 April 2014 (press release from Danmarks Nationalbank)	25 April 2014		When the rate of interest on certificates of deposit returned to positive territory on 25 April 2014, the total current account limit was reduced from kr. 67.4 to 38.5 billion. In that connection the allocation of individual limits was also simplified. All monetary policy counterparties were allocated a standard limit with a potential additional allocation determined on the basis of the counterparty's activity in the money market.
	26 September 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	3 October 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	17 November 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	28 November 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	5 December 2014		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	21 January 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	23 January 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	27 January 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	30 January 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	4 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	5 January 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	6 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	11 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	13 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	18 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	20 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	26 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had

			been exceeded.
	27 February 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	3 March 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	6 March 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
	13 March 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
18 March 2015	20 March 2015		The monetary-policy counterparties' current-accounts limits at Danmarks Nationalbank were increased from an overall limit of 37 billion kroner to 145 billion kroner. The monetary-policy counterparties' deposits of Danish kroner at Danmarks Nationalbank had increased considerably as a consequence of Danmarks Nationalbank's purchase of foreign exchange in the market and the suspension of government bond issuance.
	20 March 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.
23 March 2015	23 March 2015		The monetary-policy counterparties' current-accounts limits at Danmarks Nationalbank were increased from an overall limit of 145 billion kroner to 173 billion kroner. In that connection the allocation of individual limits was also modified. Previously, Danmarks Nationalbank allocated the current-account limits based on the banks' activity in the Danish money market. However, in a situation with negative interest rates and a large difference between Danmarks Nationalbank's interest rates, more banks other than just the most active money market participants had a need for higher current-account limits. Going forward, Danmarks Nationalbank would therefore base the individual current-account limits on money market participation supplement with the counterparties' deposit liabilities. The change implied that the individual current-account limit was increased for a number of counterparties.
	27 March 2015		Danmarks Nationalbank converted current-account deposits into certificates of deposit because the overall current-account limit had been exceeded.

### Collateral framework

Announcement date	Implementation date	Expiry date	Description
	4 April 2003		Danmarks Nationalbank made a number of changes to its terms and conditions for accounts, mainly related to the introduction of the Scandinavian Cash Pool (SCP) – a scheme whereby account holders with Danmarks Nationalbank, Sveriges Riksbank and Norges Bank can obtain intra-day loans by pledging deposits with another Scandinavian central bank as collateral.
	14 June 2004		Danmarks Nationalbank's collateral framework was amended. It became possible for the monetary-policy counterparties also to use euro-denominated Danish central-government bonds and euro-denominated Danish mortgage bonds as collateral for monetary-policy loans as well as for intra-day current-account overdrafts.
	2 July 2007		Danmarks Nationalbank's collateral framework was amended. Krone- and euro-denominated covered bonds issued by institutions subject to the Financial Business Act or by Danish Ship Finance were included as eligible assets.
26 September 2008 (press release from Danmarks Nationalbank)	26 September 2008	26 February 2011	Danmarks Nationalbank expanded the collateral base for monetary-policy loans and intraday credit with senior debt (junior covered bonds issued in connection with SDOs or SDROs), investment fund shares, and quoted and (upon request and subject to approval by Danmarks Nationalbank) unquoted shares. The securities had to be denominated in Danish kroner or euro and issued by funds or corporations in the Kingdom of Denmark. The senior debt, investment fund shares and quoted shares had furthermore to be traded on the Copenhagen Stock Exchange and registered with VP Securities Services. Originally the expansion was announced to be in effect until 28 August 2009. On 7 October 2008 the expiry date was extended until 30 September 2010. On 8 April 2010 came another extension until

			26 February 2011.
	1 June 2009	30 September 2010	The collateral base for monetary-policy loans and intraday credit was expanded to include quoted VP-registered unsecured debt covered by the general government guarantee in Bank Rescue Package I.
	1 June 2009	30 December 2013	The collateral base for monetary-policy loans and intraday credit was expanded to include quoted senior debt (junior covered bonds issued in connection with SDOs or SDROs) issued by credit institutions with an individual government guarantee under the scheme established in connection with the adoption of Bank Rescue Package II.
	17 July 2009	30 September 2010	The collateral base for monetary-policy loans and intraday credit was expanded to include unquoted VP-registered unsecured debt covered by the general government guarantee in Bank Rescue Package I.
	17 July 2009	30 December 2013	The collateral base for monetary-policy loans and intraday credit was expanded to include unquoted senior debt (junior covered bonds issued in connection with SDOs or SDROs) issued by credit institutions with an individual government guarantee under the scheme established in connection with the adoption of Bank Rescue Package II.
	15 February 2010	30 December 2013	The collateral base for monetary-policy loans and intraday credit was expanded to include bonds issued by Special Purpose Vehicles that provide loans with individual government guarantees to Danish banks and mortgage-credit institutes.
	10 August 2011	30 June 2014	The collateral base for monetary-policy loans and intraday credit was expanded to include shares in jointly owned companies, i.e. shares in companies such as DLR Kredit and Nets.
16 August 2011 (press release from Danmarks Nationalbank)  (The specific terms were announced on 30 September 2011)	1 October 2011	30 June 2014	The collateral base for monetary-policy loans and intraday credit was expanded to include deposit banks' unsecured credit claims in Danish kroner and euro of good quality.
	1 May 2012	30 June 2014	The collateral base for monetary-policy loans and intraday credit was expanded to include bonds issued by companies primarily owned by financial institutions jointly, i.e. sector company bonds. On 2 December 2013 it was announced that the expansion would be terminated with effect from July 1, 2014
	1 May 2012		The collateral base for monetary-policy loans and intraday credit was expanded to include quoted and unquoted VP-registered own government-guaranteed non-subordinated unsecured debt issued by deposit banks and denominated in Danish kroner or euro.
	1 May 2012	30 June 2014	The collateral basis for monetary-policy loans and intraday credit was expanded to include the banks' credit claims of good quality in other currencies than Danish kroner and euro.
	15 February 2010	1 April 2015	Junior covered bonds that meet Danmarks Nationalbank's credit rating requirements were included in the permanent collateral basis.
	1 April 2015		Bonds issued by Danish Ship Finance were omitted from Danmarks Nationalbanks permanent collateral framework.

### Operations and facilities in other currencies

Announcement date	Implementation date	Expiry date	Description
	18 September 2008		Danmarks Nationalbank supplies US dollars amounting to a total of kr. 2.6 billion via the FX swap market at maturities of 5 days
24 September 2008 (press release from Danmarks Nationalbank)	26 September 2008 (first auction)	15 November 2009 (last auction)	Danmarks Nationalbank established a temporary swap line with the US Federal Reserve. On this basis the Nationalbank offered dollar loans to its monetary-policy counterparties. Originally, the total limit for the arrangement was an amount of 5 billion US dollars and would expire on 30 January 2009. On 29 September 2008, the limit for the arrangement was increased to 15 billion US dollars and the term was extended to 30 April 2009. On 3 February 2009, the term was extended to 30 October 2009. On 26 June 2009, the term was extended to February 1 2010. Auction dates in 2008: 26/9, 7/10, 24/10, 18/11, and 2/12. Auction dates in 2009: 16/1, 3/2, 12/2, 3/3, 13/3, 31/3, 7/4, 28/4, 26/5, 23/6, 21/7, 18/8, and 15/9.

	2 October 2008		Danmarks Nationalbank supplies euro via the FX swap market.
	10 October 2008		Danmarks Nationalbank supplies euro via the FX swap market.
27 October 2008 (press release from Danmarks Nationalbank)	10 November 2008 (first auction)	21 August 2009 (last auction)	Danmarks Nationalbank established a temporary swap line with the ECB with a view to offer euro loans to its monetary-policy counterparties. The limit for the arrangement was 12 billion EUR and was announced to remain in place as long as needed. Auction dates in 2008: 10/11, 12/12, and 19/12. Auction dates in 2009: 21/1, 19/2, 10/3, 19,5 10/6, and 21/8

### Payment systems etc.

Announcement date	Implementation date	Expiry date	Description
	30 June 2003		The use of the public sector's payment system for settlement of payments between central government and local governments, called OBS, began. OBS affected only moderately the volume of in- and outgoing central-government payments on certain days and thereby the liquidity of the Danish money market. Danmarks Nationalbank therefore did not open for sale of certificates of deposit.
	8 September 2003		The Danish krone was introduced as an eligible currency in the payment-versus-payment CLS settlement process.
	23 September 2003		Most of eastern Denmark experienced a power failure for a few hours during the day. The power failure did not cause any major problems in the money market. In connection with the power failure, Danmarks Nationalbank contributed liquidity in the form of extraordinary repurchases of certificates of deposit.
	16 November 2006		Due to an unsuccessful software update the Danish large-value payment system experienced an intraday operational failure. Danmarks Nationalbank extended its opening hours and gave access to extraordinary buy-back of certificates of deposit.

### Money market

Announcement date	Implementation date	Expiry date	Description
	16 June 2003		The British Bankers' Association began to compile interest rates for uncollateralised loans denominated in Danish kroner in the London interbank market. The DKK-Libor interest rates are calculated on the basis of interest rates reported by 8 banks for 15 maturities from overnight to 12 months.
	1 April 2005		The number of banks participating in the daily fixing of Cibar (Copenhagen Inter-Bank Offered Rate) was increased from 8 to 12, and the number of maturities was raised from 8 to 14.
18 December 2007 (Danmarks Nationalbank, <i>Danish Government Debt Management Policy - Strategy 2008</i> )	End 2008		The Danish central government stopped the issuance of Treasury bills.
14 December 2009 (Danmarks Nationalbank, <i>Danish Government Debt Management Policy - Strategy 2010</i> )	25 February 2010		The Danish central government reopens its Treasury bill programme.
	2 January 2013		The Danish Bankers Association introduced a new market-based reference rate based on the CITA swap rate for maturities of 1-12 months.

## Bond market

Announcement date	Implementation date	Expiry date	Description
6 October 2014			A settlement period of two trading days (T+2) instead of the previous three days (T+3) was introduced on the Danish bond market.
30 January 2015 (press release from Danmarks Nationalbank)			With a view to limiting capital inflow into Denmark and hence the strengthening of the krone, the Ministry of Finance, at the recommendation of Danmarks Nationalbank, decided to suspend issuance of Danish government bonds in order to reduce the supply of government bonds and thereby pushing down yields.

## FINANCIAL STABILITY – DENMARK

### Bank packages etc.

Announcement date	Implementation date	Expiry date	Description
5 October 2008	10 October 2008	30 September 2010	<p>Announcement of a political agreement concluded between a broad majority of the Parliament and the financial sector on a Bank Package 1 with the following main elements:</p> <ul style="list-style-type: none"> <li>The Government and the private deposit banks (the members of Det Private Contingency Association) agreed on a two-year arrangement, where the Government guaranteed all the deposit banks' ordinary creditors against losses to the extent that the losses were not covered by the Deposit Guarantee Scheme, other investor arrangements, or covered by other means. The Agreement covered all deposit banks in the Kingdom of Denmark which were members of Det Private Beredskab. The government guarantee was very extensive (DKK 4,200 billion or around 250 per cent of GDP).</li> <li>The Government established the Financial Stability Company as a winding-up company. In case a deposit bank could not fulfil the statutory requirements of solvency, and there was no possibility to reach a viable private solution, the Financial Stability Company would provide capital to a newly established company, which would take over and wind up the deposit bank in a controlled fashion.</li> <li>The Private Contingency Association provided a guarantee of DKK 10 billion to cover losses in the winding-up company. In addition, The Private Contingency would pay a market conform guarantee commission amounting to DKK 7,5 billion annually to the Financial Stability Company during the two years the arrangement was planned to be in force. If the estimated losses including interest on provided capital of the Financial Stability Company exceeded the guarantee and the paid guarantee commission from the Private Contingency Association, the Association would cover additional losses for the amount of maximum DKK 10 billion via an increased guarantee commission.</li> <li>The arrangement was combined with a ban on dividend payments and share repurchases by deposit banks as well as new stock options for management. Expiring stock option programmes were not to be renewed or extended. Furthermore, a number of limitations were imposed on the deposit banks in terms of lending growth and risk assumed.</li> <li>Finally, the bank package included an increased amount of resources to the Danish Financial Supervisory Authority.</li> </ul>
8 October 2008 (press release from Danmarks Nationalbank)			Danmarks Nationalbank issued a press release stating that Danmarks Nationalbank would take care of any eventual problem deposit banks, as has been the case with Roskilde Bank and others until the bill regarding Bank Package 1 has been passed.
18 January 2009	3 February 2009 (adopted by the Danish Parliament)	31 December 2010	<p>Political agreement a Bank Package 2 ("The Credit Package") with the following main elements:</p> <ul style="list-style-type: none"> <li>All deposit banks and mortgage banks domiciled in Denmark and the Danish Ship Finance were offered the opportunity to apply for injections of government hybrid Tier 1 capital. As a general rule, credit institutions receiving capital injections had subsequently to have a Tier 1 ratio of at least 12 per cent. Capital injections were subject to conditions, including requirements regarding lending policy, executives' remunerations and dividend policy. The deadline for application for government capital injections was 30 June 2009. On</li> </ul>

			<p>this date, 50 institutions had applied for a total of kr. 63 billion. Overall, 43 credit institutions received capital injections during 2009, totalling kroner 46 billion at an average yield to maturity of 10.08 per cent.</p> <ul style="list-style-type: none"> <li>• Institutions issuing SDOs and SDROs as well as Danish Ship Finance A/S could apply for individual government guarantees for non-subordinated unsecured debt and for loans issued for financing top-up collateral with a maturity of up to three years. When the option expired at the end of 2010, a total of 50 credit institutes had made use of the facility and issued debt with a government guarantees for a total of kroner 193 billion. The last guarantee expired on 10 February 2015.</li> </ul>
1 June 2010 (parts of the agreement were already published on 24 March 2010)	1 October 2010		<p>Bank Package 3 ("The Exit Package") was adopted by the Danish Parliament. The main elements of the package, which introduced a new winding-up scheme for ailing banks, were as follows:</p> <ul style="list-style-type: none"> <li>• Under the scheme, the Financial Stability Company can – as alternative to compulsory liquidation – assist with the controlled winding-up of an ailing deposit bank by setting up a subsidiary to continue the activities of the deposit bank in question. Under the winding-up scheme, failing banking institutions sell their assets to the subsidiary of the Financial Stability Company. The objective of the resolution scheme is to ensure that ordinary customers do not immediately experience any difference in the day-to-day handling of their banking transactions and may continue to use their payment cards, internet banking, etc.</li> <li>• Coverage by the Guarantee Fund for Depositors and Guarantors is the same under the resolution scheme as for compulsory liquidation. Like compulsory liquidation, this implies a risk that shareholders and unsecured creditors may incur losses.</li> <li>• It is up to the individual ailing deposit bank whether it prefers the new winding-up scheme or ordinary winding-up proceedings. However, all deposit banks had at its forthcoming general meeting to decide whether it wanted to join the scheme beforehand. For the great majority of the banking institutions, the general meeting did not wish to make such an indication. For those banking institutions it will be up to their boards of directors to decide on the choice of winding-up method if and when it becomes necessary.</li> </ul>
25 August 2011			<p>A majority in the Danish parliament concluded a political agreement on Bank Package 4 ("The Consolidation Package") with the aim of giving sound deposit banks a greater incentive to acquire distressed deposit banks:</p> <ul style="list-style-type: none"> <li>• The Guarantee Fund for Depositors and Guarantors and the Danish government are allowed to provide compensation to a sound deposit bank that is willing to take over all parts of a distressed deposit bank, except share capital and subordinate capital. It is a precondition that neither the Guarantee Fund nor the Danish government is worse off as a result of this solution than they would have been in case of resolution of the distressed deposit bank under Bank Package 3. An earn-out agreement is to ensure that the government receives compensation if, three years after the takeover, it turns out that the distressed deposit bank makes larger profits than had been expected.</li> <li>• As an alternative model the Financial Stability Company may take over all parts of a distressed deposit bank, except share capital and subordinate capital, and immediately afterwards transfers the sound parts of the deposit bank to another, sound deposit bank. As a minimum, this transfer is to include all exposures to private customers. The Guarantee Fund and the Danish government may provide compensation to the Financial Stability Company – provided that neither the Guarantee Fund nor the Danish government is worse off as a result of this solution than they would have been in case of resolution of the deposit bank under Bank Package 3. The Financial Stability Company will subsequently be in charge of the resolution of the unsound parts of the distressed deposit bank, while the operation of the sound parts is carried on by the acquiring deposit bank.</li> <li>• With a view to supporting consolidation among deposit banks, a scheme was introduced whereby deposit banks until end-2013 could apply for individual government guarantees in connection with mergers. The scheme was administered by the Financial Stability Company.</li> <li>• It was decided to alter the funding of the Guarantee Fund for Depositors and Investors so that in future contributions will be more evenly distributed over time. Previously the funding of the Fund was based on commitments from the banks, but only a minor share of the Fund's assets was contributed ex ante.</li> </ul>
2 March 2012			<p>The political parties behind the bank packages concluded an agreement on a number of initiatives to facilitate access to funding by small and medium-sized enterprises in particular. The main elements in this Bank Package 5 ("The Development Package")</p>

			<p>were as follows:</p> <ul style="list-style-type: none"> <li>• Vækstfonden was allowed to issue subordinated loans to small and medium-sized enterprises within a limit of DKK 500 million.</li> <li>• The export loan scheme of the Danish Export Credit Agency was raised by DKK 15 billion, to a total of DKK 35 billion.</li> <li>• Bank Package 5 included a promise to facilitate access to funding of new activities for the agricultural sector. In May 2012, the Danish Bankers Association, the Danish Agriculture &amp; Food Council, Nykredit, DLR Kredit and the Financial Stability Company concluded an agreement to establish Financing bank for agriculture as a new financing bank for agriculture. Financing bank for agriculture opened in October 2012 with a capital base of DKK 300 million provided by the financial sector (DKK 125 million), the Danish Agriculture &amp; Food Council (DKK 30 million) and the Financial Stability Company (DKK 75 million). In addition, the Financial Stability Company provided a subordinated loan of DKK 70 million. The Financing bank for agriculture is to take over viable agricultural exposures from the Financial Stability Company and other banks.</li> <li>• In connection with Bank Package 5, the Financial Stability Company entered into a conditional agreement with FIH Erhvervsbank on taking over the bank's portfolio of property-related loans. At the same time, the Financial Stability Company was to take over the financing of these exposures so that FIH Erhvervsbank could acquire liquidity in order to repay debt with an individual government guarantee. The objective of the agreement was to strengthen FIH Erhvervsbank's funding situation to enable it to provide funding again to small and medium-sized enterprises, and to avoid a strong reduction in its lending, which could potentially have negative knock-on effects on other banks. In July 2012, the Financial Stability Company acquired property exposures of DKK 17.6 billion from FIH Erhvervsbank. The Financial Stability Company was guaranteed full compensation from FIH Holding in the event of financial losses in this connection.</li> </ul>
	30 November 2012		<p>The Danish parliament concluded an agreement (the "credit package") with a range of new funding opportunities for small and medium-sized firms:</p> <ul style="list-style-type: none"> <li>• The limit for subordinated loans and growth guarantees offered by Vækstfonden was increased.</li> <li>• Eksport Kredit Fonden was allowed to offer guarantees for investment loans for exporters' production facilities in Denmark.</li> </ul>
19 December 2012	8 April 2013 (first meeting)		<p>The Folketing (Danish parliament) passed a bill to establish a Systemic Risk Council tasked with identifying and monitoring systemic financial risks and issuing observations, warnings and recommendations in order to prevent or reduce the accumulation of such risks. Warnings and recommendations may be issued to the Danish Financial Supervisory Authority and – if they relate to legislation – to the government. If a recommendation is not observed, the recipient must justify this decision. The Council will comprise one representative from each of the Ministries of Business and Growth, Finance, and Economic Affairs and the Interior, two from the Danish Financial Supervisory Authority, two from Danmarks Nationalbank and three independent experts.</p>

### Systemically important financial institutions (SIFIs)

Announcement date	Implementation date	Expiry date	Description
14 March 2013			<p>The Committee on Systemically Important Financial Institutions presented a report with recommendations on a system for identification and regulation of systemically important financial institutions, SIFIs. If the recommended threshold values were applied, six Danish credit institutions are currently SIFIs (Danske Bank, Nykredit, Nordea Bank Danmark, Jyske Bank, BRFkredit, and Sydbank).</p>
	10 October 2013		<p>With Bank Package 6 in a political agreement was reached on the following initiatives:</p> <ul style="list-style-type: none"> <li>• The Minister for Business and Growth was appointed as the designated authority for macroprudential instruments. The framework for one of the macroprudential instruments, the countercyclical capital buffer, will be phased in with the agree-</li> </ul>

			<p>ment. The Systemic Risk Council can make a recommendation to the Minister for Business and Growth on activation and determination of the buffer.</p> <ul style="list-style-type: none"> <li>• The agreement sets criteria for identification of Danish systemically important financial institutions, SIFIs. The SIFIs would be subject to an additional differentiated capital requirement of between 1 and 3 per cent of risk-weighted assets, depending on the institutions' systemic importance. This SIFI capital requirement was to be met by Common Equity Tier 1 and was to be phased in gradually in the period 2015-2019.</li> <li>• The SIFIs would also have to comply with new EU liquidity requirements specifying the volume of liquid assets an institution must hold to cover the net cash outflows in a 30-day liquidity stress scenario (the so-called Liquidity Coverage Ratio, LCR). The starting point was that the SIFIs should meet the LCR requirement from 2015, but the final decision should await the European Commission's decision in 2014 on the design of the LCR requirement.</li> <li>• As regards the LCR requirement for non-systemic credit institutions, the Bank Package 6 stipulated that it would be introduced gradually in accordance with the regulation's minimum requirement, i.e. gradual phasing-in from 60 per cent of the full requirement by 2015 to 100 per cent by 2018.</li> <li>• Establishment of a governing board for the Danish Financial Supervisory Authority's supervisory activities. The Minister for Business and Growth appoints seven members of the governing board, including one member from Danmarks Nationalbank. The governing board should take over the tasks of the Financial Council.</li> <li>• Setting up an expert group to assess the need to introduce a leverage ratio measure in Denmark. The expert group was to look into whether it would be appropriate to introduce a requirement that is higher than the 3 per cent forming the basis of international standards.</li> <li>• Legal basis for previously restructured mortgage banks whose principal shareholders are funds and associations to issue shares carrying no voting rights.</li> <li>• Target levels for and phasing-in of a deposit guarantee fund and resolution fund are to be discussed in connection with the parties' discussions on the implementation of the EU Crisis Management Directive in 2014 regarding crisis management and crisis management buffers.</li> <li>• Requirement to establish internal whistle-blower schemes for financial corporations' financial regulation violations.</li> </ul>
24 June 2014			The Danish Financial Supervisory Authorities announced that it on 19 June 2014 had named Danske Bank A/S, Nykredit Realkredit A/S, Nordea Bank Danmark A/S, Jyske Bank A/S, Sydbank A/S and DLR Kredit A/S as systemically important financial institutions, SIFIs.

### Individual deposit banks in financial distress

Announcement date	Implementation date	Expiry date	Description
21 January 2008			Sydbank acquired a minor bank, bankTrelleborg, which was in financial distress.
10 July 2008 (press release from Danmarks Nationalbank)			As a result of discussions between the Ministry of Economic and Business Affairs, the Danish Financial Supervisory Authority, the Danish Bankers Association and Danmarks Nationalbank, a commitment was issued by Danmarks Nationalbank to supply the necessary liquidity to Roskilde Bank, if needed. The Government and the Private Contingency Association had assured Danmarks Nationalbank of their support to the arrangement with a guarantee towards Danmarks Nationalbank. As a condition Roskilde Bank should work towards a full or partial sale of the bank. However, an attempt to sell all or parts of Roskilde Bank during the following month failed and additional losses were uncovered. On 22 August 2008, the external auditors notified the Danish Financial Supervisory Authority that Roskilde Bank was no longer able to meet the solvency requirements. On 24 August 2008 Danmarks Nationalbank and Det Private Beredskab took over all assets and all debt and other liabilities from Roskilde Bank, except from hybrid core capital and subordinated loan capital. Any loss in this relation was first to be covered by the DKK 750 million in capital contributed by the

			Private Contingency Association. The government confirmed that it supported the arrangement by a government guarantee to cover any losses Danmarks Nationalbank might suffer in connection with the takeover of Roskilde Bank. On 29 September 2008, Nordea, Spar Nord Bank and Arbejdernes Landsbank bought 9, 7 and 5 branches, respectively, of Roskilde Bank. On 10 August 2009, the remainder of Roskilde Bank was transferred from Danmarks Nationalbank and the Danish Contingency Association to the Financial Stability Company. In addition to ownership of Roskilde Bank, the Financial Stability Company also took over a subordinated loan from Danmarks Nationalbank as well as the credit facility at Danmarks Nationalbank that had been made available to Roskilde Bank.
15 September 2008			Nykredit submitted a recommended tender offer for the total outstanding share capital of Forstædernes Bank, which experienced financial difficulties. In October 2008 Nykredit acquired Forstædernes Bank.
15 September 2008			Svenska Handelsbanken submitted a recommended tender offer for the total outstanding share capital of Lokalbanken i Nordsjælland, which experienced financial difficulties. In October 2008 Svenska Handelsbanken acquired Lokalbanken i Nordsjælland.
22 September 2008			It was announced that Danmarks Nationalbank and a number of private banks provided liquidity support to Ebh Bank to enable it to continue its daily operations. At the same time the bank made arrangement with the lenders to commence sale of the subsidiary companies with the aim to prepare Ebh bank for merger or sale. On 13 November 2008, Ebh Bank issued a stock-exchange announcement stating that its solvency was considerably below the statutory minimum in the Danish Financial Business Act. On 21 November 2008, the activities of EBH Bank were transferred to the Financial Stability Company under Bank Package 1
29 September 2008			VestjyskBANK acquired Bonusbanken, whose equity capital was regarded as lost.
29 September 2008			VestjyskBANK merged with Ringkjøbing Bank, which experienced financial difficulties.
	3 October 2008		Amagerbanken experienced liquidity problems and obtained a short-term credit facility from Danmarks Nationalbank. Amagerbanken was the 9th largest banking institution in Denmark and in the years preceding the financial crisis it had experienced extremely strong lending growth, particularly for property financing. These exposures resulted in large write-downs. Amagerbanken made use of Bank Package 2 and obtained government capital injection in December 2009. In June 2010, Amagerbanken entered into an agreement with the Financial Stability Company on an individual government guarantee. According to the agreement, the bank had to increase of its capital base by 15 September 2010. The conditions stipulated by the Financial Stability Company were met by Amagerbanken. However, on 6 February 2011, Amagerbanken announced that it no longer met the statutory solvency requirements, and the management of the bank decided to let it be wound up by the Financial Stability under Bank Rescue Package 3. Amagerbanken was the first bank to be transferred to the Financial Stability Company under the winding-up scheme according to Bank Package 3. Most ordinary customers did not notice any change in the practical handling of their bank transactions since they were still able to use their credit cards, internet banking, etc. The share capital and subordinated liabilities in Amagerbanken are lost, and customers with deposits exceeding the guaranteed limit of 100,000 euro and other creditors could initially dispose of only 59 per cent of the excess amount.
30 October 2008			It was announced that Morsø Bank would take over the activities, excluding the guarantee capital, of Sparekassen Spar Mors, since the latter could not meet the statutory capital requirement due to substantial write-downs on loans and a high individual capital need.
23 February 2009			Fionia Bank announced that its actual solvency ratio was below the statutory requirement. The Danish Financial Supervisory Authority gave the bank a deadline by which the solvency requirement had to be met. In that connection, Fionia Bank entered into a framework agreement with the Financial Stability Company.
2 March 2009			The Financial Stability Company took over Løkken Sparekasse. Løkken Sparekasse could no longer meet the solvency requirement after a series of write-downs, mainly on large property exposures. After having sought in vain for a partner to merge with,

			all assets and liabilities (except the guarantee capital) of Løkken Sparekasse were transferred to the Financial Stability Company under Bank Package 1.
16 April 2009			Gudme Raaschou activities were transferred to the Financial Stability Company under Bank Package 1 after having sought in vain to strengthen its capital base for some time.
28 May 2009			All the assets and liabilities of Fionia Bank were transferred to the Financial Stability Company under Bank Package 1, with the exception of share capital and subordinated capital.
11 February 2010			Capinordic Bank's activities were transferred to the Financial Stability Company under Bank Package 1.
March 2010			Sparekassen Lolland and Finansbanken merged with Sparekassen Lolland as the continuing company.
September 2010			Max Bank and Skælskør Bank merged with Max Bank as the continuing company.
30 September 2010			Eik Bank Danmark's activities were transferred to the Financial Stability Company under Bank Package 1.
November 2010			Morsø Sparekasse and Morsø Bank merged and at the same time changed their name to Fjordbank Mors.
February 2011			Sparekassen Midtjylland and Sparekassen Himmerland merged with Sparekassen Himmerland as the continuing company.
16 February 2011			The international credit rating agency Moody's announced the downgrading of five Danish banks, while the rest of the Danish banking sector was put on the observation list with a view to potential future downgrading. The reasons given were that the general government guarantee to depositors and unsecured creditors of Danish banks has expired and that activation of Bank Rescue Package 3 in connection with the resolution of Amagerbanken has emphasised that large depositors and creditors may suffer losses when an insolvent Danish bank is wound up.
24 June 2011			The activities of Fjordbank Mors were transferred to the Financial Stability Company under Bank Package 3 after a failed attempt to find a market-based solution. The claims of unsecured, non-subordinate creditors were initially reduced by 26 per cent. Later the dividend was raised from 74 to 86 per cent.
8 October 2011			The sound parts of the activities of Max bank were transferred to Sparekassen Sjælland, while the unsound parts were transferred to the Financial Stability Company. By use of the dowry scheme in Bank Package 4, no depositors or other non-subordinate creditors suffered losses.
January 2012			Sparekassen Limfjorden and Sparekassen Vendsyssel merged with Sparekassen Vendsyssel as the continuing company.
March 2012			Sparekassen Farsø and Den Jyske Sparekasse merged with Den Jyske Sparekasse as the continuing company.
30 March 2012			Aarhus Lokalbank merged with Vestjysk Bank and exercised the option under Bank Package 4 to prolong the individual government guarantee. At the same time, Danmarks Nationalbank made a commitment to purchase DLR shares for DKK 175 million from Vestjysk Bank.
21 April 2012			The activities of Sparekassen Østjylland were transferred to Sparekassen Kronjylland to the government winding-up company, the Financial Stability Company, under Bank Package 4.
April 2012			Spar Salling Sparekasse failed and transferred its activities to Den Jyske Sparekasse with compensation from the Guarantee Fund for Depositors and Investors.
November 2012			Tønder Bank became distressed and transferred its activities to Sydbank.
25 January 2013			Sparekassen Lolland became distressed and transferred its activities to Jyske Bank.
22 October 2013			Vestjysk Bank converted part of the capital raised from the government under Bank Package 2 into equity and went into dialogue with the government as the controlling shareholder in order to investigate the possibilities of finding a long-term solution to its capitalisation challenges.
7 November 2013			Danske Andelskassers Bank announced that the bank no longer meet its individual capital need. The Danish Financial Supervisory Authority ordered the bank to prepare a recovery plan describing the intended actions of the bank to increase the actual solvency to a level above the individual capital need. In addition, the Danish Financial Supervisory Authority imposed restraints on the bank with regard to e.g. disbursement of dividend and interest on subordinated capital.

## Initiatives to dampen market volatility and support financial stability in the pension sector

Announcement date	Implementation date	Expiry date	Description
22 September 2008	24 September 2008 (auction date)		The Danish central government decided to increase the issuance of T-bills in order to address the bank's need for government securities as collateral in the US dollar market.
13 October 2008			A general ban on short selling stocks in Danish deposit banks was issued.
31 October 2008			During the financial crisis in 2008, the yield spread between mortgage and government bonds widened considerably. Due to the mortgage rate not being included in the discount curve used to discount the pension companies' provisions, the widening of the spread meant that the drop in the market value of the mortgage bond portfolio was not offset by an equivalent drop in the value of the commitments. This gave the pension funds an incentive to sell mortgage bonds. The Ministry of Economic and Business Affairs, the Danish Financial Supervisory Authority and the Danish Insurance Association decided to launch a number of initiatives to prevent pension and insurance companies from being compelled to sell Danish mortgage-credit bonds. In connection with the agreement, a temporary adjustment was made to the method for calculating the yield curve used to discount the pension companies' provisions. This reduced the current value of the life insurance companies' provisions of around 0.5 per cent. The agreement should originally expire at the end of 2009. On 27 October 2009, the agreement was extended by one year to the end of 2010.
15 October 2008			The European Commission approved the new accounting standards from the International Accounting Standards Board, IASB, which offered listed enterprises certain possibilities of reclassifying their assets and liabilities on the balance sheet with retrospective effect from July 2008. The possibilities concerned assets and liabilities included in trading portfolios, which normally had to be priced at fair value with recognition of value adjustments in the profit and loss account. However, as a result of the international financial crisis, it had become difficult to accurately determine the price of certain financial claims due to illiquid markets. Reclassification according to the new rules made it possible to prevent major unrealised capital losses from affecting the profit and/or equity capital of the enterprise. Some major Danish deposit banks chose to make immediately use of the new possibilities.
3 November 2008			It was announced that the Social Pension Fund (SPF) would invest around DKK 22 billion in short-term mortgage-credit bonds in the December 2008 auctions with a view to covering the central-government interest-rate risk related to the financing of subsidised housing. This was seen by the market as a signal from the central government of willingness to support the market for mortgage bonds in case of further turmoil.
5 December 2011			The European debt crisis led to a gradual narrowing of the Danish-German yield spread. Due to the considerable weight of the Danish interest rate in the discount curve, the value of the pension funds' commitments increased more than the value of the assets. This reduced the excess capital adequacy and provided the companies with an incentive to sell German and purchase Danish government bonds. This pushed down the Danish government bond yields even further and strengthened the krone rate. There was a risk of that development leading to self-reinforcing dynamics with negative implications for the companies' excess capital adequacy and the pension savers. The discount curve used to discount the pension companies' provisions was consequently adjusted. As a result, the spread between the Danish and German government yields was included as 12-month moving averages with a lower bound at zero. The lower bound at zero was to prevent a scenario where a narrowing of the Danish-German yield spread led to abnormal demand pressure on Danish bonds. The purpose of the moving averages was to dampen the effect of daily movements in the yield spread, because they were difficult to hedge.
12 June 2012 (press release from the Ministry of Business and Growth)			According to the agreement between the Ministry of Business and Growth and the Danish Insurance Association, the discount curve used to discount the pension companies' provisions for maturities of more than 20 years was raised to a higher level, aiming to be in line with more normal market terms at the long end of the yield curve and with the long-term targets for growth and inflation. The change in the yield curve was an important step towards the regulatory regime that will become effective with the coming EU rules concerning the insurance sector (Solvency II).

## INTERNATIONAL ECONOMIC EVENTS

### The international financial crisis

Announcement date	Implementation date	Expiry date	Description
2 April 2007			New Century Financial, subprime mortgage lender, filed for bankruptcy (Chapter 11).
22 June 2007			Bear Stearns announced that it had provided a facility of up to 3.2 billion dollars to the High-Grade Structured Credit Fund, while the High-Grade Structured Credit Enhanced Leverage Fund would be deleveraged in the marketplace without financial assistance from Bear Stearns.
30 July 2007			IKB Deutsche Industriebank, IKB, announced that it was hit by the subprime crisis. Rhineland Funding (conduit), with a credit facility with IKB, and to a lesser extent IKB itself, had invested in structured credit products related to US subprime mortgages. IKB's principal shareholder, KfW Banking Group, and three German bank funds had, together with the government to provide a rescue package in the days up to 30 July 2007. On 13 February 2008, IKB announced that the losses on its portfolio were of a magnitude that required yet another bailout operation.
9 August 2007			BNP Paribas suspends the calculation of mark-to-market for three money market funds that are subprime-exposed, and puts a stop to amortisations.
9 August 2007			The overnight money-market interest rate in the euro area rose to a level around 4.6 per cent during the day, i.e. considerably higher than the ECB's minimum bid rate of 4 per cent. The background to the increase was a greater restraint among banks in exchanging liquidity in the interbank money market due to the general uncertainty in the financial markets in the wake of the subprime crisis. The European Central Bank, ECB, provided liquidity to the euro money market via overnight loans against securities as collateral. Three more operations are carried out in the following days (10, 13 and 14 August).
10 August 2007			The Federal Reserve issued a press release stating that depository institutions could experience unusual funding needs, and against that background the Federal Reserve provided liquidity on a scale not seen since September 2001.
26 August 2007			Landesbank Baden-Württemberg announces that as of 1 January 2008 it will take over Sachsen LB, which had suffered large losses on subprime investments.
14 September 2007			The Bank of England announced that it was ready to provide liquidity support to Northern Rock. On 17 September 2007 the British government issued a guarantee for Northern Rock's existing deposits following an actual run on the bank. On 17 February 2008, the British government announced the temporary nationalisation of Northern Rock.
12 December 2007			Fed announced the establishments of dollar swap lines with a number of central banks, including the ECB.
11 January 2008			Bank of America announced its acquisition of Countrywide Financial, a major provider of mortgage financing.
14 March 2008			The Federal Reserve and JPMorgan Chase provided liquidity to Bear Stearns. On 16 March 2008, JPMorgan Chase announced that it would take over Bear Stearns.
11 July 2008			IndyMac Bank, with focus on mortgages, was taken over by the Federal Deposit Insurance Corporation (FDIC). IndyMac Bank was located in California. It had suffered substantial losses before the takeover and had also been subject to an actual run on the bank.
13 July 2008			The Federal Reserve provided a credit facility to the mortgage companies Fannie Mae and Freddie Mac. On 7 September 2008 the US Treasury announced that the newly established Federal Housing Finance Agency, FHFA, would take control of Fannie Mae and Freddie Mac.
15 September 2008			Lehman Brothers Holding filed for bankruptcy (Chapter 11).
15 September 2008			Bank of America announced its acquisition of Merrill Lynch.
16 September 2008			The Federal Reserve provided a 85 billion dollar credit facility to AIG, and in return, the US government acquired an ownership share of 79.9 per cent of AIG. The government was given the right of veto concerning disbursement of dividends to owners of com-

			mon and preference shares.
18 September 2008			Lloyds TSB announces its intention to acquire HBOS.
20 September 2008			The US Department of the Treasury announced a support package that included the government's purchase of "troubled assets" for up to 700 billion dollars. The plan was called TARP (Troubled Asset Relief Program), and was passed by the House of Representatives on 3 October 2008, following the rejection of a previous version of TARP on 29 September 2008.
21 September 2008			Goldman Sachs and Morgan Stanley relinquished their status as investment banks and became subject to the same regulatory requirements as ordinary commercial banks.
25 September 2008			The Office of Thrift Supervision under the US Department of the Treasury took control over Washington Mutual Bank, which was acquired by JPMorgan Chase on the same day.
26 September 2008			The Federal Reserve, the Bank of England, the European Central Bank (ECB), and the Swiss National Bank announced the introduction of operations to provide US dollar liquidity with a one-week maturity based on their reciprocal swap lines.
29 September 2008			Fortis announced that the governments of Belgium, Luxembourg and the Netherlands would invest 11.2 billion euro in Fortis in their respective countries. This brought the governments' ownership share to 49 per cent. In addition, Fortis was required to sell its share of ABN Amro.
29 September 2008			The Icelandic central bank, Seðlabanki Íslands, announced that the government would, through the central bank, contribute equity capital equivalent to 600 million euro to Glitnir, bringing the government's ownership share in Glitnir to 75 per cent. On 7 October 2008, the Icelandic financial supervisory authority announced that it had taken over control of Glitnir and Landsbanki. On 9 October 2008 the Icelandic financial supervisory authority announced that it had also taken over control of Kaupthing. On 24 October 2008, IMF staff and the Icelandic authorities reached agreement on an IMF loan. The agreement was based on an economic-policy programme aimed at restoring confidence to the banking system, stabilising the Icelandic krona and achieving fiscal consolidation.
29 September 2008			Hypo Real Estate announced that a consortium from the German financial sector had extended short-term and medium-term credit facilities to it. However, the private banks reneged on the agreement a few days later. On 6 October 2008, Hypo Real Estate announced that a new agreement had been concluded whereby the German government and the financial sector together offered a credit facility of 50 billion euro. The government provided a guarantee of 35 billion euro.
29 September 2008			The Federal Deposit Insurance Corporation, FDIC, announced that Citigroup would take over the bank activities of Wachovia in an FDIC-supported transaction. The transaction was, however, never realised.
30 September 2008			Dexia announced that it had received 6.4 billion euro from the governments of Belgium, France and Luxembourg and its current shareholders.
30 September 2008			The Irish government announced an unlimited deposit guarantee, including banks' debt, covered bonds, senior debt and dated subordinated debt. It was estimated that the banks covered by the guarantee would have to pay 1 billion euro in total over two years.
3 October 2008			Wells Fargo and Wachovia announced their merger without any financial support from public authorities.
6 October 2008			BNP Paribas announced that it had concluded an agreement on the acquisition of the Belgian, Luxembourgian and international parts of Fortis.
8 October 2008			The UK presented a rescue package for the financial sector, which included an amount of 50 billion pounds sterling for recapitalisation of distressed banks and 250 billion pounds for guarantee of the banks' future short-term and medium-term borrowing (excluding subordinated debt).
8 October 2008			The European Central Bank (ECB), the Federal Reserve, the Bank of England, Sveriges Riksbank, the Bank of Canada and the Swiss National Bank cut their key policy rates by 0.5 per cent in the first coordinated action ever.
12 October 2008			The euro area member states launched a set of common bank rescue principles including e.g. the possibility of recapitalisation of banks and a temporary government guarantee of future issuance of senior bank debt with a maturity of up to 5 years. More countries followed suit and launched rescue packages, and the 27 EU

			member states endorsed the principles at a summit on 15 October 2008.
14 October 2008			The US Department of the Treasury stated that nine major US banks had sold senior preference shares to the government – on a voluntary basis and in order to strengthen the capital base. This included just over 125 billion dollars of TARP funds, while 21 financial institutions would sell preference shares for just over 30 billion dollars in November.
19 October 2008			ING announced that it would receive 10 billion euro from the Dutch government to strengthen its Tier 1 capital.
10 November 2008			The Swedish government took over the investment bank Carnegie.
15 November 2008			The G20 countries agreed on five basic principles for addressing the financial crisis: Strengthening transparency and accountability; Enhancing good regulation; Promoting integrity in financial markets; Reinforcing international cooperation; Reforming international financial institutions.
23 November 2008			In a joint statement from the US Department of the Treasury, the FDIC and the Federal Reserve, the authorities provided a guarantee of 306 billion dollars to Citigroup concerning a portfolio of lending, etc. Citigroup assumes all losses up to 29 billion dollars and 10 per cent of losses exceeding this limit. The government also provided a further 20 billion dollars of TARP funds.
25 November 2008			The Federal Reserve announced the purchase of mortgage-credit bonds and MBS (mortgage-backed securities) for up to 600 billion dollars. In addition, the Federal Reserve launched a new facility called TALF (Term Asset-Backed Securities Loan Facility) to support loans to small business enterprises, student loans, car loans and credit card loans. The facility amounted to up to 200 billion dollars.
19 December 2008			The US Department of the Treasury grants loans for up to 13.4 billion dollars to General Motors Corp. and 4 billion dollars to Chrysler under the TARP.
21 December 2008			The Irish government announces that it will recapitalise Anglo Irish Bank, Allied Irish Banks and Bank of Ireland. On 15 January 2009, the Irish government announced that it would nationalise Anglo Irish Bank, thereby abandoning the recapitalisation plans announced on 21 December 2008.
16 January 2009			The US Department of the Treasury and FDIC announce a loss-sharing agreement with Bank of America for a portfolio comprising loans, securities, etc. for a total of 118 billion dollars in return for preference shares in the bank. Moreover, if required, the Federal Reserve will provide a "back-stop" loan to cover the remaining risk on the portfolio. This loan is a "non-recourse loan", meaning that in the event of bankruptcy or other default, the Fed's recovery is limited to the assets pledged as collateral for the loan. Finally, the Department of the Treasury will invest 20 billion dollars in TARP funds in the bank.
17 February 2009			The US President signs a 787 billion dollar stimulus package comprising tax cuts and increased government spending.
25 February 2009			The US authorities announce that US banks with assets of at least 100 billion dollars must pass a mandatory stress test by the end of April 2009. Banks that fail the test must, within the following six months, either procure the necessary private capital or accept government capital in the form of convertible preference shares.
26 February 2009			The Royal Bank of Scotland announces plans to participate in the British government's "Asset Protection Scheme" with assets of 325 billion pounds. In addition, Her Majesty's Treasury will purchase 13 billion pounds' worth of 'B' shares, to be included in the Tier 1 capital, and another 6 billion pounds' worth if the RBS so wishes.
27 February 2009			The US Department of the Treasury announces that it is willing to convert up to 25 billion dollars in Citigroup preference shares into common shares if private investors are willing to do the same.
2 March 2009			AIG announces a loss of 61.7 billion dollars in the 4th quarter of 2008. The US Department of the Treasury and the Federal Reserve announce a restructuring of the government's assistance to AIG, which will receive up to 30 billion dollars in additional TARP funds. Moreover, the Department of the Treasury will exchange its existing position of 40 billion dollars in AIG preference shares for new preference shares that more closely resemble common shares.
7 March 2009			Lloyds Banking Group announces that it will apply for insurance of assets for 260 billion pounds under the British government's "Asset Protection Scheme". At the same time, Lloyds accepts that the government can convert preference shares into common shares. The result of this agreement could be that the government controls up to 75 per cent of the voting rights in Lloyds.

2 April 2009			At the G20 summit, the participants agreed on a number of initiatives to strengthen the financial system, including that the quality and quantity of the banks' capital should be improved and that capital buffers should be built up in good times. The G20 countries also agreed that financial reporting rules, especially for valuation and provisions, should be strengthened. Moreover, it was decided to provide substantial funds to the IMF so that it can continue its lending programmes. Finally, it was decided to allocate at least 250 billion dollars over the next two years to ensure access to trade credits.
7 May 2009			The US Department of the Treasury published stress-test results for the 19 largest US banks. The stress test aimed at assessing whether the banks' capital buffers were sufficient. 10 of the 19 banks were in need of a total of almost 75 billion dollars in extra capital. The three banks with the most urgent capital requirement – Bank of America, Wells Fargo and General Motors Acceptance Corp, GMAC – accounted for almost 80 per cent of the total. The banks found to be in need of further capital had to present a plan for procurement of such capital by 8 June 2009, and the plan had to be implemented by 9 November 2009.
23 July 2010			Publication of EBA stress test of European banks. A total of 91 European banks from 20 member states participated. Only seven banks were unable to observe the threshold for Tier 1 capital of 6 per cent of risk-weighted assets, even if the economy deteriorated substantially. None of the three Danish banks that participated in the pan-European stress test – Danske Bank, Jyske Bank and Sydbank – needed further capital injections during the period covered by the stress test under the adverse economic scenario.
3 November 2010			The US Federal Reserve announced further quantitative easing of monetary policy by purchasing Treasury bonds for 600 billion dollars in the period until June 2011
15 July 2011			Publication of EBA stress test comprising 90 banks in 21 EU member states. Four Danish credit institutions participated: Danske Bank, Jyske Bank, Nykredit and Sydbank, all of which showed considerable resilience.
26 October 2011			The EU heads of state or government agreed on a number of issues to ensure recapitalisation of the European banks. By July 2012, the largest banks in the EU member states were to have Common Equity Tier 1 capital ratio of 9 per cent.
14 May 2012			Announcement that Spanish banks have to be assessed by two independent consulting agencies
25 May 2012			Nationalisation of Bankia in Spain
9 June 2012			The euro area member states made a commitment to lend Spain up to 100 billion euro (9 per cent of GDP) via the EFSF for recapitalisation of Spanish banks.
27 June 2012			The UK Financial Services Authority, FSA, announced that it had fined Barclays Bank 59.5 million pounds for manipulation in connection with its reporting for the London Interbank Offered Rate, Libor, and the Euro Interbank Offered Rate, Euribor.
29 June 2012			The euro area heads of state or government decided to broaden the mandate of the European Stability Mechanism, ESM. The ESM would be empowered to provide direct recapitalisation for euro area banks once a single supervisory mechanism (SSM) involving the ECB had been established.
29 June 2012			The European Council agreed on creating European banking supervisory mechanism. On 13 December 2012, the Ecofin Council agreed on the first step towards a banking union with a single supervisory mechanism anchored in the ECB. The ECB will take over direct supervision of all credit institutions not defined as "less significant". This supervision will comprise all credit institutions in the euro area and in the non-euro area member states opting in. Other steps towards the banking union were to include harmonisation of national frameworks for the recovery and resolution of credit institutions and for deposit guarantees. On 15 October 2013, the EU ministers for economic and financial affairs, the Ecofin Council, adopted the final structure of the Single Supervisory Mechanism, SSM, for the forthcoming European banking union. On 4 November 2014, the ECB took over responsibility for supervision of the largest euro area credit institutions as part of the establishment of the banking union

## Measures taken by the European Central Bank

Announcement date	Implementation date	Expiry date	Description
23 January 2003	9 March 2004		ECB announced that the maturity of its weekly main refinancing operations would be reduced to seven days in the 1st quarter of 2004. At the same time, the calendar of reserve maintenance periods would be amended, so that a reserve maintenance period will always commence on the settlement date of the first main refinancing operation after the Governing Council's monthly monetary-policy meeting. The purpose of this change is to prevent market participants from forming expectations of interest-rate adjustments during a reserve maintenance period.
22 August 2007			ECB announced the first longer-term refinancing operations, LTROs, offering 3-month loans.
28 Mar 2008	2 April 2008		The ECB announced the introduction of six-month longer-term refinancing operations to support the normalisation of the functioning of the euro money market.
29 September 2008			ECB introduced the first Special Term Refinancing Operation with maturities equivalent to the length of the reserve maintenance period.
8 October 2008	15 October 2008		ECB announced that it would no longer manage the volume of loans at the weekly main refinancing operations, MROs, but switch to a framework based on full allotment of the bids received at a fixed allotment rate.
15 October 2008			The ECB's collateral basis was expanded.
15 October 2008			LTROs and Special Term Refinancing Operations with full allotment of loans at a fixed interest rate were announced.
7 May 2009	23 June 2009 (first offering)		It was announced that the ECB's long-term operations would be supplemented with fixed-rate refinancing operations with a maturity of one year and full allotment.
7 May 2009		30 June 2010	ECB announced that it would begin to purchase covered bonds denominated in euro and issued in the euro area (the Covered Bond Purchase Programme, CBPP)
10 May 2010			ECB announced its Securities Market Programme, SMP, which allowed the ECB to purchase government and private bonds issued in the euro area to address the malfunctioning of securities markets and restore an appropriate monetary-policy transmission mechanism.
15 September 2011			ECB announced that collateralised 3-month dollar liquidity-providing operations would be conducted in October, November and December 2011.
6 October 2011			The ECB announced the launch of a new covered bond purchase programme (CBPP2).
8 December 2011	21 December 2011 (first offering)	29 February 2012 (last offering)	ECB announced the offering of 3-year loans.
6 September 2012			ECB published the conditionalities for the Outright Monetary Transactions (OMT) programme regarding purchase of government securities from euro area member states in the secondary market in order to ensure the transmission of monetary-policy interest rates to the real economy throughout the euro area. Purchases under the OMT programme had to be in full compliance with the EFSF/ESM programme conditionalities.
5 June 2014	11 June 2014		The ECB announced a reduction of its monetary policy interest rates. The interest rate on the deposit facility was -0.10 per cent. This was the first time one of the ECB's interest rates turned negative.
5 June 2014	18 September 2014 (first TLTRO)		ECB announced a number of measures to enhance the functioning of the monetary policy transmission mechanism by supporting lending to households and non-financial corporations. From September 2014 until and including June 2016, the ECB would on a quarterly basis offer long-term loans with fixed interest rates to its monetary policy counterparties in the form of targeted longer-term refinancing operations, TLTROs. All TLTROs would mature in September 2018, giving them a maturity of up to 4 years. The rate of interest on these refinancing operations would be fixed at the rate on the main refinancing operations at the time of take-up plus a fixed spread of 0.10 percentage point. The amount that each counterparty may borrow in these operations would be determined on the basis of the counterparty's lending to non-financial corporations and households in the euro area, excluding loans for house purchases. To further support liquidity among euro area banks, the ECB would suspend the weekly fine-tuning operation sterilising the

			liquidity injected under the Securities Markets Programme, SMP, in the period from May 2010 to September 2012. In addition, the minimum period for full allotment at a fixed interest rate in the weekly main refinancing operations and the 3-month longer-term refinancing operations was extended by 18 months, until December 2016. This practice would continue for as long as necessary. The ECB also announced that preparatory work related to its outright purchases of asset-backed securities would be intensified
4 September 2014			ECB announced two new purchase programmes to support lending to the private sector. The first programme was aimed at purchasing asset-backed securities, ABSs, for which the underlying assets are issued by the non-financial private sector. Under the second programme, the ECB would purchase covered bonds issued by financial enterprises.
22 January 2015	March 2015		ECB announced an expansion of its existing asset purchase programme with significant purchases of government bonds. From March 2015 the ECB would purchase government bonds and other securities for a total of 60 billion euro per month until September 2016.
22 January 2015			The ECB announced that interest rate conditions would be eased for the remaining six auctions in connection with targeted long-term refinancing operations, TLTROs. The fixed rate of interest on TLTRO loans would now simply be the ECB's main refinancing rate, whereas previously a fixed spread of 0.1 percentage point applied.

### The European government debt crisis

Announcement date	Implementation date	Expiry date	Description
25 Mar 2010			The heads of state and government of the euro area – and the IMF – announced their willingness to offer financial support to Greece if the country should ask for it. On 23 April 2010, Greece applied to the euro area member states and the IMF for assistance within the framework of an agreed economic stabilisation programme. On 2 May 2010, Greece reached an agreement with the IMF and the euro area member states on a financial assistance package. On 9 May 2010, the Executive Board of the IMF approves the first assistance package for Greece.
9 May 2010			At the extraordinary Ecofin meeting on 9 May, the EU ministers of finance announced a support package for distressed euro area member states. The package established a European Financial Stabilisation Mechanism (EFSM) – available to all EU member states in connection with an EU/IMF programme – with a total lending and credit volume of up to 60 billion euro guaranteed via the EU budget. The Council also agreed on a European Financial Stability Facility (EFSF) with a capacity to offer further loans of up to 440 billion euro on the basis of government guarantees from the euro area member states, should the need arise.
28 October 2010			The European Council of heads of state or government decided to establish a permanent European Stability Mechanism, ESM. The mechanism included the option of orderly restructuring of sovereign debt with the involvement of the private sector. ESM entered into force on 8 October 2012 covered by guarantees as well as subscribed capital from euro area member states.
21 November 2010			The EU finance ministers announced an imminent EU/IMF financial assistance programme for Ireland. The programme was to contribute to stabilising the ailing Irish banking sector, and also to financing the large Irish government budget deficit until fiscal consolidation had been achieved.
6 April 2011			Portugal applied for financial support. On 5 May 2011, there was agreement on financial assistance to Portugal. On 17 May 2011, The EU officially approved financial assistance to Portugal. On 20 May 2011, Portugal obtained approval from the IMF's Executive Board for a joint programme with assistance from the IMF and the EU totalling 78 billion euro.
21 July 2011			At the extraordinary summit meeting, the euro area heads of state or government decided to broaden the mandates of the EFSF and the ESM to finance recapitalisation of financial institutions through loans to member states – also member states that are not under any programme – and to intervene in the secondary sovereign debt markets if the member states in the EFSF/ESM

			agree on this and if an ECB analysis finds that exceptional financial market circumstances apply and there is risk to financial stability.
21 July 2011			At an extraordinary summit meeting, the euro area heads of state or government announced a new financial assistance package for Greece. On 21 Feb 2012, the Eurogroup approved the second financial aid package for Greece. On 15 March 2012, the Executive Board of the IMF approved the new financial assistance package for Greece
27 June 2012			Cyprus asked the Commission, the ECB and the IMF for financial assistance. The request was primarily driven by the banking sector's exposure to Greece and macroeconomic imbalances. On 2 April 2013, agreement was reached on a financial assistance programme for 2013-16 with a view to bringing the Cypriot economy back on track. The agreement entails financial support of up to 10 billion euro, including 1 billion euro from the IMF.
26 July 2012			President of the ECB, Mario Draghi, stated in a speech that "Within our mandate, the ECB is ready to do whatever it takes to preserve the euro".

### Other international events

Announcement date	Implementation date	Expiry date	Description
6 September 2011			Schweizerische Nationalbank, SNB, therefore introduced a minimum exchange rate of 1.20 francs per euro
15 January 2015			Schweizerische Nationalbank, SNB, abandoned the minimum exchange rate of the Swiss franc vis-à-vis the euro.

#### Note:

The calendars of events are not necessarily exhaustive.

#### Sources:

Various publications, press releases etc. from Danmarks Nationalbank and the website of the European Central Bank.

## ANNEX B: LIST OF INDIVIDUAL CURRENT-ACCOUNT LIMITS, 2003-2015(31 MARCH)

Name (at the end date)	Current-account limit (kr. million)	Start date (DD-MM-YYYY)	End date (DD-MM-YYYY)
NORDEA BANK DANMARK	2,750	02-01-2003	01-01-2006
NORDEA BANK DANMARK	4,000	02-01-2006	05-07-2012
NORDEA BANK DANMARK	16,000	06-07-2012	04-10-2012
NORDEA BANK DANMARK	24,000	05-10-2012	06-06-2013
NORDEA BANK DANMARK	16,000	07-06-2013	24-04-2014
NORDEA BANK DANMARK	5,250	25-04-2014	19-03-2015
NORDEA BANK DANMARK	36,750	20-03-2015	-
DANSKE BANK	3,500	02-01-2003	01-01-2006
DANSKE BANK	4,000	02-01-2006	05-07-2012
DANSKE BANK	16,000	06-07-2012	04-10-2012
DANSKE BANK	24,000	05-10-2012	06-06-2013
DANSKE BANK	16,000	07-06-2013	24-04-2014
DANSKE BANK	5,250	25-04-2014	19-03-2015
DANSKE BANK	36,750	20-03-2015	22-03-2015
DANSKE BANK	48,100	23-03-2015	-
BRF KREDIT BANK	100	02-01-2003	05-07-2012
BRF KREDIT BANK	200	06-07-2012	04-10-2012
BRF KREDIT BANK	300	05-10-2012	06-06-2013
BRF KREDIT BANK	200	07-06-2013	24-04-2014
BRF KREDIT BANK	250	25-04-2014	22-03-2015
BRF KREDIT BANK	300	23-03-2015	-
AMAGERBANKEN AF 2011	200	02-01-2003	05-07-2012
AMAGERBANKEN AF 2011	400	06-07-2012	04-10-2012
AMAGERBANKEN AF 2011	600	05-10-2012	08-03-2013
ARBEJDERNES LANDSBANK	200	02-01-2003	05-07-2012
ARBEJDERNES LANDSBANK	400	06-07-2012	04-10-2012
ARBEJDERNES LANDSBANK	600	05-10-2012	06-06-2013
ARBEJDERNES LANDSBANK	400	07-06-2013	24-04-2014
ARBEJDERNES LANDSBANK	250	25-04-2014	22-03-2015
ARBEJDERNES LANDSBANK	1,600	23-03-2015	-
SKANDINAVISKA ENSKILDA BANKEN AB	300	02-01-2003	01-01-2006
SKANDINAVISKA ENSKILDA BANKEN AB	450	02-01-2006	05-07-2012
SKANDINAVISKA ENSKILDA BANKEN AB	1,800	06-07-2012	04-10-2012
SKANDINAVISKA ENSKILDA BANKEN AB	2,700	05-10-2012	06-06-2013
SKANDINAVISKA ENSKILDA BANKEN AB	1,800	07-06-2013	24-04-2014
SKANDINAVISKA ENSKILDA BANKEN AB	1,250	25-04-2014	19-03-2015
SKANDINAVISKA ENSKILDA BANKEN AB	8,750	20-03-2015	-
BASISBANK	50	02-01-2003	01-01-2006
BASISBANK	100	02-01-2006	05-07-2012
BASISBANK	200	06-07-2012	04-10-2012
BASISBANK	300	05-10-2012	06-06-2013
BASISBANK	200	07-06-2013	24-04-2014
BASISBANK	250	25-04-2014	-
COOP BANK	200	07-06-2013	24-04-2014
COOP BANK	250	25-04-2014	-
FORSTÆDERNES BANK	150	02-01-2003	18-05-2010
LOKALBANKEN I NORDSJÆLLAND	75	02-01-2003	01-01-2006
LOKALBANKEN I NORDSJÆLLAND	100	02-01-2006	19-10-2009
MAX BANK	75	02-01-2003	01-01-2006
MAX BANK AF 2011	100	02-01-2006	05-07-2012
MAX BANK AF 2011	200	06-07-2012	04-10-2012
MAX BANK AF 2011	300	05-10-2012	02-11-2012
DIBA BANK	100	02-01-2003	05-07-2012
DIBA BANK	200	06-07-2012	04-10-2012
DIBA BANK	300	05-10-2012	06-06-2013
DIBA BANK	200	07-06-2013	24-04-2014

DIBA BANK	250	25-04-2014	12-09-2014
RØSKILDE BANK	150	02-01-2003	14-06-2011
SKÆLSKØR BANK	75	02-01-2003	01-01-2006
SKÆLSKØR BANK	100	02-01-2006	07-04-2011
FS BANK	300	11-12-2009	05-07-2012
FS BANK	600	06-07-2012	04-10-2012
FS BANK	900	05-10-2012	06-06-2013
FS BANK	600	07-06-2013	24-04-2014
FS BANK	250	25-04-2014	09-06-2014
VORDINGBORG BANK	75	02-01-2003	01-01-2006
VORDINGBORG BANK	100	02-01-2006	05-07-2012
VORDINGBORG BANK	200	06-07-2012	04-10-2012
VORDINGBORG BANK	300	05-10-2012	06-06-2013
VORDINGBORG BANK	200	07-06-2013	24-04-2014
VORDINGBORG BANK	250	25-04-2014	09-05-2014
LOLLANDS BANK	75	02-01-2003	01-01-2006
LOLLANDS BANK	100	02-01-2006	05-07-2012
LOLLANDS BANK	200	06-07-2012	04-10-2012
LOLLANDS BANK	300	05-10-2012	06-06-2013
LOLLANDS BANK	200	07-06-2013	24-04-2014
LOLLANDS BANK	250	25-04-2014	-
MØNS BANK	75	02-01-2003	01-01-2006
MØNS BANK	100	02-01-2006	05-07-2012
MØNS BANK	200	06-07-2012	04-10-2012
MØNS BANK	300	05-10-2012	06-06-2013
MØNS BANK	200	07-06-2013	24-04-2014
MØNS BANK	250	25-04-2014	-
CITIBANK INTERNATIONAL PLC	50	02-01-2003	01-01-2006
CITIBANK	100	02-01-2006	05-07-2012
CITIBANK	200	06-07-2012	04-10-2012
CITIBANK	300	05-10-2012	06-06-2013
CITIBANK	200	07-06-2013	24-04-2014
CITIBANK	250	25-04-2014	-
LANDESBANK SCHLESWIG_HOLSTEIN	600	02-01-2003	17-08-2003
FINANSBANKEN	75	02-01-2003	01-01-2006
HSH NORDBANK AG	600	18-08-2003	21-10-2011
ALM. BRAND BANK	150	02-01-2003	05-07-2012
ALM. BRAND BANK	300	06-07-2012	04-10-2012
ALM. BRAND BANK	450	05-10-2012	06-06-2013
ALM. BRAND BANK	300	07-06-2013	24-04-2014
ALM. BRAND BANK	250	25-04-2014	22-03-2015
ALM. BRAND BANK	650	23-03-2015	-
ROYAL BANK OF SCOTLAND	700	02-01-2003	05-07-2012
ROYAL BANK OF SCOTLAND	1,400	06-07-2012	04-10-2012
ROYAL BANK OF SCOTLAND	2,100	05-10-2012	06-06-2013
ROYAL BANK OF SCOTLAND	1,400	07-06-2013	24-04-2014
ROYAL BANK OF SCOTLAND	250	25-04-2014	-
SKANDINAVISKA ENSKILDA BANKEN A/S	150	02-01-2003	08-06-2012
GUDME RAASCHOU BANKAKTIESELSKAB	30	02-01-2003	17-08-2003
HSH GUDME BANK	100	02-01-2006	02-07-2009
HSH GUDME BANK	30	18-08-2003	01-01-2006
NYKREDIT BANK	800	02-01-2003	05-07-2012
NYKREDIT BANK	3,200	06-07-2012	04-10-2012
NYKREDIT BANK	4,800	05-10-2012	06-06-2013
NYKREDIT BANK	3,200	07-06-2013	24-04-2014
NYKREDIT BANK	1,250	25-04-2014	19-03-2015
NYKREDIT BANK	8,750	20-03-2015	-
ALFRED BERG BANK	75	02-01-2003	01-01-2006
HANDELSBANKEN	400	02-01-2003	05-07-2012
HANDELSBANKEN	1,600	06-07-2012	04-10-2012
HANDELSBANKEN	2,400	05-10-2012	06-06-2013
HANDELSBANKEN	1,600	07-06-2013	24-04-2014
HANDELSBANKEN	1,250	25-04-2014	19-03-2015
HANDELSBANKEN	8,750	20-03-2015	-

PEN-SAM BANK	75	02-01-2003	01-01-2006
PEN-SAM BANK	100	02-01-2006	05-07-2012
PEN-SAM BANK	200	06-07-2012	04-10-2012
PEN-SAM BANK	300	05-10-2012	06-06-2013
PEN-SAM BANK	200	07-06-2013	24-04-2014
PEN-SAM BANK	250	25-04-2014	-
VESTFYNS BANK	75	02-01-2003	01-01-2006
VESTFYNS BANK	100	02-01-2006	05-07-2012
VESTFYNS BANK	200	06-07-2012	04-10-2012
VESTFYNS BANK	300	05-10-2012	06-06-2013
VESTFYNS BANK	200	07-06-2013	24-04-2014
VESTFYNS BANK	250	25-04-2014	22-03-2015
FYNSKE BANK	250	23-03-2015	-
NORDFYNS BANK	75	02-01-2003	01-01-2006
NORDFYNS BANK	100	02-01-2006	05-07-2012
NORDFYNS BANK	200	06-07-2012	04-10-2012
NORDFYNS BANK	300	05-10-2012	06-06-2013
NORDFYNS BANK	200	07-06-2013	24-04-2014
NORDFYNS BANK	250	25-04-2014	-
SKJERN BANK	75	02-01-2003	01-01-2006
SKJERN BANK	100	02-01-2006	05-07-2012
SKJERN BANK	200	06-07-2012	04-10-2012
SKJERN BANK	300	05-10-2012	06-06-2013
SKJERN BANK	200	07-06-2013	24-04-2014
SKJERN BANK	250	25-04-2014	-
SPAREKASSEN FOR NØRRE NEBEL OG OMEGN	100	14-02-2011	05-07-2012
SPAREKASSEN FOR NØRRE NEBEL OG OMEGN	200	06-07-2012	04-10-2012
SPAREKASSEN FOR NØRRE NEBEL OG OMEGN	300	05-10-2012	06-06-2013
SPAREKASSEN FOR NØRRE NEBEL OG OMEGN	200	07-06-2013	24-04-2014
SPAREKASSEN FOR NØRRE NEBEL OG OMEGN	250	25-04-2014	-
TØNDER BANK	75	02-01-2003	01-01-2006
TØNDER BANK	100	02-01-2006	05-07-2012
TØNDER BANK	200	06-07-2012	04-10-2012
TØNDER BANK	300	05-10-2012	06-06-2013
TØNDER BANK	200	07-06-2013	21-06-2013
SYDBANK	700	02-01-2003	05-07-2012
SYDBANK	2,800	06-07-2012	04-10-2012
SYDBANK	4,200	05-10-2012	06-06-2013
SYDBANK	2,800	07-06-2013	24-04-2014
SYDBANK	1,250	25-04-2014	19-03-2015
SYDBANK	8,750	20-03-2015	-
KREDITBANKEN	75	02-01-2003	01-01-2006
KREDITBANKEN	100	02-01-2006	05-07-2012
KREDITBANKEN	200	06-07-2012	04-10-2012
KREDITBANKEN	300	05-10-2012	06-06-2013
KREDITBANKEN	200	07-06-2013	24-04-2014
KREDITBANKEN	250	25-04-2014	-
TOTALBANKEN, AARUP	75	02-01-2003	01-01-2006
TOTALBANKEN, AARUP	100	02-01-2006	05-07-2012
TOTALBANKEN, AARUP	200	06-07-2012	04-10-2012
TOTALBANKEN, AARUP	300	05-10-2012	06-06-2013
TOTALBANKEN, AARUP	200	07-06-2013	24-04-2014
TOTALBANKEN, AARUP	250	25-04-2014	-
FÖRENINGSSPARBANKEN	15	26-04-2005	01-01-2006
SWEDBANK	100	02-01-2006	05-07-2012
SWEDBANK	200	06-07-2012	04-10-2012
SWEDBANK	300	05-10-2012	06-06-2013
SWEDBANK	200	07-06-2013	24-04-2014
SWEDBANK	250	25-04-2014	-
NORTHERN ROCK	100	02-01-2007	25-06-2008
DEN NORSKE BANK	25	02-01-2003	01-01-2006
DNB NOR BANK	100	02-01-2006	05-07-2012
DNB NOR BANK	200	06-07-2012	04-10-2012
DNB NOR BANK	300	05-10-2012	06-06-2013

DNB NOR BANK	200	07-06-2013	24-04-2014
DNB NOR BANK	250	25-04-2014	22-03-2015
DNB NOR BANK	1,750	23-03-2015	-
SKANDIABANKEN	75	02-01-2003	01-01-2006
SKANDIABANKEN	100	02-01-2006	09-12-2007
EIK BANK Danmark A/S	100	10-12-2007	15-09-2011
FORTIS BANK	100	21-08-2006	05-07-2012
FORTIS BANK	200	06-07-2012	04-10-2012
FORTIS BANK	300	05-10-2012	06-06-2013
FORTIS BANK	200	07-06-2013	24-04-2014
FORTIS BANK	250	25-04-2014	-
NORDJYSKE BANK	150	02-01-2003	05-07-2012
NORDJYSKE BANK	300	06-07-2012	04-10-2012
NORDJYSKE BANK	450	05-10-2012	06-06-2013
NORDJYSKE BANK	300	07-06-2013	24-04-2014
NORDJYSKE BANK	250	25-04-2014	22-03-2015
NORDJYSKE BANK	400	23-03-2015	-
DJURSLANDS BANK	75	02-01-2003	01-01-2006
DJURSLANDS BANK	100	02-01-2006	05-07-2012
DJURSLANDS BANK	200	06-07-2012	04-10-2012
DJURSLANDS BANK	300	05-10-2012	06-06-2013
DJURSLANDS BANK	200	07-06-2013	24-04-2014
DJURSLANDS BANK	250	25-04-2014	22-03-2015
DJURSLANDS BANK	300	23-03-2015	-
HADSTEN BANK	75	02-01-2003	01-01-2006
AARHUS LOKALBANK	100	02-01-2006	05-07-2012
AARHUS LOKALBANK	200	06-07-2012	04-10-2012
AARHUS LOKALBANK	300	05-10-2012	19-11-2012
DANSKE ANDELSKASSERS BANK	100	02-01-2003	05-07-2012
DANSKE ANDELSKASSERS BANK	200	06-07-2012	04-10-2012
DANSKE ANDELSKASSERS BANK	300	05-10-2012	06-06-2013
DANSKE ANDELSKASSERS BANK	200	07-06-2013	24-04-2014
DANSKE ANDELSKASSERS BANK	250	25-04-2014	22-03-2015
DANSKE ANDELSKASSERS BANK	450	23-03-2015	-
BONUSBANKEN	75	02-01-2003	01-01-2006
BONUSBANKEN	100	02-01-2006	10-12-2008
SØBY-SKADER-HALLING SPAREKASSE	200	25-11-2013	24-04-2014
SØBY-SKADER-HALLING SPAREKASSE	250	25-04-2014	-
HVIDBJERG BANK	50	02-01-2003	01-01-2006
HVIDBJERG BANK	100	02-01-2006	05-07-2012
HVIDBJERG BANK	200	06-07-2012	04-10-2012
HVIDBJERG BANK	300	05-10-2012	06-06-2013
HVIDBJERG BANK	200	07-06-2013	24-04-2014
HVIDBJERG BANK	250	25-04-2014	-
NORDVESTBANK	100	02-01-2003	18-02-2003
VESTJYSK BANK	100	02-01-2003	18-02-2003
VESTJYSK BANK	125	19-02-2003	05-07-2012
VESTJYSK BANK	250	06-07-2012	04-10-2012
VESTJYSK BANK	375	05-10-2012	06-06-2013
VESTJYSK BANK	250	07-06-2013	22-03-2015
VESTJYSK BANK	950	23-03-2015	-
ØSTJYDSK BANK	75	02-01-2003	01-01-2006
ØSTJYDSK BANK	100	02-01-2006	05-07-2012
ØSTJYDSK BANK	200	06-07-2012	04-10-2012
ØSTJYDSK BANK	300	05-10-2012	06-06-2013
ØSTJYDSK BANK	200	07-06-2013	24-04-2014
ØSTJYDSK BANK	250	25-04-2014	-
MORSØ BANK	75	02-01-2003	01-01-2006
MORSØ BANK	100	02-01-2006	05-07-2012
MORSØ BANK	200	06-07-2012	04-10-2012
MORSØ BANK	300	05-10-2012	06-06-2013
MORSØ BANK	200	07-06-2013	18-11-2013
NØRRRESUNDBY BANK	100	02-01-2003	05-07-2012
NØRRRESUNDBY BANK	200	06-07-2012	04-10-2012

NØRRESUNDBY BANK	300	05-10-2012	06-06-2013
NØRRESUNDBY BANK	200	07-06-2013	24-04-2014
NØRRESUNDBY BANK	250	25-04-2014	22-03-2015
NØRRESUNDBY BANK	400	23-03-2015	-
RINGKJØBING BANK	100	02-01-2003	17-09-2009
RINGKJØBING LANDBOBANK	150	02-01-2003	05-07-2012
RINGKJØBING LANDBOBANK	300	06-07-2012	04-10-2012
RINGKJØBING LANDBOBANK	450	05-10-2012	06-06-2013
RINGKJØBING LANDBOBANK	300	07-06-2013	24-04-2014
RINGKJØBING LANDBOBANK	250	25-04-2014	22-03-2015
RINGKJØBING LANDBOBANK	850	23-03-2015	-
JYSKE BANK	1,000	02-01-2003	05-07-2012
JYSKE BANK	4,000	06-07-2012	04-10-2012
JYSKE BANK	6,000	05-10-2012	06-06-2013
JYSKE BANK	4,000	07-06-2013	24-04-2014
JYSKE BANK	1,250	25-04-2014	19-03-2015
JYSKE BANK	8,750	20-03-2015	22-03-2015
JYSKE BANK	9,700	23-03-2015	-
SALLING BANK	150	02-01-2003	05-07-2012
SALLING BANK	300	06-07-2012	04-10-2012
SALLING BANK	450	05-10-2012	06-06-2013
SALLING BANK	300	07-06-2013	24-04-2014
SALLING BANK	250	25-04-2014	-
VINDERUP BANK	50	02-01-2003	01-01-2006
VINDERUP BANK	100	02-01-2006	05-07-2012
VINDERUP BANK	200	06-07-2012	04-10-2012
VINDERUP BANK	300	05-10-2012	18-03-2013
SPAREKASSEN MIDTFJORD	100	26-10-2009	22-03-2011
ABN AMRO SECURITIES	100	02-01-2006	09-01-2007
SPARTRELLEBORG	100	02-01-2003	01-01-2006
BANK TRELLEBORG A/S	100	02-01-2006	26-03-2008
SPAREKASSEN SJÆLLAND	100	02-01-2003	05-07-2012
SPAREKASSEN SJÆLLAND	200	06-07-2012	04-10-2012
SPAREKASSEN SJÆLLAND	300	05-10-2012	06-06-2013
SPAREKASSEN SJÆLLAND	200	07-06-2013	24-04-2014
SPAREKASSEN SJÆLLAND	250	25-04-2014	22-03-2015
SPAREKASSEN SJÆLLAND	600	23-03-2015	-
SPAREKASSEN LOLLAND	100	02-01-2003	05-07-2012
SPAREKASSEN LOLLAND	200	06-07-2012	04-10-2012
SPAREKASSEN LOLLAND	300	05-10-2012	06-06-2013
SPAREKASSEN LOLLAND	200	07-06-2013	24-04-2014
SPAREKASSEN LOLLAND	250	25-04-2014	23-05-2014
LÅN & SPAR BANK	150	02-01-2003	05-07-2012
LÅN & SPAR BANK	300	06-07-2012	04-10-2012
LÅN & SPAR BANK	450	05-10-2012	06-06-2013
LÅN & SPAR BANK	300	07-06-2013	24-04-2014
LÅN & SPAR BANK	250	25-04-2014	22-03-2015
LÅN & SPAR BANK	650	23-03-2015	-
DRAGSHOLM SPAREKASSE	50	02-01-2003	01-01-2006
DRAGSHOLM SPAREKASSE	100	02-01-2006	05-07-2012
DRAGSHOLM SPAREKASSE	200	06-07-2012	04-10-2012
DRAGSHOLM SPAREKASSE	300	05-10-2012	06-06-2013
DRAGSHOLM SPAREKASSE	200	07-06-2013	24-04-2014
DRAGSHOLM SPAREKASSE	250	25-04-2014	-
BROAGER SPAREKASSE	50	02-01-2003	01-01-2006
BROAGER SPAREKASSE	100	02-01-2006	05-07-2012
BROAGER SPAREKASSE	200	06-07-2012	04-10-2012
BROAGER SPAREKASSE	300	05-10-2012	06-06-2013
BROAGER SPAREKASSE	200	07-06-2013	24-04-2014
BROAGER SPAREKASSE	250	25-04-2014	-
BRØRUP SPAREKASSE	30	02-01-2003	01-01-2006
BRØRUP SPAREKASSE	100	02-01-2006	05-07-2012
BRØRUP SPAREKASSE	200	06-07-2012	04-10-2012
BRØRUP SPAREKASSE	300	05-10-2012	09-01-2013

SPAREKASSEN FÅBORG	100	02-01-2003	05-07-2012
SPAREKASSEN FYN AF 1846 A/S	200	06-07-2012	04-10-2012
SPAREKASSEN FYN AF 1846 A/S	300	05-10-2012	06-06-2013
SPAREKASSEN FYN AF 1846 A/S	200	07-06-2013	24-04-2014
SPAREKASSEN FYN AF 1846 A/S	250	25-04-2014	22-03-2015
SPAREKASSEN FYN AF 1846 A/S	300	23-03-2015	-
DEN LILLE BIKUBE	250	19-12-2014	-
DEN JYSKE SPAREKASSE	100	02-01-2003	05-07-2012
DEN JYSKE SPAREKASSE	200	06-07-2012	04-10-2012
DEN JYSKE SPAREKASSE	300	05-10-2012	06-06-2013
DEN JYSKE SPAREKASSE	200	07-06-2013	24-04-2014
DEN JYSKE SPAREKASSE	250	25-04-2014	22-03-2015
DEN JYSKE SPAREKASSE	700	23-03-2015	-
JELLING SPAREKASSE	75	02-01-2003	01-01-2006
JELLING SPAREKASSE	100	02-01-2006	15-02-2007
MIDDELFART SPAREKASSE	75	02-01-2003	01-01-2006
MIDDELFART SPAREKASSE	100	02-01-2006	05-07-2012
MIDDELFART SPAREKASSE	200	06-07-2012	04-10-2012
MIDDELFART SPAREKASSE	300	05-10-2012	06-06-2013
MIDDELFART SPAREKASSE	200	07-06-2013	24-04-2014
MIDDELFART SPAREKASSE	250	25-04-2014	-
FANØ SPAREKASSE	30	02-01-2003	01-01-2006
FANØ SPAREKASSE	100	02-01-2006	05-07-2012
FANØ SPAREKASSE	200	06-07-2012	04-10-2012
FANØ SPAREKASSE	300	05-10-2012	06-06-2013
FANØ SPAREKASSE	200	07-06-2013	24-04-2014
FANØ SPAREKASSE	250	25-04-2014	-
AMTSSPAREKASSEN FYN	300	02-01-2003	17-08-2003
FIONIA BANK	300	18-08-2003	10-12-2009
FRØS HERREDS SPAREKASSE	75	02-01-2003	01-01-2006
FRØS HERREDS SPAREKASSE	100	02-01-2006	05-07-2012
FRØS HERREDS SPAREKASSE	200	06-07-2012	04-10-2012
FRØS HERREDS SPAREKASSE	300	05-10-2012	06-06-2013
FRØS HERREDS SPAREKASSE	200	07-06-2013	24-04-2014
FRØS HERREDS SPAREKASSE	250	25-04-2014	22-03-2015
FRØS HERREDS SPAREKASSE	300	23-03-2015	-
SVENDBORG SPAREKASSE	75	02-01-2003	01-01-2006
SVENDBORG SPAREKASSE	100	02-01-2006	05-07-2012
SVENDBORG SPAREKASSE	200	06-07-2012	04-10-2012
SVENDBORG SPAREKASSE	300	05-10-2012	06-06-2013
SVENDBORG SPAREKASSE	200	07-06-2013	24-04-2014
SVENDBORG SPAREKASSE	250	25-04-2014	22-03-2015
VORBASSE-HEJNSVIG SPAREKASSE	75	02-01-2003	01-01-2006
VORBASSE-HEJNSVIG SPAREKASSE	100	02-01-2006	05-07-2012
VORBASSE-HEJNSVIG SPAREKASSE	200	06-07-2012	04-10-2012
VORBASSE-HEJNSVIG SPAREKASSE	300	05-10-2012	06-06-2013
VORBASSE-HEJNSVIG SPAREKASSE	200	07-06-2013	24-04-2014
VORBASSE-HEJNSVIG SPAREKASSE	250	25-04-2014	-
FLEMLØSE SPAREKASSE	15	02-01-2003	01-01-2006
FLEMLØSE SPAREKASSE	100	02-01-2006	05-07-2012
FLEMLØSE SPAREKASSE	200	06-07-2012	04-10-2012
FLEMLØSE SPAREKASSE	300	05-10-2012	06-06-2013
FLEMLØSE SPAREKASSE	200	07-06-2013	24-04-2014
FLEMLØSE SPAREKASSE	250	25-04-2014	-
RISE SPARE- OG LÅNEKASSE	30	02-01-2003	01-01-2006
RISE SPARE- OG LÅNEKASSE	100	02-01-2006	05-07-2012
RISE SPARE- OG LÅNEKASSE	200	06-07-2012	04-10-2012
RISE SPARKASSE	300	05-10-2012	06-06-2013
RISE SPARKASSE	200	07-06-2013	24-04-2014
RISE SPARKASSE	250	25-04-2014	-
SPAREKASSEN LØGUMKLOSTER	100	11-12-2008	07-04-2009
SPAREKASSEN RAVSTED	30	02-01-2003	17-08-2003
SPAREKASSEN BREDEBRO	100	19-11-2008	05-07-2012
SPAREKASSEN BREDEBRO	200	06-07-2012	04-10-2012

SPAREKASSEN BREDEBRO	300	05-10-2012	06-06-2013
SPAREKASSEN BREDEBRO	200	07-06-2013	24-04-2014
SPAREKASSEN BREDEBRO	250	25-04-2014	-
BROVST SPAREKASSE	30	02-01-2003	01-01-2006
DRONNINGLUND SPAREKASSE	50	02-01-2003	01-01-2006
DRONNINGLUND SPAREKASSE	100	02-01-2006	05-07-2012
DRONNINGLUND SPAREKASSE	200	06-07-2012	04-10-2012
DRONNINGLUND SPAREKASSE	300	05-10-2012	06-06-2013
DRONNINGLUND SPAREKASSE	200	07-06-2013	24-04-2014
DRONNINGLUND SPAREKASSE	250	25-04-2014	-
DURUP SPAREKASSE	30	02-01-2003	01-01-2006
DURUP SPAREKASSE	100	02-01-2006	26-11-2006
SPAREKASSEN FARSØ	75	02-01-2003	01-01-2006
SPAREKASSEN FARSØ	100	02-01-2006	05-07-2012
SPAREKASSEN FARSØ	200	06-07-2012	04-10-2012
SPAREKASSEN FARSØ	300	05-10-2012	25-10-2012
FUUR SPAREKASSE	30	02-01-2003	01-01-2006
FUUR SPAREKASSE	100	02-01-2006	26-11-2006
HALS SPAREKASSE	30	02-01-2003	01-01-2006
HALS SPAREKASSE	100	02-01-2006	05-07-2012
HALS SPAREKASSE	200	06-07-2012	04-10-2012
HALS SPAREKASSE	300	05-10-2012	06-06-2013
HALS SPAREKASSE	200	07-06-2013	24-04-2014
HALS SPAREKASSE	250	25-04-2014	-
SPAREKASSEN ØSTJYLLAND	75	02-01-2003	01-01-2006
SPAREBANK ØSTJYLLAND	100	02-01-2006	05-07-2012
SPAREBANK ØSTJYLLAND	200	06-07-2012	04-10-2012
SPAREBANK ØSTJYLLAND	300	05-10-2012	02-11-2012
EBH BANK	100	02-01-2003	17-06-2011
SPAREKASSEN HIMMERLAND A/S	100	02-01-2003	05-07-2012
SPAREKASSEN HIMMERLAND A/S	200	06-07-2012	04-10-2012
SPAREKASSEN HIMMERLAND A/S	300	05-10-2012	06-06-2013
SPAREKASSEN HIMMERLAND A/S	200	07-06-2013	23-03-2014
JUTLANDER BANK	200	24-03-2014	24-04-2014
JUTLANDER BANK	250	25-04-2014	22-03-2015
JUTLANDER BANK	600	23-03-2015	-
SPAREKASSEN HOBRO	100	02-01-2003	05-07-2012
SPAREKASSEN HOBRO	200	06-07-2012	04-10-2012
SPAREKASSEN HOBRO	300	05-10-2012	06-06-2013
SPAREKASSEN HOBRO	200	07-06-2013	23-03-2014
VISTOFT SPAREKASSE	300	05-04-2013	06-06-2013
VISTOFT SPAREKASSE	200	07-06-2013	24-04-2014
VISTOFT SPAREKASSE	250	25-04-2014	01-09-2014
SPAREKASSEN HVETBO	75	02-01-2003	01-01-2006
SPAREKASSEN HVETBO A/S	100	02-01-2006	05-07-2012
SPAREKASSEN HVETBO A/S	200	06-07-2012	04-10-2012
SPAREKASSEN HVETBO A/S	300	05-10-2012	24-01-2013
LANGÅ SPAREKASSE	30	02-01-2003	01-01-2006
LANGÅ SPAREKASSE	100	02-01-2006	05-07-2012
LANGÅ SPAREKASSE	200	06-07-2012	04-10-2012
LANGÅ SPAREKASSE	300	05-10-2012	06-06-2013
LANGÅ SPAREKASSE	200	07-06-2013	24-04-2014
LANGÅ SPAREKASSE	250	25-04-2014	-
SPAREKASSEN VESTSALLING	30	02-01-2003	01-01-2006
SPAR SALLING SPAREKASSE	100	02-01-2006	11-05-2012
LØKKEN SPAREKASSE	75	02-01-2003	01-01-2006
LØKKEN SPAREKASSE	100	02-01-2006	23-08-2009
MORSØ SPAREKASSE	100	02-01-2003	01-01-2006
SPAREKASSEN KRONJYLLAND	150	02-01-2003	05-07-2012
SPAREKASSEN KRONJYLLAND	300	06-07-2012	04-10-2012
SPAREKASSEN KRONJYLLAND	450	05-10-2012	06-06-2013
SPAREKASSEN KRONJYLLAND	300	07-06-2013	24-04-2014
SPAREKASSEN KRONJYLLAND	250	25-04-2014	22-03-2015
SPAREKASSEN KRONJYLLAND	700	23-03-2015	-

SPAREKASSEN I SKALS	75	02-01-2003	01-01-2006
SPAREKASSEN I SKALS	100	02-01-2006	05-07-2012
SPAREKASSEN I SKALS	200	06-07-2012	04-10-2012
SPAREKASSEN I SKALS	300	05-10-2012	21-01-2013
SPARBANK A/S	150	02-01-2003	05-07-2012
SPARBANK A/S	300	06-07-2012	04-10-2012
SPARBANK A/S	450	05-10-2012	22-02-2013
SPAREKASSEN BALLING	100	03-07-2009	05-07-2012
SPAREKASSEN BALLING	200	06-07-2012	04-10-2012
SPAREKASSEN BALLING	300	05-10-2012	06-06-2013
SPAREKASSEN BALLING	200	07-06-2013	24-04-2014
SPAREKASSEN BALLING	250	25-04-2014	-
SPAREKASSEN THY	75	02-01-2003	01-01-2006
SPAREKASSEN THY	100	02-01-2006	05-07-2012
SPAREKASSEN THY	200	06-07-2012	04-10-2012
SPAREKASSEN THY	300	05-10-2012	06-06-2013
SPAREKASSEN THY	200	07-06-2013	24-04-2014
SPAREKASSEN THY	250	25-04-2014	22-03-2015
SPAREKASSEN THY	300	23-03-2015	-
SPAREKASSEN LIMFJORDEN	50	02-01-2003	01-01-2006
SPAREKASSEN LIMFJORDEN	100	02-01-2006	20-04-2012
SPAREKASSEN DJURSLAND	100	02-01-2003	05-07-2012
SPAREKASSEN DJURSLAND	200	06-07-2012	04-10-2012
SPAREKASSEN DJURSLAND	300	05-10-2012	06-06-2013
SPAREKASSEN DJURSLAND	200	07-06-2013	24-04-2014
SPAREKASSEN DJURSLAND	250	25-04-2014	-
SPAREKASSEN VENDSYSSEL	75	02-01-2003	01-01-2006
SPAREKASSEN VENDSYSSEL	100	02-01-2006	05-07-2012
SPAREKASSEN VENDSYSSEL	200	06-07-2012	04-10-2012
SPAREKASSEN VENDSYSSEL	300	05-10-2012	06-06-2013
SPAREKASSEN VENDSYSSEL	200	07-06-2013	24-04-2014
SPAREKASSEN VENDSYSSEL	250	25-04-2014	22-03-2015
SPAREKASSEN VENDSYSSEL	500	23-03-2015	-
SPAR NORD BANK	350	02-01-2003	05-07-2012
SPAR NORD BANK	1,400	06-07-2012	04-10-2012
SPAR NORD BANK	2,100	05-10-2012	06-06-2013
SPAR NORD BANK	1,400	07-06-2013	24-04-2014
SPAR NORD BANK	1,250	25-04-2014	19-03-2015
SPAR NORD BANK	8,750	20-03-2015	-
SNEDSTED-NØRHÅ SPAREKASSE	25	02-01-2003	03-07-2005
FJORDBANK MORS 2011	100	02-01-2006	05-07-2012
FJORDBANK MORS 2011	200	06-07-2012	04-10-2012
FJORDBANK MORS 2011	300	05-10-2012	21-05-2013
FRØSLEV-MOLLERUP SPAREKASSE	25	02-01-2003	01-01-2006
FRØSLEV-MOLLERUP SPAREKASSE	100	02-01-2006	05-07-2012
FRØSLEV-MOLLERUP SPAREKASSE	200	06-07-2012	04-10-2012
FRØSLEV-MOLLERUP SPAREKASSE	300	05-10-2012	06-06-2013
FRØSLEV-MOLLERUP SPAREKASSE	200	07-06-2013	24-04-2014
FRØSLEV-MOLLERUP SPAREKASSE	250	25-04-2014	-
BORBJERG SPAREKASSE	15	02-01-2003	01-01-2006
BORBJERG SPAREKASSE	100	02-01-2006	20-06-2011
GJERLEV-ENSLEV SPAREKASSE	25	02-01-2003	01-01-2006
DEN LILLE SPAREKASSE	100	02-01-2006	25-05-2009
FOLKESPAREKASSEN	50	02-01-2003	01-01-2006
FOLKESPAREKASSEN	100	02-01-2006	05-07-2012
FOLKESPAREKASSEN	200	06-07-2012	04-10-2012
FOLKESPAREKASSEN	300	05-10-2012	06-06-2013
FOLKESPAREKASSEN	200	07-06-2013	24-04-2014
FOLKESPAREKASSEN	250	25-04-2014	-
FASTER ANDELSKASSE	30	02-01-2003	01-01-2006
FASTER ANDELSKASSE	100	02-01-2006	05-07-2012
FASTER ANDELSKASSE	200	06-07-2012	04-10-2012
FASTER ANDELSKASSE	300	05-10-2012	06-06-2013
FASTER ANDELSKASSE	200	07-06-2013	24-04-2014

FASTER ANDELSKASSE	250	25-04-2014	-
FRØRUP ANDELSKASSE	75	02-01-2003	01-01-2006
FRØRUP ANDELSKASSE	100	02-01-2006	05-07-2012
FRØRUP ANDELSKASSE	200	06-07-2012	04-10-2012
FRØRUP ANDELSKASSE	300	05-10-2012	06-06-2013
FRØRUP ANDELSKASSE	200	07-06-2013	24-04-2014
FRØRUP ANDELSKASSE	250	25-04-2014	-
LUNDE-KVONG ANDELSKASSE	15	02-01-2003	01-01-2006
LUNDE-KVONG ANDELSKASSE	100	02-01-2006	11-05-2011
RYSLINGE ANDELSKASSE	30	02-01-2003	01-01-2006
RYSLINGE ANDELSKASSE	100	02-01-2006	21-08-2011
SDR. LEM ANDELSKASSE	15	02-01-2003	27-10-2004
MERKUR DEN ALMENNYTTIGE SPAREKASSE	30	02-01-2003	01-01-2006
MERKUR DEN ALMENNYTTIGE SPAREKASSE	100	02-01-2006	05-07-2012
MERKUR DEN ALMENNYTTIGE SPAREKASSE	200	06-07-2012	04-10-2012
MERKUR DEN ALMENNYTTIGE SPAREKASSE	300	05-10-2012	06-06-2013
MERKUR DEN ALMENNYTTIGE SPAREKASSE	200	07-06-2013	24-04-2014
MERKUR DEN ALMENNYTTIGE SPAREKASSE	250	25-04-2014	-
ANDELSKASSEN FÆLLESKASSEN	100	10-10-2008	05-07-2012
ANDELSKASSEN FÆLLESKASSEN	200	06-07-2012	04-10-2012
ANDELSKASSEN FÆLLESKASSEN	300	05-10-2012	06-06-2013
FÆLLESKASSEN	200	07-06-2013	24-04-2014
FÆLLESKASSEN	250	25-04-2014	-
KØBENHAVNS ANDELSKASSE	30	02-01-2003	01-01-2006
KØBENHAVNS ANDELSKASSE	100	02-01-2006	05-07-2012
KØBENHAVNS ANDELSKASSE	200	06-07-2012	04-10-2012
KØBENHAVNS ANDELSKASSE	300	05-10-2012	06-06-2013
KØBENHAVNS ANDELSKASSE	200	07-06-2013	24-04-2014
KØBENHAVNS ANDELSKASSE	250	25-04-2014	-
ETRADE DANMARK	15	02-01-2003	01-01-2006
SAXO EBANK	100	02-01-2006	05-07-2012
SAXO EBANK	200	06-07-2012	04-10-2012
SAXO EBANK	300	05-10-2012	09-01-2013
SAXO PRIVATBANK	300	10-01-2013	06-06-2013
SAXO PRIVATBANK	200	07-06-2013	24-04-2014
SAXO PRIVATBANK	250	25-04-2014	-
CAPINORDIC BANK	100	27-03-2008	03-09-2010
BIL BANK DANMARK A/S	100	02-01-2006	05-07-2012
BIL BANK DANMARK A/S	200	06-07-2012	04-10-2012
BIL BANK DANMARK A/S	300	05-10-2012	06-06-2013
BIL DANMARK	200	07-06-2013	24-04-2014
BIL DANMARK	250	25-04-2014	-
DEXIA BANK DENMARK	30	02-01-2003	01-01-2006
SAXO BANK	100	07-07-2006	05-07-2012
SAXO BANK	200	06-07-2012	04-10-2012
SAXO BANK	300	05-10-2012	06-06-2013
SAXO BANK	200	07-06-2013	24-04-2014
SAXO BANK	250	25-04-2014	22-03-2015
SAXO BANK	3,950	23-03-2015	-
CANTOBANK	100	03-11-2008	05-07-2012
CANTOBANK	200	06-07-2012	04-10-2012
CANTOBANK	300	05-10-2012	06-06-2013
CANTOBANK	200	07-06-2013	30-06-2013
PFA UDBETALINGSBANK	200	01-07-2013	24-04-2014
PFA UDBETALINGSBANK	250	25-04-2014	-
STRAUMUR-BURDARAS INVESTMENT BANK	100	21-01-2009	14-07-2009
LÆGERNES PENSIONS BANK	100	17-06-2011	05-07-2012
LÆGERNES PENSIONS BANK	200	06-07-2012	04-10-2012
LÆGERNES PENSIONS BANK	300	05-10-2012	06-06-2013
LÆGERNES PENSIONS BANK	200	07-06-2013	24-04-2014
LÆGERNES PENSIONS BANK	250	25-04-2014	22-03-2015
LÆGERNES PENSIONS BANK	350	23-03-2015	-
NYKREDIT A/S	300	02-01-2003	05-07-2012
NYKREDIT A/S	600	06-07-2012	04-10-2012

NYKREDIT A/S	900	05-10-2012	06-06-2013
NYKREDIT A/S	600	07-06-2013	24-04-2014
NYKREDIT A/S	250	25-04-2014	22-03-2015
NYKREDIT A/S	1,100	23-03-2015	-
REALKREDIT DANMARK A/S	300	02-01-2003	05-07-2012
REALKREDIT DANMARK A/S	600	06-07-2012	04-10-2012
REALKREDIT DANMARK A/S	900	05-10-2012	06-06-2013
REALKREDIT DANMARK A/S	600	07-06-2013	24-04-2014
REALKREDIT DANMARK A/S	250	25-04-2014	22-03-2015
REALKREDIT DANMARK A/S	500	23-03-2015	-
BRF KREDIT	150	02-01-2003	05-07-2012
BRF KREDIT	300	06-07-2012	04-10-2012
BRF KREDIT	450	05-10-2012	06-06-2013
BRF KREDIT	300	07-06-2013	24-04-2014
BRF KREDIT	250	25-04-2014	22-03-2015
BRF KREDIT	500	23-03-2015	-
NORDEA KREDIT REALKREDITAKTIESELSKAB	125	02-01-2003	05-07-2012
NORDEA KREDIT REALKREDITAKTIESELSKAB	250	06-07-2012	04-10-2012
NORDEA KREDIT REALKREDITAKTIESELSKAB	375	05-10-2012	06-06-2013
NORDEA KREDIT REALKREDITAKTIESELSKAB	250	07-06-2013	24-04-2014
NORDEA KREDIT REALKREDITAKTIESELSKAB	250	25-04-2014	22-03-2015
NORDEA KREDIT REALKREDITAKTIESELSKAB	2,150	23-03-2015	-
DLR KREDIT	100	28-03-2008	05-07-2012
DLR KREDIT	200	06-07-2012	04-10-2012
DLR KREDIT	300	05-10-2012	06-06-2013
DLR KREDIT	200	07-06-2013	24-04-2014
DLR KREDIT	250	25-04-2014	-
LR REALKREDIT	200	19-09-2013	24-04-2014
LR REALKREDIT	250	25-04-2014	-
CARNEGIE BANK	150	02-01-2003	05-07-2012
CARNEGIE BANK	300	06-07-2012	04-10-2012
CARNEGIE BANK	450	05-10-2012	06-06-2013
CARNEGIE INVESTMENT BANK	300	07-06-2013	24-04-2014
CARNEGIE INVESTMENT BANK	250	25-04-2014	-
GRØNLANDSBANKEN	250	02-01-2003	05-07-2012
GRØNLANDSBANKEN	500	06-07-2012	04-10-2012
GRØNLANDSBANKEN	750	05-10-2012	06-06-2013
GRØNLANDSBANKEN	500	07-06-2013	24-04-2014
GRØNLANDSBANKEN	250	25-04-2014	-
FØROYA BANKI P/F	150	02-01-2003	01-01-2006
BANKNORDIK	150	02-01-2006	05-07-2012
BANKNORDIK	300	06-07-2012	04-10-2012
BANKNORDIK	450	05-10-2012	06-06-2013
BANKNORDIK	300	07-06-2013	24-04-2014
BANKNORDIK	250	25-04-2014	22-03-2015
BANKNORDIK	400	23-03-2015	-
FØROYA SPARIKASSI	200	02-01-2003	01-01-2006
EIK BANKI	200	02-01-2006	05-07-2012
EIK BANKI	400	06-07-2012	04-10-2012
EIK BANKI	600	05-10-2012	06-06-2013
EIK BANKI FØROYA	400	07-06-2013	24-04-2014
EIK BANKI FØROYA	250	25-04-2014	22-03-2015
EIK BANKI FØROYA	350	23-03-2015	-
FIH ERHVERVSBANK	150	02-01-2003	05-07-2012
FIH ERHVERVSBANK	300	06-07-2012	04-10-2012
FIH ERHVERVSBANK	450	05-10-2012	06-06-2013
FIH ERHVERVSBANK	300	07-06-2013	24-04-2014
FIH ERHVERVSBANK	250	25-04-2014	22-03-2015
FIH ERHVERVSBANK	750	23-03-2015	-
SUDUROYAR SPARIKASSI	50	02-01-2003	01-01-2006
SUDUROYAR SPARIKASSI	100	02-01-2006	05-07-2012
SUDUROYAR SPARIKASSI	200	06-07-2012	04-10-2012
SUDUROYAR SPARIKASSI	300	05-10-2012	06-06-2013
SUDUROYAR SPARIKASSI	200	07-06-2013	24-04-2014

SUDUROYAR SPARIKASSI	250	25-04-2014	-
NORDOYA SPARIKASSI	75	02-01-2003	01-01-2006
NORDOYA SPARIKASSI	100	02-01-2006	05-07-2012
NORDOYA SPARIKASSI	200	06-07-2012	04-10-2012
NORDOYA SPARIKASSI	300	05-10-2012	06-06-2013
NORDOYA SPARIKASSI	200	07-06-2013	24-04-2014
NORDOYA SPARIKASSI	250	25-04-2014	-
KAUPTHING BANK	100	24-01-2007	28-01-2009

# ANNEX C: MERGERS, ACQUISITIONS AND NAME CHANGES IN THE DANISH BANKING SECTOR, 2003-2015(31 MARCH)

## 2003 (5 acquisitions/mergers, 7 name changes)

- Den Norske Bank changes name to DnB Nor Bank ASA. (November 2003)
- Almind Spare- og Lånekasse changes name to Almind Sparekasse. (18 March 2003)
- Andelskassen Midtjylland merges with Linde Andelskasse. (10 December 2003)
- Citibank changes name to Citigroup. (Medio May 2003)
- DiskontoBanken changes name to DiBaBank. (27 October 2003)
- Hals Sogns Spare- og Lånekasse changes name to Hals Sparekasse. (December 2003)
- J.A.K. Andelskassen Østervrå merges with J.A.K. Andelskassen Hjørring. (25 September 2003)
- J.A.K. Andelskassen Østervrå merges with J.A.K. Andelskassen Østvendssysel. (30 July 2003)
- Hvetbo Herreds Sparekasse changes name to Sparekassen Hvetbo. (Medio December 2003)
- Sparekassen Løgumkloster merges with Sparekassen Ravsted. (1 July 2003)
- Sparekassen Hammel changes name to Sparekassen Østjylland. (9 January 2003)
- Vestjysk Bank A/S merges with A/S Nordvestbank. (17 February 2003)

## 2004 (1 acquisitions/mergers, 7 name changes)

- Håndværkerbanken changes name to Hvb Bank. (September 2004)
- Hvb Bank changes name to Max Bank. (15 November 2004)
- Bjergby-Flade Sparekasse acquires Tødsø-Erslev Sparekasse and changes name to Sparekassen Spar Mors. (25 November 2004)
- GE Capital Bank changes name to GE Money Bank. (1 October 2004)
- Gudme Raaschou changes name to HSH Gudme Bank A/S.
- Mørke Sogns Sparekasse changes name to Mørke Sparekasse. (June 2004)
- Ryomgaard og Omegns Sparekassen changes name to Sparekassen Midtdjurs.
- Amtssparekassen Fyn A/S changes name to Fionia Bank. (19 April 2004)
- GE Capital Bank is formed. (1 January 2004)

## 2005 (12 acquisitions/mergers, 4 name changes)

- Nordea bank Danmark A/S merges with Nord Investment Management Bank A/S. (29 May 2005)
- Sparekassen Limfjorden acquires Hvidbjerg-Ørum Sparekasse. (30 December 2005)
- Søby-Skader-Halling Spare- og Laanekasse acquires Hvilsager-Lime Sparekasse. (9 December 2005)
- Hammershøj Andelskasse merges with Harridslev Andelskasse and continues under the name of Andelskassen Østjylland. (8 December 2005)
- Ø. Brønderslev-Hallund Sparekasse changes name to Ø. Brønderslev Sparekasse. (27 October 2005)
- Thyholm Sparekasse merges with Snedsted-Nørhå Sparekasse and continues under the name of Sparekassen Limfjorden. (8 July 2005)
- Egnsbank Han Herred changes name to EBH Bank A/S. (8 August 2005)
- Folkesparekassen merges with Andelskassen J.A.K. Holstebro. (13 July 2005)
- Sparekassen Thy acquires Helligsø-Gettrup Sparekasse. (23 June 2005)
- Egvad Andelskasse merges with Skjern Egnens Andelskasse and continues under the name of Andelskassen Vestjylland. (12 May 2005)

- Sparekassen Vendsyssel acquires Hellevad-Ørum Sparekasse. (13 May 2005)
- Hammershøj og Omegns Andelskasse acquires Thorsager Andelskasse and changes name to Hammershøj Andelskassen. (12 May 2005)
- Folkesparekassen acquires Århus Andelskasse. (17 March 2005)
- Sparekassen Østjylland acquires Spare- og Laanekassen i Vium Sogn. (2 March 2005)
- Kaupthing Bank changes name to Eik Bank A/S. (20 February 2005)
- Agerbæk-Glejbjerg Andelskasse merges with Årre og Omegns Andelskasse and continues under the name of Andelskassen Sydvestjylland. (11 February 2005)

#### **2006 (10 acquisitions/mergers, 5 name changes)**

- Føroya Sparikassi changes name to Eik Bank. (19 December 2006)
- Sparekassen Vestsalling merges with Sparekassen Sundsøre. (28 December 2006)
- Morsø Sparekasse acquires Durup Sparekasse, Fuur Sparekasse og Roslev Sparekasse. (23 November 2006)
- Sparekassen Vendsyssel acquires Jerslev Sparekasse. (13 November 2006)
- FöreningsSparbanken changes name to Swedbank. (10 October 2006)
- Sparekassen Himmerland changes name to Sparekassen Himmerland A/S. (11 October 2006)
- Andelskassen Midtjylland acquires Andelskassen Vestjylland and changes name to Andelskassen Midtvest. (11 October 2006)
- Spar Nord Bank A/S acquires Sparekassen Midt Vest. (11 October 2006)
- Sparekassen i Skals acquires Almind Sparekasse. (4 October 2006)
- Skælskør Bank A/S acquires Flakkebjerg og Omegns Sparekasse. (6 September 2006).
- Sparekassen Vendsyssel acquires Brovst Sparekasse. (5 July 2006)
- Sparekassen Østjylland acquires Thise Sparekasse. (22 June 2006)
- P/F Suduroyar Sparikassi merges with Suduroyar Sparikassi. (28 February 2006)
- Vivild og Omegns Sparekasse changes name to Sparekassen Djursland. (15 January 2006)
- HSH Gudme changes name to Gudme Raaschou Bank. (1 January 2006)

#### **2007 (13 acquisitions/mergers, 4 name changes)**

- Sparekassen Kronjylland acquires Mørke Sparekasse. (17 October 2007)
- Eik Bank A/S merges with SkandiaBanken. (30 August 2007)
- Stadil Sparekasse merges with Hover Sparekasse. (23 November 2007)
- Andelskassen J.A.K. Slagelse merges with Morsø Andelskasse. (3 August 2007)
- Andelskassen Østhimmerland merges with Onsild Andelskasse. (13 July 2007)
- Sparekassen Hvetbo changes name to Sparekassen Hvetbo A/S. (July 2007)
- Sparekassen Hvetbo merges with Sparekassen Hvetbo A/S. (27 June 2007)
- Tandslet Andelskasse merges with Andelskassen Tinglev and continues under the name of Andelskassen Sønderjylland. (22 June 2007)
- Hadsten Bank Aktieselskab changes name to Aarhus Lokalbank Aktieselskab. (20 June 2007)
- Nykredit Bank A/S merges with Nykredit Portefølje Bank A/S. (20 June 2007)
- Folkesparekassen acquires JAK Østfyns Andelskasse. (30 May 2007)
- Gjerlev-Enslev Sparekasse merges with Galten Sparekasse til Den Lille Sparekasse. (17 April 2007)
- Sparekassen sparTrelleborg changes name to bankTrelleborg A/S. (2 April 2007)
- Sparekassen Kronjylland merges with Astrup Tulstrup Hvilsted Sparekasse. (9 March 2007)
- Den Jyske Sparekasse merges with Jelling Sparekasse. (13 February 2007)
- Andelskassen J.A.K. Slagelse acquires Eggeslevmagle Fælleskasse. (14 February 2007)
- Sparbank Vest A/S changes name to Sparbank A/S. (January 2007)
- Sparekassen Vestsalling changes name to Spar Salling. (1 January 2007)

### **2008 (10 acquisitions/mergers)**

- Vestjysk Bank A/S acquires Aktieselskabet Ringkjøbing Bank. (3 December 2008)
- Bankaktieselskabet af 21. november 2008 is formed. (1 December 2008)
- Aktieselskabet Morsø Bank acquires Sparekassen Spar Mors. (3 November 2008)
- Sparekassen Vendsyssel acquires Ulsted Sparekasse. (17 October 2008)
- Frøslev-Møllerup Sparekasse acquires Sparekassen Nordmors. (10 October 2008)
- Vestjysk Bank A/S acquires Bonusbanken A/S. (6 October 2008)
- Bankaktieselskabet af 24. august 2008 acquires Roskilde Bank A/S. (6 October 2008)
- Skovlund-Øse Andelskasse acquires Billum Andelskasse and changes name to Andelskassen Varde. (14 May 2008)
- Sparekassen Himmerland A/S acquires St. Brøndum Sparekasse A/S. (4 April 2008)
- Sparekassen Sjælland merges with Haarslev Sparekasse. (25 March 2008)
- Sydbank A/S merges with bankTrelleborg A/S. (27 March 2008)

### **2009 (9 acquisitions/mergers)**

- Nova Bank Fyn A/S acquires Fionia bank. (The part that Nordea Bank Danmark A/S does not acquire). (27 November 2009)
- Andelskassen J.A.K. Slagelse acquires J.A.K. Andelskassen Brenderup. (30 July 2009)
- Lån og Spar Bank A/S acquires Gudme Raaschou Bank A/S. (1 July 2009)
- Andelskassen Varde merges with Thorstrup Andelskasse. (20 May 2009)
- Andelskassen Himmerland merges with Andelskassen Vesthimmerland. (19 May 2009)
- Handelsbanken – filial af Svenska handelsbanken AB acquires Lokalbanken i Nordsjælland A/S. (30 April 2009)
- Løkken Sparebank A/S acquires Løkken Sparekasse. (26 March 2009)
- Sparekassen Hobro merges with Den Lille Sparekasse. (12 March 2009)
- Den Jyske Sparekasse merges with Sparekassen Løgumkloster. (12 March 2009)

### **2010 (10 acquisitions/mergers)**

- Brørup Sparekasse A/S merges with Brørup Sparekasse. (29 October 2010)
- EBH Bank A/S merges with Løkken Sparebank A/S. (26 May 2010)
- Sparekassen Djursland merges with Agri-Egens Sparekasse. (15 April 2010)
- Nykredit Bank A/S merges with Forstædernes Bank A/S. (6 April 2010)
- Sparekassen Lolland A/S merges with Finansbanken A/S. (29 March 2010)
- Sparekassen Kronjylland merges with Tved Sparebank. (6 January 2010)
- Nordjyske Bank A/S merges with Ø. Brønderslev Sparekasse. (4 January 2010)
- Max bank A/S merges with Skælskør Bank A/S. (9 September 2010)
- Morsø Sparebank A/S merges with Aktieselskabet af Morsø Bank og Morsø Sparekasse A/S and continues under the name of Fjordbank Mors A/S. (3 november 2010)
- Andelskassen Midtvest merges with Løgstrup Andelskasse and continues under the name of Andelskassen MidtVest. (17 December 2010)

### **2011 (17 acquisitions/mergers, 4 name changes)**

- Sparekassen Himmerland A/S merges with Sparekassen Midtfjord. (6 February 2011)
- Amagerbanken af 2011 A/S acquires Amagerbanken A/S. (6 February 2011)
- SAXO-ETRADE BANK A/S changes name to SAXO E\*BANK A/S. (28 March 2011)
- Sparekassen Lolland A/S merges with Eik Bank Danmark 2010 A/S. (29 March 2011)
- Jernved-Rømø Andelskasse merges with Andelskassen Sydvestjylland and continues under the name of Andelskassen Sydjylland. (14 April 2011)
- Andelskassen Østjylland merges with Andelskassen Nordøstjylland. (14 April 2011)
- Andelskassen Sønderjylland merges with Andelskassen Alssund. (15 April 2011)

- Sparekassen for Nr. Nebel og Omegn merges with Lunde-Kvong Andelskasse. (5 May 2011)
- SDA Bank A/S changes to a limited company and merges with Sammenslutningen Danske Andelskasser. (24 May 2011)
- Danske Andelskasser Bank A/S merges with SDA Bank A/S. (27 May 2011)
- BRFbank A/S changes name to BRFkredit Bank A/S. (20 June 2011)
- FS Bank A/S acquires Roskilde Bank A/S. (10 June 2011)
- FS Bank A/S acquires EBH Bank A/S. (17 June 2011)
- Sparekassen Djursland merges with Sparekassen Midtdjurs. (22 June 2011)
- Fjordbank Mors af 2011 A/S acquires Fjordbank Mors A/S. (26 June 2011)
- Østjysk Bank A/S merges with Fruering-Vitved Sparekasse. (30 June 2011)
- Sparekassen Faaborg A/S acquires Ryslinge Andelskasse. (11 July 2011)
- FS Bank A/S acquires Nova Bank Fyn A/S. (10 June 2011)
- Max Bank af 2011 A/S acquires Max Bank A/S. (9 October 2011)
- DNB Nor Bank ASA changes name to DNB Bank ASA, filial af DNB Bank ASA, Norge. (11 November 2011)
- Saxo Treasury Bank A/S changes name to Saxo Treasury A/S. (17 November 2011)
- JPMorgan Asset Management (Europe), Denmark Branch is granted license to perform business in Denmark. (6 December 2011)

#### **2012 (19 acquisitions/mergers, 4 name changes)**

- Rise Spare- og Lånekasse changes name to Rise Sparkasse. (20 December 2012)
- Dexia Bank Denmark A/S changes name to Banque Internationale á Luxembourg Bank Danmark A/S. (25 January 2012)
- Sparekassen Vendsyssel merges with Sparekassen Limfjorden. (27 February 2012)
- Den Jyske Sparekasse merges with Sparekassen Farsø. (16 March 2012)
- Søby-Skader-Halling Spare- og Laanekasse changes name to Søbe-Skader-Halling Sparekasse. (14 March 212)
- Eik Banki Føroya P/F changes name to Eik Banki P/F. (29 March 2012)
- Vestjysk Bank A/S merges with Aarhus Lokalbank Aktieselskab. (30 March 2012)
- Dragsholm Sparekasse merges with Sparekassen for Arts Herred. (20 April 2012)
- Sparekassen Kronjylland acquires Sparebank Østjylland af 2012 A/S. (22 April 2012)
- Folkesparekassen merges with J.A.K. Andelskassen Varde. (9 May 2012)
- Den Jyske Sparekasse acquires Spar Salling Sparekasse. (10 May 2012)
- Skandinaviske Enskilda Banken AB merges with Skandinaviska Enskilda Banken AB. (30 May 2012)
- Saxo Privatbank A/S merges with Fondsmæglerselskabet Sirius Kapitalforvaltning A/S. (29 June 2012)
- Møns Bank A/S merges with Fanefjord Sparekasse. (2 June 2012)
- Sparekassen Thy merges with Hunstrup-Østerild Sparekasse. (29 August 2012)
- FS Bank A/S acquires Sparebank Østjylland af 2012 A/S. (6 September 2012)
- Sparekassen Himmerland A/S merges with Vokslev Sogns Spare- og Lånekasse. (1 October 2012)
- FS Bank A/S acquires Max Bank af 2011 A/S. (23 October 2012)
- Sydbank A/S acquires Tønder Bank A/S. (2 November 2012)
- Sparekassen Vendsyssel merges with Sparekassen Hvetbo A/S. (8 November 2012)
- Spar Nord Bank A/S merges with Sparbank A/S. (14 November 2012)
- Salling Bank A/S merges with A/S Vinderup Bank. (23 November 2012)
- Sparekassen Thy merges with Boddum-Ydby Sparekasse. (17 december 2012)

#### **2013 (9 acquisitions/mergers, 2 name changes)**

- Aktieselskabet Lollands Bank acquires Vordingborg Bank A/S. (20 December 2013)

- BIL Banque Internationale á Luxembourg S.A., filial acquires BIL Banque Internationale á Luzembourg Bank Danmark A/S. (26 September 2013)
- Svendborg Sparekasse A/S changes name to Fynske Bank A/S. (6 December 2013)
- Svendborg Sparekasse A/S merges with Vestfyns Bank A/S. (6 December 2013)
- Carnegie Bank A/S changes name to Carnegie Investment Bank, filial af Carnegie Investment Bank AB (publ), Sverige. (1 December 2013)
- Carnegie Investment Bank AB (publ) is granted license to perform business in Denmark. (28 October 2013)
- FIH Erhvervsbank A/S merges with FIH Kapital Bank A/S. (23 August 2013)
- Rønde Sparekasse merges with Helgenæs Sparekasse. (4 January 2013)
- Den Jyske Sparekasse merges with Sparekassen i Skals. (9 January 2013)
- Jyske Bank A/S acquires Sparekassen Lolland A/S. (25 January 2013)
- Folkesparekassen merges with Andelskassen J.A.K. Ebeltoft. (1 May 2013)
- Møns Bank A/S merges with Kongsted Sparekasse. (1 May 2013)

#### **2014 (3 acquisitions/mergers, 2 name changes)**

- Citibank International Plc, Denmark Branch changes name to Citibank International Limited, Denmark Branch. (31 October 2014)
- Sparekassen Djursland merges with Vistoft Sparekasse. (15 August 2014)
- Jyske Bank A/S merges with BRF Kredit. (30 April 2014)
- Folkesparekassen merges with Funder Fælleskasse Andelskasse. (11 April 2014)
- Sparekassen Faaborg A/S changes name to Sparekassen Fyn A/S. (Spring 2014)
- Sparekassen Himmerland A/S acquires Sparekassen Hobro and continues under the name of Jutlander Bank A/S. (6 January 2014)

#### **2015 (3 acquisitions/mergers, 2 name changes)**

- Sparekassen Kronjylland acquires Vorbasse-Hejnsvig Sparekasse. (29 January 2015)
- Nordjyske Bank A/S merges with A/S Nørresundby Bank and continues under the name of Nordjyske Bank A/S. (31 March 2015)

Source: Danish Bankers Association and Danish Financial Supervisory Authority.

# ANNEX D: GROUPS OF BANKS BY SIZE, 2003-2015

The banks are grouped by size following the definition of the Danish Financial Supervisory Authority, FSA. According to this definition, banks are grouped by the size of their working capital, which consists of deposits, issued bonds, subordinated debt and shareholders' equity. The limits for working capital were revised in 2006 and 2011, cf. below. The FSA size groups (group 1-4) only cover deposit banks and not mortgage banks which are also eligible as monetary-policy counterparties. We have placed the mortgage banks in those size groups where the deposit banks of the relevant financial groups are placed. The two largest groups (FSA groups 1 and 2) are shown below for each year (beginning-of-year), while remaining banks are classified as small banks, i.e. belonging to FSA group 3-4.

## 2003

*Large banks (working capital of at least kr. 25 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 3 billion to kr. 25 billion)*

- Alm. Brand Bank, Bankaktieselskabet
- Amagerbanken, Aktieselskab
- Amtssparekassen Fyn A/S
- Arbejdernes Landsbank, Aktieselskabet
- Forstædernes Bank A/S
- Grønlandsbanken A/S
- Handelsbanken (branch of foreign bank)
- Himmerland, Sparekassen
- Kronjylland, Sparekassen
- Lolland, Sparekassen
- Lån og Spar Bank A/S
- Nordjyske Bank A/S
- Nykredit Bank A/S
- Nørresundby Bank, A/S
- Ringkjøbing Landbobank A/S
- Roskilde Bank, Aktieselskabet
- Sammenslutningen Danske Andelskasser
- Sjælland, Sparekassen
- Sparbank Vest A/S
- Spar Nord Bank A/S
- Vestjysk Bank A/S

## 2004

*Large banks (working capital of at least kr. 25 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Handelsbanken (branch of foreign bank)
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 3 billion to kr. 25 billion)*

- Alm. Brand Bank, Bankaktieselskabet
- Amagerbanken, Aktieselskab
- Arbejdernes Landsbank, Aktieselskabet
- Fionia Bank A/S
- Forstædernes Bank A/S
- Himmerland, Sparekassen
- Kronjylland, Sparekassen
- Lolland, Sparekassen
- Lån og Spar Bank A/S
- Morsø Sparekasse
- Nordjyske Bank A/S
- Nykredit Bank A/S
- Nørresundby Bank, A/S
- Ringkjøbing Landbobank A/S
- Roskilde Bank, Aktieselskabet
- Sammenslutningen Danske Andelskasser
- Sjælland, Sparekassen
- Sparbank Vest A/S
- Spar Nord Bank A/S
- Vestjysk Bank A/S

## 2005

*Large banks (working capital of at least kr. 25 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Handelsbanken (branch of foreign bank)
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 3 billion to kr. 25 billion)*

- Alm. Brand Bank, Bankaktieselskabet
- Amagerbanken, Aktieselskab
- Arbejdernes Landsbank, Aktieselskabet
- Diba Bank A/S
- Djurslands Bank A/S

- Fionia Bank A/S
- Forstædernes Bank A/S
- Faaborg A/S, Sparekassen
- Himmerland, Sparekassen
- Kronjylland, Sparekassen
- Lolland, Sparekassen
- Lån og Spar Bank A/S
- Morsø Sparekasse
- Nordjyske Bank A/S
- Nykredit Bank A/S
- Nørresundby Bank, A/S
- Ringkjøbing Bank, Aktieselskabet
- Ringkjøbing Landbobank, Aktieselskab
- Roskilde Bank A/S
- Sammenslutningen Danske Andelskasser
- Sjælland, Sparekassen
- Sparbank Vest A/S
- Spar Nord Bank A/S
- Vestjysk Bank A/S

## 2006

*Large banks (working capital of at least kr. 50 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 10 billion to kr. 50 billion)*

- Alm. Brand Bank, Bankaktieselskab
- Amagerbanken, Aktieselskab
- Arbejdernes Landsbank, Aktieselskab
- Fionia Bank A/S
- Forstædernes Bank A/S
- Handelsbanken (branch of foreign bank)
- Nykredit Bank A/S
- Roskilde Bank, Aktieselskab
- Spar Nord Bank, Bankaktieselskab
- Sparbank Vest A/S

## 2007

*Large banks (working capital of at least kr. 50 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)

- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 10 billion to kr. 50 billion)*

- Alm. Brand Bank A/S
- Amagerbanken Aktieselskab
- Arbejdernes Landsbank, Aktieselskab
- Fionia Bank A/S
- Forstædernes Bank A/S
- Handelsbanken (branch of foreign bank)
- Nykredit Bank A/S
- Roskilde Bank, Aktieselskab
- Spar Nord Bank A/S
- Sparbank A/S
- Vestjysk Bank A/S

## **2008**

*Large banks (working capital of at least kr. 50 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 10 billion to kr. 50 billion)*

- Alm. Brand Bank A/S
- Amagerbanken Aktieselskab
- Arbejdernes Landsbank, Aktieselskab
- Fionia Bank A/S
- Forstædernes Bank A/S
- Handelsbanken (branch of foreign bank)
- Nykredit Bank A/S
- Ringkøbing Landbobank, Aktieselskab
- Roskilde Bank, Aktieselskab
- Sammenslutningen Danske Andelskasser
- Spar Nord Bank A/S
- Sparbank A/S
- Vestjysk Bank A/S

## **2009**

*Large banks (working capital of at least kr. 50 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank A/S
- Nordea Bank Danmark A/S
- Nykredit Bank A/S
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 10 billion to kr. 50 billion)*

- Alm. Brand Bank A/S
- Amagerbanken Aktieselskab
- Arbejdernes Landsbank, Aktieselskab
- FIH Kapital Bank A/S
- Fionia Bank A/S
- Forstædernes Bank A/S
- Handelsbanken (branch of foreign bank)
- Ringkjøbing Landbobank, Aktieselskab
- Sammenslutningen Danske Andelskasser
- Sjælland, Sparekassen
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Spar Nord Bank A/S
- Sparbank A/S
- Vestjysk Bank A/S

## **2010**

*Large banks (working capital of at least kr. 50 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank A/S
- Nordea Bank Danmark A/S
- Nykredit Bank A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 10 billion to kr. 50 billion)*

- Alm. Brand Bank A/S
- Amagerbanken Aktieselskab
- Arbejdernes Landsbank, Aktieselskab
- Forstædernes Bank A/S
- Handelsbanken (branch of foreign bank)
- Kronjylland, Sparekassen
- Ringkjøbing Landbobank, Aktieselskab
- Roskilde Bank, Aktieselskab
- Sammenslutningen Danske Andelskasser
- Saxo Bank A/S
- Sjælland, Sparekassen
- Spar Nord Bank A/S
- Sparbank A/S
- Vestjysk Bank A/S

## **2011**

*Large banks (working capital of at least kr. 65 billion)*

- Danske Bank A/S
- FIH Erhvervsbank A/S
- Jyske Bank A/S
- Nordea Bank Danmark A/S

- Nykredit Bank A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 12 billion to kr. 65 billion)*

- Alm. Brand Bank A/S
- Amagerbanken A/S
- Arbejdernes Landsbank, Aktieselskab
- Handelsbanken (branch of foreign bank)
- Kronjylland, Sparekassen
- Ringkjøbing Landbobank, Aktieselskab
- Sammenslutningen Danske Andelskasser
- Saxo Bank A/S
- Sjælland, Sparekassen
- Spar Nord Bank A/S
- Sparbank A/S
- Vestjysk Bank A/S

## **2012**

*Large banks (working capital of at least kr. 65 billion)*

- Danske Bank A/S
- Handelsbanken (branch of foreign bank)
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Nykredit Bank A/S
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 12 billion to kr. 65 billion)*

- Alm. Brand Bank A/S
- Arbejdernes Landsbank, Aktieselskab
- Danske Andelskassers Bank A/S
- FIH Erhvervsbank A/S
- Kronjylland, Sparekassen
- Lolland A/S, Sparekassen
- Ringkjøbing Landbobank, Aktieselskab
- Saxo Bank A/S
- Sjælland, Sparekassen
- Spar Nord Bank A/S
- Sparbank A/S
- Vestjysk Bank A/S

## **2013**

*Large banks (working capital of at least kr. 65 billion)*

- Danske Bank A/S
- Handelsbanken (branch of foreign bank)
- Jyske Bank, A/S
- Nordea Bank Danmark A/S

- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Nykredit Bank A/S
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 12 billion to kr. 65 billion)*

- Alm. Brand Bank A/S
- Arbejdernes Landsbank, Aktieselskab
- Danske Andelskassers Bank A/S
- Den Jyske Sparekasse
- FIH Erhvervsbank A/S
- Kronjylland, Sparekassen
- Ringkjøbing Landbobank, Aktieselskab
- Saxo Bank A/S
- Sjælland, Sparekassen
- Spar Nord Bank A/S
- Vestjysk Bank A/S

## **2014**

*Large banks (working capital of at least kr. 65 billion)*

- Danske Bank A/S
- Handelsbanken (branch of foreign bank)
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Nykredit Bank A/S
- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 12 billion to kr. 65 billion)*

- Alm. Brand Bank A/S
- Arbejdernes Landsbank, Aktieselskab
- Den Jyske Sparekasse
- FIH Erhvervsbank A/S
- Jutlander Bank
- Kronjylland, Sparekassen
- Ringkjøbing Landbobank, Aktieselskab
- Saxo Bank A/S
- Sjælland, Sparekassen
- Spar Nord Bank A/S
- Vestjysk Bank A/S

## **2015**

*Large banks (working capital of at least kr. 65 billion)*

- Danske Bank A/S
- Handelsbanken (branch of foreign bank)
- Jyske Bank, A/S
- Nordea Bank Danmark A/S
- Skandinaviska Enskilda Banken AB (branch of foreign bank)
- Nykredit Bank A/S

- Sydbank A/S

*Medium-sized banks (working capital in the range from kr. 12 billion to kr. 65 billion)*

- Alm. Brand Bank A/S
- Arbejdernes Landsbank, Aktieselskab
- Den Jyske Sparekasse
- FIH Erhvervsbank A/S
- Jutlander Bank A/S
- Kronjylland, Sparekassen
- Lån og Spar Bank A/S
- Ringkjøbing Landbobank, Aktieselskab
- Saxo Bank A/S
- Sjælland, Sparekassen
- Spar Nord Bank A/S
- Sparekassen Vendsyssel
- Vestjysk Bank A/S

## ANNEX E: INJECTIONS OF GOVERNMENT CAPITAL IN RELATION TO BANK PACKAGE 2

Credit institute	Million kroner	Credit institute	Million kroner
Alm. Brand Bank A/S	856	Realkredit Danmark A/S	2,000
Amagerbanken A/S	1,106	Salling Bank A/S	65
Basisbank A/S	98	Sammenslutningen Danske Andelskasser	400
BRFKredit A/S (realkredit)	2,221	Skjern Bank A/S	65
Brørup Sparekasse	94	Skælskør Bank	125
Danmarks Skibskredit	900	Sparbank A/S	480
Danske Bank A/S	24,000	Sparekassen Faaborg A/S	200
Den Jyske Sparekasse	250	Sparekassen Hvetbo A/S	64
DiBa Bank A/S	161	Sparekassen Lolland A/S	200
DLR Kredit (realkredit)	4,829	Sparekassen Vendsyssel	235
Dronninglund Sparekasse	75	Sparekassen Østjylland	300
Eik Bank Danmark A/S	295	Spar Nord Bank A/S	1,300
Eik Banki P/F	327	Spar Salling Sparekasse	32
Farsø Sparekasse	130	Suduroyar Sparkassi	10
FIH Erhvervsbank A/S	1,900	Totalbanken A/S	93
Føroya Banki	204	Vestjysk Bank A/S	1,438
Himmerland Sparekasse	296	Vorbasse-Hejnsvig Sparekasse	35
Max Bank A/S	204	Vordingborg Bank A/S	32
Middelfart Sparekasse	110	Østjydsk Bank A/S	157
Morsø Bank A/S	158	Aarhus Lokalbank A/S	178
Morsø Sparekasse	240		
Nordfyns Bank A/S	48		
Norðoya Sparikassi	51	Total	45,962

Note: As of 31 December 2009.

Source: Ministry of Business and Growth (2013).

# ANNEX F: BREAKDOWN OF LOANS BY BANK SIZE

**Breakdown of loans by size of the banks sending and receiving loans, 2003 (from 22 September)**

Table F.1

Million kr. per banking day		Size group of the receiving bank			
Size group of the sending bank	Large	Medium-sized	Small	All	
Large	4,062	927	587	5,576	
Medium-sized	580	548	238	1,365	
Small	520	403	169	1,092	
All	5,161	1,878	994	8,033	

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2004**

Table F.2

Million kr. per banking day		Size group of the receiving bank			
Size group of the sending bank	Large	Medium-sized	Small	All	
Large	3,400	1,237	709	5,347	
Medium-sized	585	540	328	1,453	
Small	513	359	216	1,089	
All	4,498	2,137	1,253	7,888	

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2005**

Table F.3

Million kr. per banking day		Size group of the receiving bank			
Size group of the sending bank	Large	Medium-sized	Small	All	
Large	4,826	1,587	624	7,037	
Medium-sized	622	710	177	1,510	
Small	869	578	185	1,632	
All	6,318	2,875	987	10,180	

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2006**

Table F.4

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	4,335	2,205	967	7,507
Medium-sized	590	279	664	1,533
Small	821	549	353	1,724
All	5,746	3,033	1,984	10,763

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2007**

Table F.5

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	4,466	1,339	718	6,523
Medium-sized	323	283	721	1,327
Small	925	692	376	1,993
All	5,714	2,314	1,815	9,843

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2008**

Table F.6

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	3,784	1,365	889	6,038
Medium-sized	329	511	437	1,277
Small	1,228	911	272	2,411
All	5,342	2,788	1,598	9,727

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2009**

Table F.7

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	3,926	1,228	330	5,484
Medium-sized	770	298	136	1,204
Small	1,111	713	82	1,907
All	5,807	2,239	548	8,594

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2010**

Table F.8

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	5,450	640	326	6,415
Medium-sized	586	241	96	923
Small	617	211	59	887
All	6,652	1,092	481	8,225

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2011**

Table F.9

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	4,870	737	270	5,877
Medium-sized	1,162	123	50	1,335
Small	501	227	29	757
All	6,532	1,087	349	7,969

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2012**

Table F.10

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	3,492	482	191	4,165
Medium-sized	147	105	37	290
Small	216	131	15	362
All	3,855	718	243	4,817

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2013**

Table F.11

Size group of the sending bank	Size group of the receiving bank			
	Large	Medium-sized	Small	All
Large	2,749	450	112	3,311
Medium-sized	44	21	70	136
Small	20	24	0	45
All	2,814	495	182	3,491

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2014**

Table F.12

Million kr. per banking day	Size group of the receiving bank			
Size group of the sending bank	Large	Medium-sized	Small	All
Large	3,419	657	78	4,154
Medium-sized	66	52	26	143
Small	25	42	0	67
All	3,510	751	103	4,364

Source: See Section 2.

**Breakdown of loans by size of the banks sending and receiving loans, 2015 (until 31 March)**

Table F.13

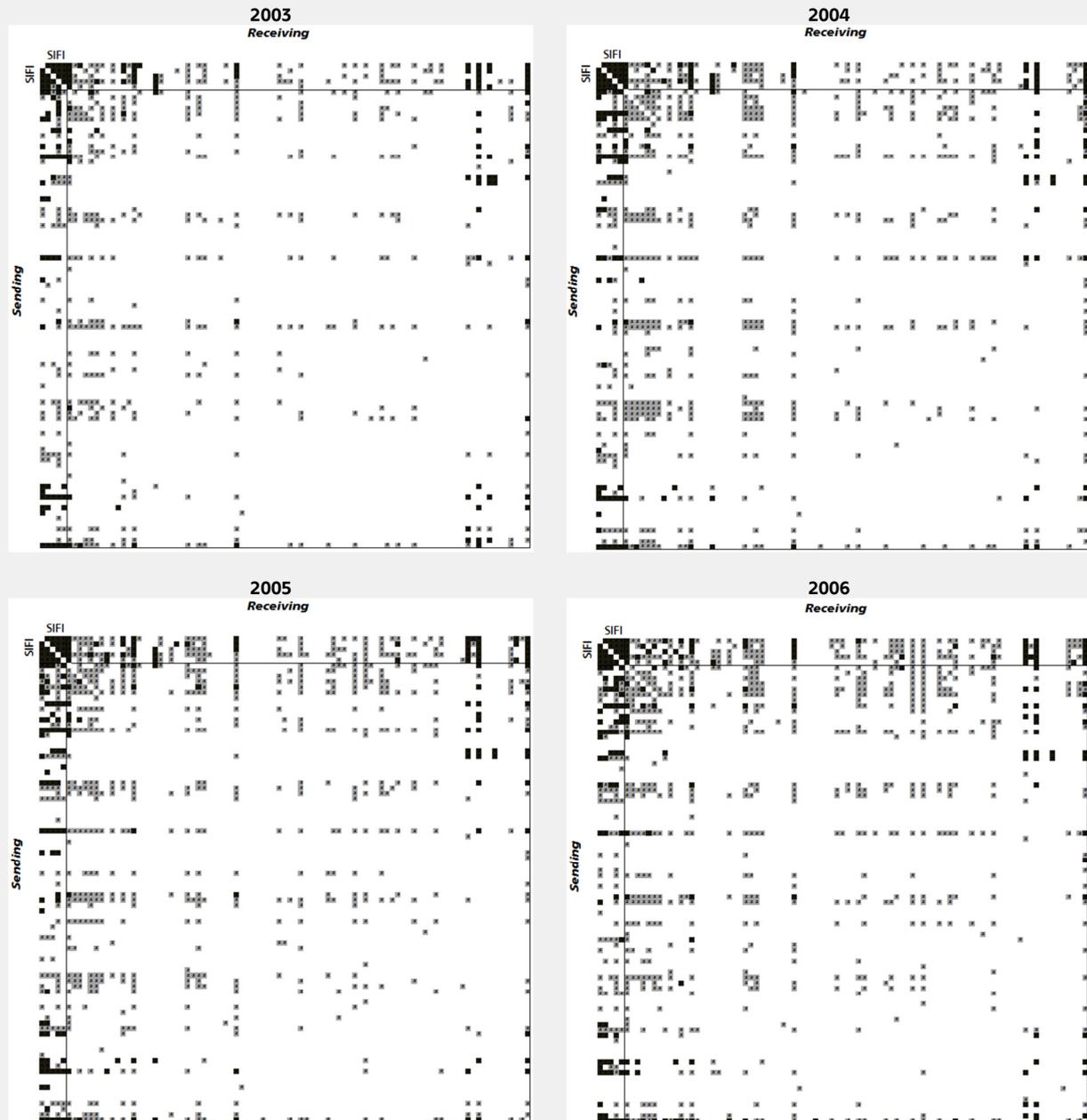
Million kr. per banking day	Size group of the receiving bank			
Size group of the sending bank	Large	Medium-sized	Small	All
Large	2,928	1,097	137	4,163
Medium-sized	69	116	13	197
Small	3	26	0	29
All	3,000	1,239	150	4,389

Source: See Section 2.

# ANNEX G: DETAILED MAPS OF TRADING NETWORKS

Individual banks' bilateral exposures in Danish uncollateralised day-to-day interbank market 2003-2006, annual averages of days with exposures

Chart G.1



White: no loans

Gray: under 1 billion kr. per day on average

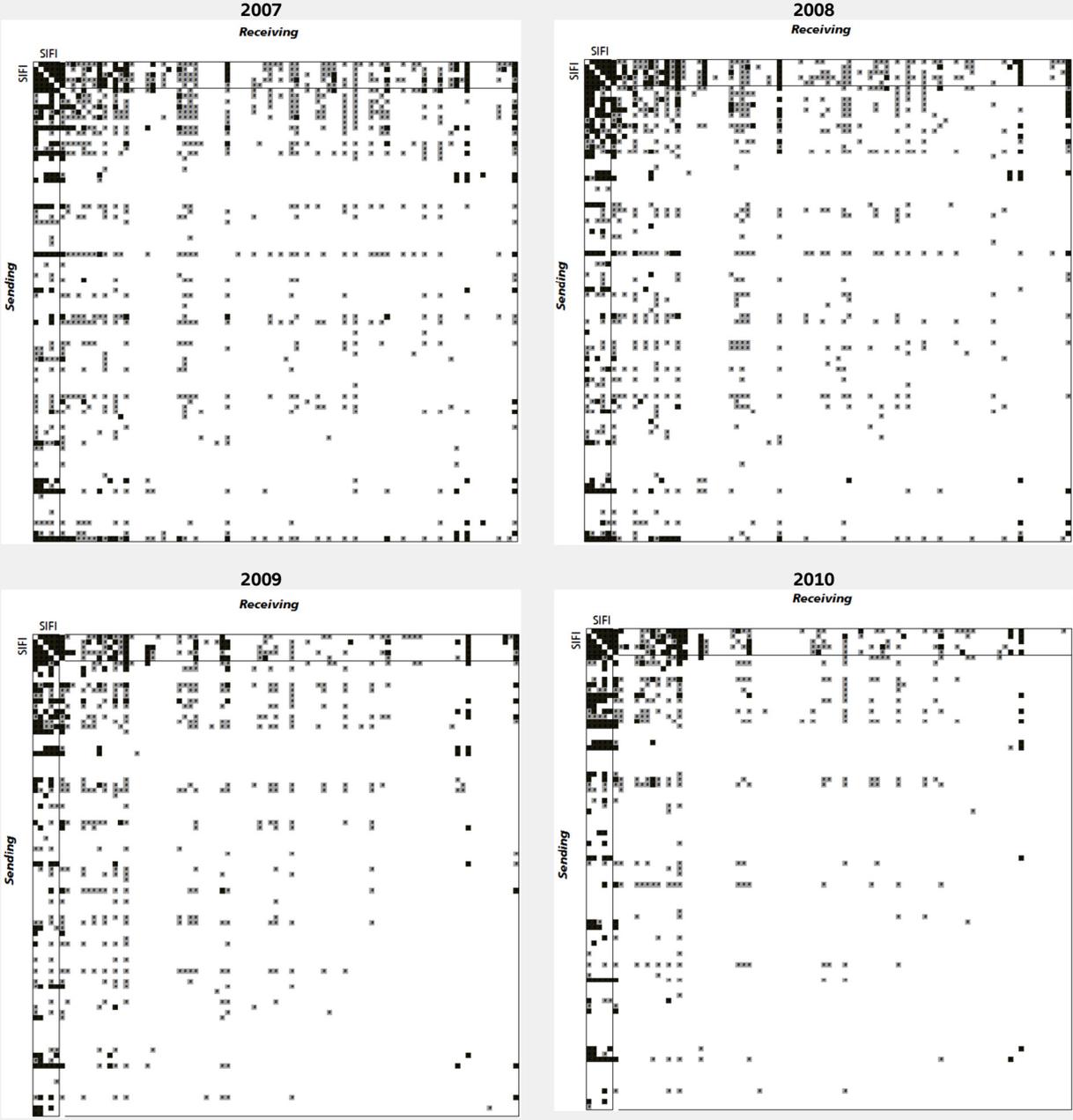
Black: over 1 billion kr. per day on average

Note: The ordering of the individual banks is the same in all charts.

Source: See Section 2.

Individual banks' bilateral exposures in Danish uncollateralised day-to-day interbank market 2007-2010, annual averages of days with exposures

Chart G.2

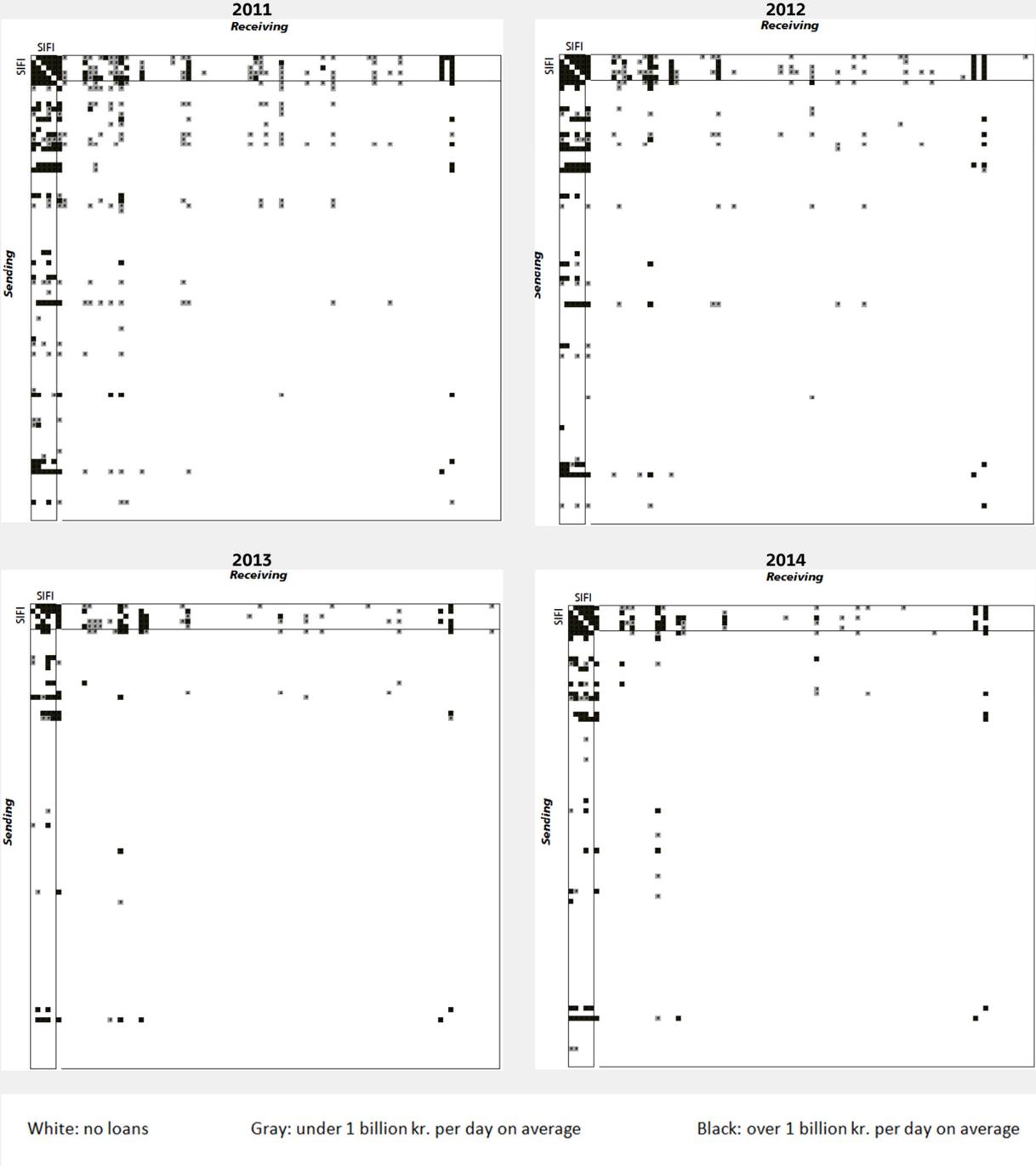


White: no loans                      Gray: under 1 billion kr. per day on average                      Black: over 1 billion kr. per day on average

Note: The ordering of the individual banks is the same in all charts.  
 Source: See Section 2.

**Individual banks' bilateral exposures in Danish uncollateralised day-to-day interbank market 2011-2014, annual averages of days with exposures**

Chart G.3



Note: The ordering of the individual banks is the same in all charts.  
 Source: See Section 2.