THE MONEY MARKET AT PRESSURE ON THE DANISH KRONE AND NEGATIVE INTEREST RATES

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INTRODUCTION AND SUMMARY

In a situation like the current one where the monetary policy counterparties' need to place funds with Danmarks Nationalbank exceeds the overall current account limit, the rate of interest on certificates of deposit (the CD rate) is key to Danish money market rates. The CD rate's move into negative territory has not affected its significance for the Danish krone, nor Danmarks Nationalbank's ability to manage the exchange rate of the krone.

The money market was impacted by the pressure on the krone at the beginning of the year. To prevent the krone from appreciating, Danmarks Nationalbank reduced the CD rate to -0.75 per cent. As banks' and mortgage banks' loans and deposits with Danmarks Nationalbank offer an alternative to money market loans and deposits, this caused money market rates to drop sharply.

Banks and mortgage banks can place liquidity in certificates of deposits or deposit funds in current accounts with Danmarks Nationalbank. The current account rate is zero. Therefore, the monetary policy counterparties generally prefer to place liquidity in their current accounts to avoid negative interest rates.

However, the overall placement need exceeds the limit for the monetary policy counterparties' total current account deposits. Consequently, the monetary policy counterparties overall must place part of their liquidity in certificates of deposit. An increase in total deposits with Danmarks Nationalbank will thus earn interest at the CD rate. Hence, the CD rate determines money market rates.

The reduction of the CD rate has increased the spread between the current account rate and the CD rate – and thus the scope for fluctuations in overnight money market rates. Volatility in unsecured overnight rates may also be affected by low market activity, entailing that interest rate fixing on a given day is based on few transactions and depends on the liquidity conditions on that day. Volatility does not change the effect of monetary policy rates on the krone exchange rate.

Turnover in the unsecured overnight money market has declined since Danmarks Nationalbank's introduction of negative interest rates. This especially reflects that banks' deposits with Danmarks Nationalbank have been large enough for the need for money market transactions to be low.

Activity in the euro area overnight money market has also decreased. Following the European Central Bank's (ECB) expansion of its asset purchase programme in March 2015, turnover in the euro area dropped to its lowest level since the launch of the euro, and banks' deposits with the ECB increased.

The level of activity in longer-term unsecured loans has fallen since the financial crisis. This is a global phenomenon, reflecting greater focus on liquidity and credit risks. During the period of pressure on the Danish krone at the beginning of the year, the level of activity in the FX swap market was stronger than during the rest of the year. More buoyant activity in the FX swap market reflected the substantial demand for Danish kroner.

MONEY MARKET RATES AND MONETARY POLICY RATES

The Danish money market comprises the interbank market for krone-denominated loan agreements and interest rate derivatives with a maturity of up to 1 year transacted between banks and mortgage banks, cf. Box 1. For the monetary policy counterparties – banks and mortgage banks – short-term loans and deposits with Danmarks Nationalbank provide an alternative to loans and deposits in the short-term money market. Thus, monetary policy rates are key to money market rates.

In a situation like the current one where the monetary policy counterparties need to place substantial funds with Danmarks Nationalbank, the deposit rate of Danmarks Nationalbank determines Danish money market rates. Banks and mortgage banks can place funds in certificates of deposit or deposit funds in current accounts, cf. Box 2. The current account limits ensure that banks and mortgage banks invest sufficient funds in certificates of deposits for the CD rate to determine the level of money market rates. The banking sector's marginal position with Danmarks Nationalbank is in certificates of deposits at the CD rate, and thus an increase in total deposits with Danmarks Nationalbank will earn interest at the CD rate.

The overall need of monetary policy counterparties to deposit funds with Danmarks Nationalbank is impacted by Danmarks Nationalbank's interventions in the foreign exchange market.

The Danish money market and the annual money market survey

Box 1

Money market loans comprise unsecured loans, repos (loans against bonds as collateral) and FX swaps. A FX swap is a simultaneous agreement comprising a spot transaction and a forward contract in foreign exchange. Initially, foreign exchange is exchanged for kroner (the spot transaction) and, at a later date, the initial transaction is reversed at a price, the forward price, determined when the swap is entered into (the forward contract).

In addition, short-term securities and Danmarks Nationalbank's certificates of deposit are part of the money market.

Interest rate derivatives include e.g. CITA swaps and FRAs. A CITA (Copenhagen Interbank T/N Average) swap is a short-term interest rate swap where a variable rate of interest (the T/N rate) is swapped for a fixed rate of interest determined at the commencement of the agreement. A FRA (Forward Rate Agreement) is an agreement to fix the interest rate for a future period. For further information about money market products, see Danmarks Nationalbank (2009).

Danmarks Nationalbank performs an annual survey of the Danish money market in the 2nd quarter with banks reporting data on turnover, etc. In the 2015 survey, data was also compiled for the 1st quarter in light of the pressure on the Danish krone at the beginning of the year. In this connection, Danmarks Nationalbank interviewed several market participants about developments in the money market.

Danmarks Nationalbank's monetary policy instruments

Box 2

Monetary policy instruments are the deposit and lending facilities made available by Danmarks Nationalbank for banks and mortgage banks, the monetary policy counterparties. The counterparties have access to two facilities at Danmarks Nationalbank: open market operations and current account deposits.

Current accounts are demand accounts in which the counterparties can deposit liquidity overnight. An overall limit has been determined for the counterparties' total current account deposits with Danmarks Nationalbank at the close of the day. If the counterparties' total current account deposits exceed the overall limit, the current account deposits will be converted into certificates of deposit. Monetary policy counterparties may exceed their individual limits, provided that the overall current account limit is not exceeded.

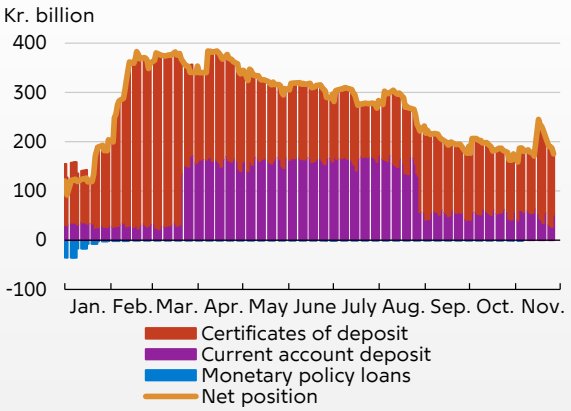
Through Danmarks Nationalbank's regular open market operations on the last banking day of each week, the counterparties can borrow against collateral and invest the funds in certificates of deposit. If necessary, Danmarks Nationalbank also conducts extraordinary open market operations, in which it buys or sells certificates of deposit in order to manage liquidity in the money market. Extraordinary open market operations may be pre-announced. Announced open market operations in a given month are published on the penultimate banking day of the previous month. Determination of announced extraordinary open market operations is based on information on government payments included in Danmarks Nationalbank's liquidity projection. In addition, Danmarks Nationalbank may conduct unannounced extraordinary open market operations, for instance when Danmarks Nationalbank intervenes in the foreign exchange market, which cannot be predicted. These operations are announced at 10:00 a.m. on the day they are to be conducted.

When Danmarks Nationalbank makes intervention purchases of foreign exchange from banks, as seen during the period of pressure on the Danish krone in January and February 2015, this is offset by increases in deposits with Danmarks Nationalbank, and the CD rate will pass through to interest rate fixing and pricing in the money and foreign exchange markets. When their need to deposit funds with Danmarks Nationalbank exceeds the total current account limit, the only option for the monetary policy counterparties overall is to place funds in certificates of deposit.

The individual counterparty may reduce its deposits with Danmarks Nationalbank, but this will be offset by other counterparties increasing their deposits. Thus, the counterparties' accounts with Danmarks Nationalbank represent a closed system. The monetary counterparties' total net account with Danmarks Nationalbank is referred to as the net position, cf. Chart 1.

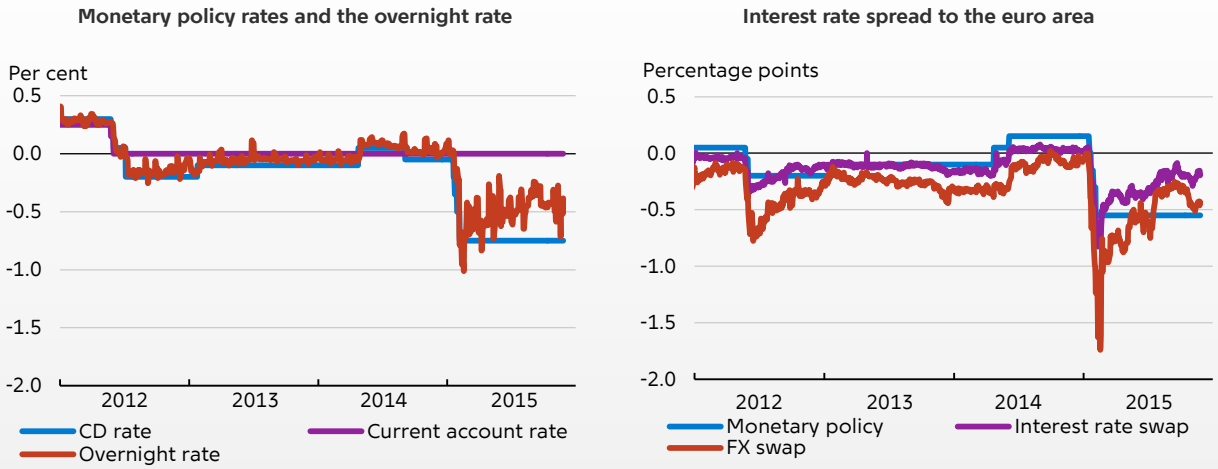
Danish banks' total need to place funds with Danmarks Nationalbank increased sharply after Danmarks Nationalbank's intervention purchases in January and February, and, against this backdrop, Danmarks Nationalbank increased the current account limit in March. Danmarks Nationalbank subsequently conducted substantial intervention sales and reduced the current account limit in August to ensure the continued pass-through of the CD rate to money market rates. Periods of expectations of changes in interest rates may cause money market rates to fluctuate widely. In February 2015, after Danmarks Nationalbank's reduction of the CD rate to -0.75 per cent, money

Use of Danmarks Nationalbank's monetary policy instruments in 2015 Chart 1



Note: The net position is defined as the counterparties' holdings of certificates of deposit and current account deposits less monetary policy loans. The most recent observations are from 26 November 2015.
Source: Danmarks Nationalbank.

Monetary policy rates, the overnight rate and interest rate spread to the euro area Chart 2



Note: Left-hand chart: The overnight rate is a weekly average of the T/N rate. Right-hand chart: The monetary policy spread is the spread between Danmarks Nationalbank's CD rate and the ECB's deposit rate. The interest rate swap is the spread between the 3-month EONIA and CITA swap rates. The FX swap is the implied 3-month interest rate spread from FX swaps. The most recent observations are from 26 November 2015.
Source: Thomson Reuters Datastream, ECB and Danmarks Nationalbank.

market rates plunged, and, for a short period of time, short-term money market rates were lower than the CD rate, cf. Chart 2, reflecting market expectations of further interest rate reductions. The massive inflow of foreign exchange during this period also boosted banking sector liquidity, contributing to the drop in money market rates.

Low Danish money market rates caused the spread between money market rates in Denmark and the euro area to turn negative – even more negative than the monetary policy spread, cf. Chart 2. The negative interest rate spread made it less attractive to invest in kroner rather than in euro. Developments in the money market spread were important in alleviating the pressure on the Danish krone.

As an alternative to buying kroner against euro today and investing directly in the money market, investors can buy kroner forward. The implied interest rate spread between the two currencies involved in these transactions, the FX swap spread, dropped considerably more than the monetary policy spread and other money market spreads. Buying kroner forward became more expensive.

The lower implied interest rate spread reflected the strong demand from foreign investors and Danish insurance and pension companies interested in making forward purchases of kroner against euro, cf. Danmarks Nationalbank (2015). At the same time, the FX swap market for kroner is limited to few providers, which may also result in a deviation between the implied interest rate spreads and other money market spreads. When the pressure on the krone eased, the implied interest rate spread narrowed considerably.

LESS NEED FOR UNSECURED OVERNIGHT LOANS

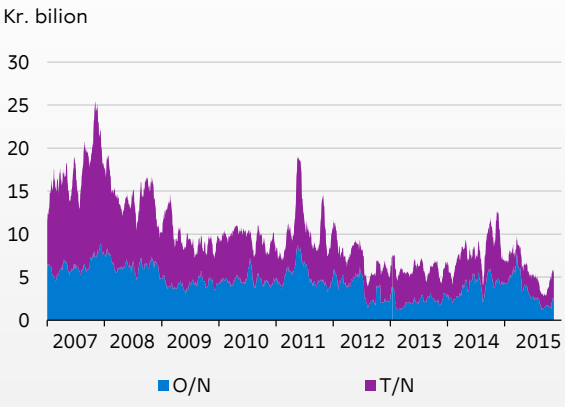
Turnover in unsecured overnight loans, used by banks in their daily liquidity management, decreased from an already low level after Danmarks Nationalbank's reduction of the CD rate to -0.75 per cent, cf. Chart 3. On earlier occasions when the CD rate was in negative territory, turnover in the unsecured overnight market was also low. One explanation is that the CD rate is lower than the current account rate, giving banks and mortgage banks an interest rate incentive to increase their current account deposits with Danmarks Nationalbank. At the same time, the institutions' access to deposit funds in current accounts was extended, since the current account limits were generally higher than when the CD rate was positive. The higher current account deposits have enhanced the institutions' ability to manage daily liquidity fluctuations without resorting to the unsecured overnight money market.

Turnover in tomorrow next loans, T/N, has been declining in recent years, while the share of overnight loans, O/N, of the unsecured overnight market increased from the beginning of 2013. O/N loans commence on the day they are agreed, while T/N loans commence on the following day. In a period of large current account deposits, banks may have less need to manage unforeseen liquidity fluctuations two days into the future. Moreover, the change from three to two days of settlement in the Danish bond market in October 2014 may have had an impact.

Traditionally, T/N loans have accounted for a large share of the turnover in the unsecured overnight market, reflecting, inter alia, that Danmarks Nationalbank does not have a marginal (daily) lending facility, as known e.g. from the ECB, to be used by counterparties in case of unforeseen liquidity needs, cf. Abildgren et al. (2010). There-

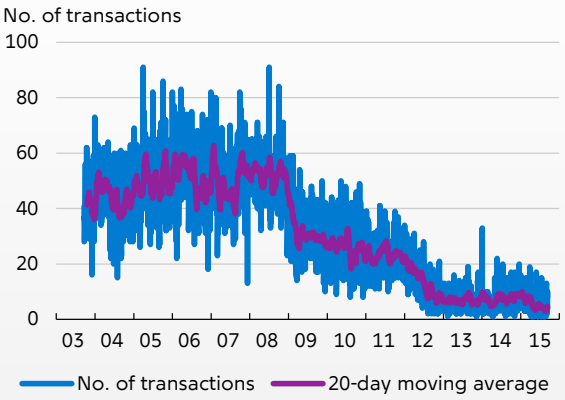
Daily turnover in unsecured overnight loans broken down by O/N loans and T/N loans

Chart 3



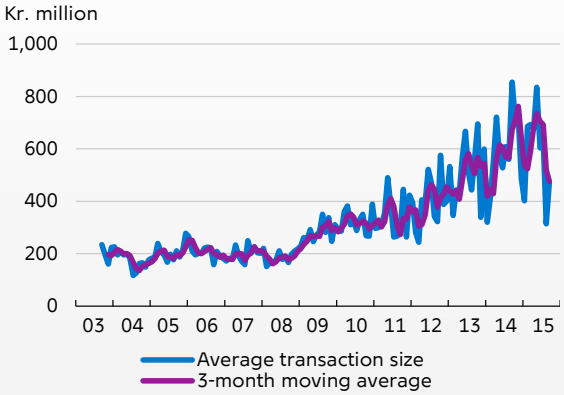
Note: 21-day moving average. Spot next loans, S/N, are also raised in the unsecured overnight market, but the volume is limited. The most recent observations are from 23 November 2015. The most recent observations are from 23 November 2015.
Source: Danmarks Nationalbank.

Number of transactions in the unsecured overnight money market Chart 4



Note: Daily observations. Both O/N loans and T/N loans are included. The data period covers the period from 22 September 2003 to 11 September 2015. Only loans between the monetary policy counterparties are included. See Abildgren et al. (2015) for a detailed description of the data used.
Source: Danmarks Nationalbank.

Average transaction size for unsecured overnight loans Chart 5



Note: Monthly averages. Both O/N loans and T/N loans are included. The data period covers the period from 22 September 2003 to 11 September 2015. Only loans between the monetary policy counterparties are included. See Abildgren et al. (2015) for a detailed description of the data used.
Source: Danmarks Nationalbank.

fore, banks in the Danish market have typically been using T/N loans to manage foreseen and planned liquidity movements, while the O/N market has been used to handle unforeseen fluctuations.

When the CD rate has been in negative territory, the average turnover in connection with days of open market operations has been higher than on other days. When a negative CD rate was first introduced in mid-2012, turnover in connection with days of open market operations increased relative to the turnover on other days. The relationship subsided when the CD rate moved back into positive territory from April to September 2014 and subsequently picked up again.

FEWER BUT LARGER TRANSACTIONS

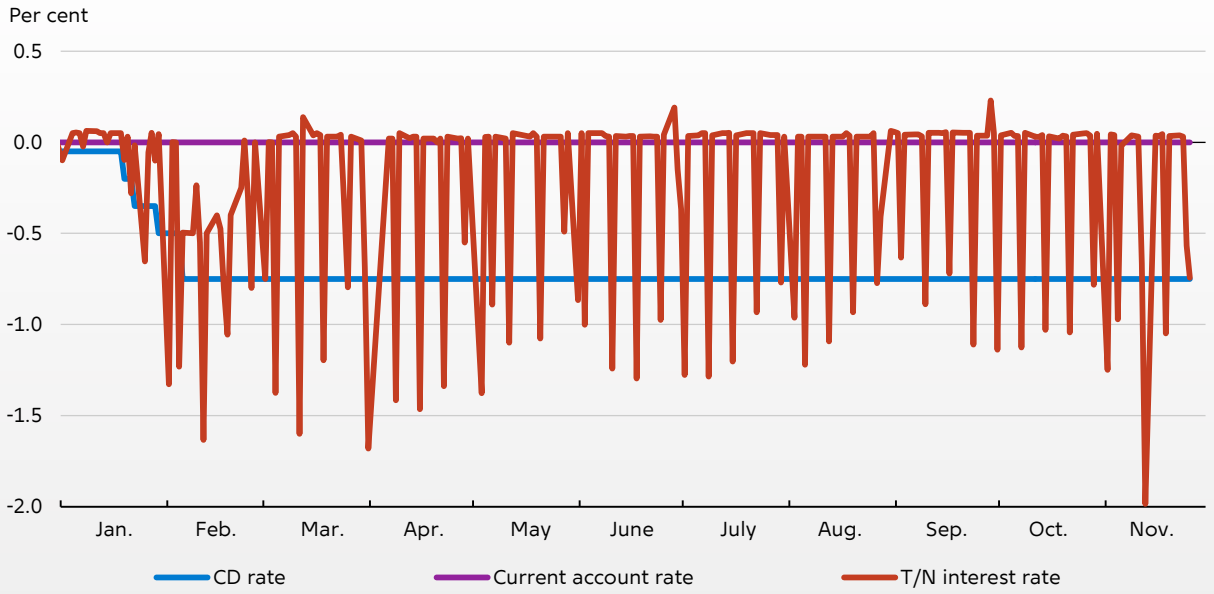
The lesser need for unsecured overnight loans is also reflected in the number of transactions. The average daily number of unsecured overnight loans among monetary policy counterparties has decreased from approximately 50 in the pre-crisis years to the current level of less than 10 transactions on average per banking day, cf. Chart 4. Abildgren et al. (2015) perform a detailed analysis of the monetary policy counterparties' interbank trading with unsecured overnight loans at transaction level during the period from September 2003 to March 2015. The analysis shows, inter alia, that on average there have been very few T/N loans per banking day since the introduction of a negative CD rate. Thus, individual transactions could potentially have a relatively great impact on the overall T/N rate.

Since 2012, in particular, average transaction sizes in the unsecured overnight market have tended to increase, cf. Chart 5. This reflects, in part, the lapse of many very small transactions in response to generally ample liquidity, the reduction in the number of small banks, in particular, and increased focus on credit risk in the wake of the financial crisis, cf. Abildgren et al. (2015). The most frequent transaction size has been growing over time, from kr. 50 million before the financial crisis to kr. 200 million in the first three quarters of 2015.

GREATER FLUCTUATIONS IN THE OVERNIGHT RATE

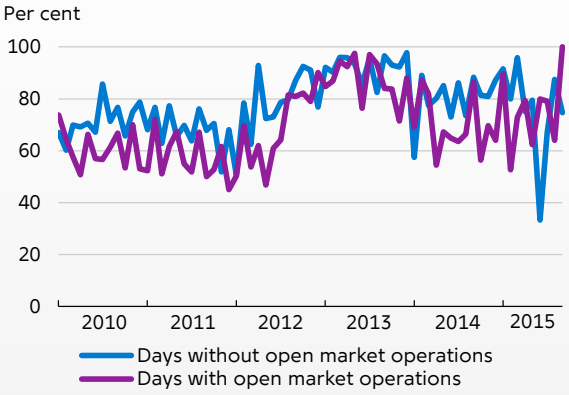
The overnight rate fluctuates considerably on different days of the week, cf. Chart 6. Most of these fluctuations are of a technical nature, given that the overnight rate on any given day depends on whether Danmarks Nationalbank conducts

The CD rate, current account rate and T/N rate since the beginning of 2015 Chart 6



Note: The T/N rate is shown on the day the T/N loan commences. The most recent observations are from 26 November 2015.
Source: Danmarks Nationalbank.

Share of unsecured overnight turnover where the borrower has relatively more room in the current account Chart 7



Note: Monthly shares. The data period covers the period from 1 January 2010 to 11 September 2015. Only loans between the monetary policy counterparties are included. See Abildgren et al. (2015) for a detailed description of the data used. The chart shows the share of turnover in unsecured overnight loans where the lender's current account utilisation exceeds that of the borrower, and the borrower's deposits are below the current account limit. The current account utilisation is calculated as the bank's current account balance as a percentage of its current account limit at the end of the monetary policy day, see also Box 4.
Source: Danmarks Nationalbank.

open market operations, cf. Box 3. Fluctuations increase with the spread between the CD rate and the current account rate. The technical volatility is unproblematic – it is systematic and well known by market participants.

In recent years, interest rate fixing on a given day has been based on few transactions and depends on liquidity conditions in the market on that day. In periods of negative interest rates, activity has been driven, to a greater extent than usual, by institutions with deposits below their current account limit borrowing from those exceeding their limit, cf. Chart 7. In periods of negative CD rates, interest rates on overnight loans have, on average, been higher when the borrower had relatively more room in the current account than the lender, cf. Box 4. This reflects that institutions with deposits below the current account limit have been willing to borrow at a higher rate of interest than the marginal rate for the market overall – the CD rate – because they have been able to deposit the funds in their current accounts at the current account rate.

Interest rate expectations can also impact the T/N rate, for instance during periods of pressure

Theoretical overnight rate

Box 3

When the banking sector's deposits with Danmarks Nationalbank exceed the current account limit, an increase in the sector's total deposits with Danmarks Nationalbank must be invested in certificates of deposit. Accordingly, the CD rate is the alternative interest rate for the rate of interest on money market investments and the key interest rate for Danish money market rates.

The structure of Danmarks Nationalbank's monetary policy instruments means that the overnight money market rate on any given day depends on whether Danmarks Nationalbank will be conducting open market operations. On days without open market operations, the theoretical overnight rate is the current account rate, since, for the individual institution, current account deposits constitute the alternative to overnight money market investments, provided the overall current account limit is observed. On days with open market operations, counterparties will assess the trade-off of the return on investment of funds in the overnight money market against the return on investment in certificates of deposit. The theoretical determination of the overnight rate applies in a situation of perfect competition, without market frictions and risk-neutral monetary policy counterparties and may thus deviate from the actual overnight rate.

The theoretical overnight rate on days with open market operations is determined so that the return from investing in the money market equals the CD rate until the next announced open market operation. If the CD rate is negative and lower than the current account rate, the theoretical overnight rate on days with open market operations must be more negative than the CD rate to offset that, on other days, the theoretical overnight rate equals the current account rate.

The calculation of the theoretical overnight rate can be illustrated by an example involving a Friday when a regular open market operation is carried out and with seven days until the next open market operation. The overnight rate on the Friday covers three days (Friday, Saturday and Sunday). On the following four days, the overnight rate is equal to the current account rate. The counterparty's assessment of the trade-off between investment in certificates of deposit or in the money market can thus be written as:

$$3 * \textit{Overnight rate} + 4 * \textit{Current account rate} = 7 * \textit{CD rate}$$

At a current account rate of 0.00 per cent and a CD rate of -0.75 per cent this results in:

$$3 * \textit{Overnight rate} + 4 * (0.00\ \textit{per cent}) = 7 * (-0.75\ \textit{per cent}) <=>$$

$$\textit{Overnight rate} = \frac{7}{3} * (-0.75\ \textit{per cent}) = -1.75\ \textit{per cent}$$

On Fridays on which Danmarks Nationalbank has announced no further open market operations for the following week, the theoretical overnight rate will thus be -1.75 per cent.

The explanation above of the theoretical overnight rate does not distinguish between O/N loans and T/N loans. The O/N rate is affected on the day of the open market operation. T/N loans commence on the day after the loan is agreed. This means that the T/N rate agreed on the day before the announced open market operation is affected by open market operations, while the T/N rate is not affected by unannounced open market operations.

on the Danish krone, which may trigger expectations of changes in Danmarks Nationalbank's monetary policy rates. In February 2015, after the reduction of the CD rate to -0.75 per cent, the T/N rate was, on average, lower than the CD rate. Moreover, the T/N rate may be influenced by expectations of conversion of current account deposits into certificates of deposit.[1] After the introduction of a negative CD rate, the volume of conversions increased considerably. Danmarks Nationalbank converted current account deposits into certificates of deposit on 47 occasions from January to November 2015.

TOTAL TURNOVER IN THE DANISH MONEY MARKET

According to Danmarks Nationalbank's annual money market survey, total turnover in money market loans remained low in the 2nd quarter of 2015, cf. Chart 8. Increased focus on liquidity and credit risks after the financial crisis has brought about a shift from unsecured loans to secured loans, and loan maturities have generally been substantially reduced. Turnover in unsecured loans with a maturity of more than 1 day was virtually non-existent, cf. Chart 9.

1 For instance, if Danmarks Nationalbank purchases foreign exchange, as seen during the pressure on the Danish kroner at the beginning of 2015, the monetary policy counterparties' total deposits with Danmarks Nationalbank increase. As a result, Danmarks Nationalbank may convert current account deposits to certificates of deposits, which will reduce the expected return on deposits.

Borrowers with deposits below the current account limit borrow at a higher rate of interest

Box 4

This box presents the results of a regression analysis of the interest rate on unsecured overnight loans using data at transaction level, see Abildgren et al. (2015) for a detailed description of the data. Previous studies have shown that it is possible to provide a meaningful description of the overnight rate on unsecured loans in a simple regression model using aggregated data, cf. e.g. Mindested et al. (2013) and Christensen et al. (2014). The estimated model of the overnight rate can be summarised in the following equation:

$$r_t = \beta_0 + \beta_1 * \textit{Current account utilisation}_t + \beta_2 * \textit{Theoretical}_t + \beta_3 * \textit{Current account deposit}_t + \beta_4 * \textit{Current account allocation}_t + \beta_5 * \textit{End of month}_t \quad (1)$$

where *r* indicates the rate of interest on the unsecured overnight loan as a spread to the current account rate. *Current account utilisation* is an indicator with the value of 1 if the lender's percentage utilisation of its current account limit is higher than that of the borrower, and the borrower has deposits below the current account limit, and otherwise 0.[1] *Theoretical* indicates the theoretical interest rate spread to the current account rate, cf. the explanation in Box 3. *The current account deposit* indicates the total current account deposit with Danmarks Nationalbank in billion kroner and is a measure of the total liquidity among the monetary policy counterparties. *Current account allocation* is a measure of the concentration of the current account deposit, calculated as the percentage of the total current account deposit with Danmarks Nationalbank, held by the bank with the largest current account deposit, cf. Syrstad (2012). *End of month* is an indicator with the value of 1 on the last trading day of the month, and otherwise 0.

The focus of this box is on the coefficient β_1. This coefficient can be interpreted as the spread on loans where the borrower has relatively more room in the current account than the lender, relative to other unsecured overnight loans. The estimation of the spread allows for a number of factors that are usually expected to affect the formation of interest rates in the unsecured overnight money market, cf. equation (1).

When the model is estimated for all days in periods of positive CD rates from September 2003 until September 2015, the estimated coefficient β_1 is negative, cf. the table. Conversely, the estimated coefficient β_1 is positive in periods of negative CD rates. The positive coefficient in periods of negative CD rates should be seen in the context that borrowers with deposits below their current account limit have been willing to borrow at a higher rate of interest than the marginal rate for the market overall – the CD rate – because they have been able to deposit the funds in their current accounts at a higher rate of interest (the current account rate is zero). The negative coefficient in periods of positive CD rates may reflect that lenders with ample liquidity are willing to lend funds to borrowers in the money market at a relatively low rate of interest to avoid having to deposit their excess liquidity at an even lower rate of interest (the current account rate).

The estimated coefficient β_1

	Periods of positive CD rates		Periods of negative CD rates	
	All days	Days with open market operations	All days	Days with open market operations
Borrower has relatively more room in the current account	-0.0181***	-0.0345***	0.0374***	0.0721***
	(0.0013)	(0.0027)	(0.0079)	(0.0163)

Note: *, ** and *** denote levels of significance of 10, 5 and 1 per cent, respectively. Robust standard errors in parentheses. The table shows the coefficient of *current account utilisation* (an indicator that assumes the value of 1 if the lender's utilisation of its current account limit is higher than that of the borrower, and the borrower has deposits below the current account limit, and otherwise 0) in a regression model as described above. The data period covers the period from 22 September 2003 to 11 September 2015. See Abildgren et al. (2015) for a detailed description of the data used.

Source: Danmarks Nationalbank.

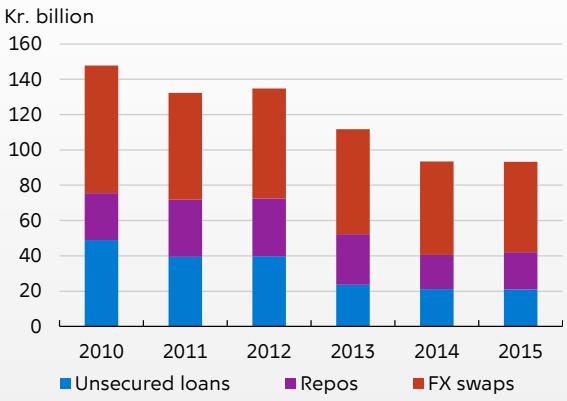
1. Ideally, the current account utilisation should be calculated when the loan agreement is signed, adjusted for expected liquidity fluctuations until the end of the monetary policy day on which the loan commences. However, this is not possible based on available data. Instead, the current account utilisation is calculated as the bank's current account balance as per cent of its current account limit calculated at the end of the monetary policy day on which the loan commences.

In January and February, increased demand for Danish kroner on forward terms translated into considerably higher turnover in FX swaps than in the other months of the 1st half of 2015. FX swap turnover is driven, to a great extent, by customers' and banks' foreign exchange positions and hedging of exchange rate risks.

THE OVERNIGHT MONEY MARKET IN THE EURO AREA

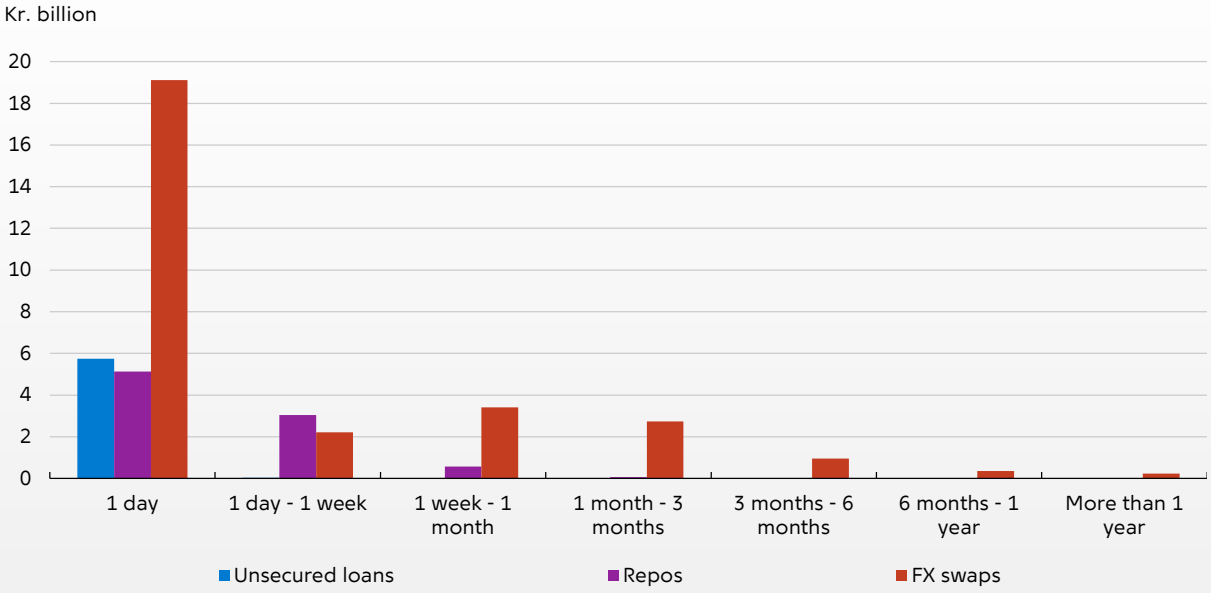
Following the ECB's launch of its expanded asset purchase programme in March 2015, the turnover in the unsecured euro area overnight money market dropped to its lowest level since the introduction of the euro, cf. Chart 10 (left). Moreover, there has generally been substantial excess liquidity in the banking sector since the ECB introduced full allotment of loans in its refinancing operations in October 2008. Similarly to the situation in Denmark, ample liquidity has reduced banks' need to resort to the overnight money market. Turnover in the overnight money market has tended to decline when excess liquidity increased and vice versa.

Average daily turnover for unsecured loans, repos and FX swaps Chart 8



Note: Average daily turnover in both loans and deposits in April for 2010-11 and in the 2nd quarter of 2012-15. Total turnover in loans and deposits.
Source: Danmarks Nationalbank.

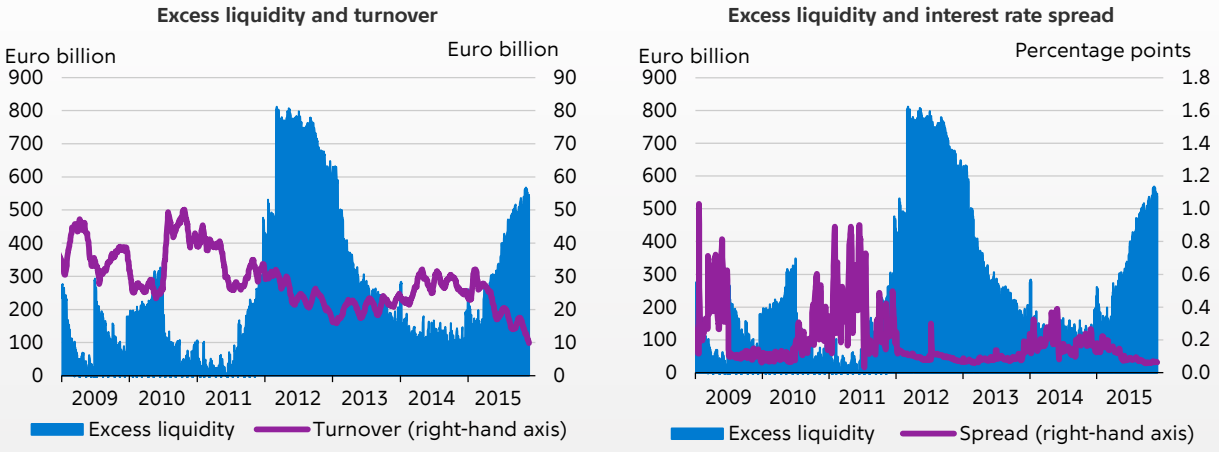
Average daily turnover in loans broken down by instruments and maturities in 2015 Chart 9



Note: Average daily turnover in loans in the 2nd quarter of 2015. The intervals cover the start of the interval and up to the end of the interval. For instance, "1 week – 1 month" covers loans with a maturity of more than 1 week up to and including 1 month. Since loans for a longer period of time can be obtained by renewing short-term loans during the period, the turnover will tend to be higher for short maturities than for long maturities.
Source: Danmarks Nationalbank.

Excess liquidity, turnover in the euro area overnight market and spread between the overnight rate and the ECB's deposit rate

Chart 10



Note: Left-hand chart: The 21-day moving average of the turnover in Eonia, the unsecured overnight money market rate in the euro area. Right-hand chart: The spread between the 5-day moving average of Eonia and the ECB's deposit rate. The most recent observations are from 27 November 2015.
Source: ECB and Bloomberg.

Similarly to the situation in Denmark, interest rates and volatility in the euro area money market depend on excess liquidity and the spread between the ECB's monetary policy rates, cf. ECB (2014) and ECB (2015). The overnight rate in the euro area fell and traded closer to the ECB's deposit rate as excess liquidity rose after the ECB's expansion of its asset purchase programme, cf. Chart 10 (right).

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