

SOURCES AND METHOD

BANKING AND MORTGAGE LENDING, BASED ON MICRODATA

Financial Statistics
Money, Banking and National Accounts

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BANKING AND MORTGAGE LENDING, BASED ON MICRODATA

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0 ADMINISTRATIVE INFORMATION ABOUT THE STATISTICAL PRODUCT

0.1 Name

The publication of statistics for banking and mortgage lending based on microdata is based on reports to Danmarks Nationalbank's Credit Register. At present the following tables are published:

- DNMUF1: Loans to households and corporations by methodology, data type, sector and instrument
- DNMUF2: : Loans to households and corporations by methodology, instrument, data type, sector, type of interest rate and instalment.

0.2 Subject Area

Banks and mortgage credit institutions

Loans

Microdata

Credit Register

0.3 Responsible Authority, Offices, Person etc.

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0.4 Purpose and history

The purpose of the statistics is to shed light on banking and mortgage lending with detailed microdata from the Credit Register. Danmarks Nationalbank has collected data for the Credit Register since the beginning of 2020 and, among other things, the statistics are used for analyses by Danmarks Nationalbank. The first tables based on the statistics have been published for external use as of 22nd of August 2024.

0.5 Users and Application

The tables can e.g. be used for analyses on distributions of different types of loans, the number of loans and the number of borrowers, etc.

The tables are intended for users who are interested in lending activity in Denmark. Users include banks, mortgage credit institutions, Danmarks Nationalbank, ministries, NGO's, universities, the media, and households.

0.6 Sources

The tables are based on Danmarks Nationalbank's Credit Register which consists of quarterly reporting from the largest banks and all mortgage credit institutions in Denmark. These institutes hold at least 96 per cent of the total debt in the MFI-sector. The specific population has changed over time due to e.g. mergers and acquisitions.

Read more about reporting to the Credit Register [here](#).

0.7 Legal Authority

In accordance with §14a of the Danmarks Nationalbank Act (Nationalbankloven) pursuant to Act no. 1163 of 8 June 2021, Danmarks Nationalbank collects the information that is necessary for the performance of Danmarks Nationalbank's tasks, cf. the bank's objectives in §1. This is particularly relevant for Danmarks Nationalbank's work to ensure financial stability and the planning of monetary and foreign exchange policy as well as preparing statistics within its field of competence.

0.8 Respondent Burden

The largest respondent burden lies with the fully reporting institutions which at present are around 22 of the largest banks as well as all mortgage credit institutions in Denmark.

1 CONTENTS

1.1 Description of Contents

The tables are published quarterly with data for the most recent quarter's outstanding nominal amounts, number of loans and borrowers, as well as select percentiles for various dimensions.

Banking and mortgage lending based on microdata is an area that is under development. Hence, Sources and method will be updated in line with publication of more tables that are based on microdata from the Credit Register.

1.2 Statistical Concepts

A description of the variables contained in the published tables can be found below. Data confidentiality was taken into account during the variable selection process. Read more about confidentiality in section "1.3 Confidentiality".

Instalment

Instalment indicates whether instalments are paid on a loan in the given period. Following options are available:

- *All instalment types*: Corresponds to no instalment type being chosen, i.e. this option covers both loans with and without instalments. *All instalment types* is not necessarily a sum of the two other options *With instalments* and *Without instalments*, as this sum will depend on the choices made for other variables. For example:
 - *Number of borrowers for loans with instalments* cannot necessarily be added to *number of borrowers for loans without instalments*. This poses the risk of double counting since a borrower can have both a loan with instalments and another loan without instalments.
 - If a borrower has both a loan with instalments as well as another loan without instalments, then the borrower will count as one borrower in each of the options *With instalments* and *Without instalments*, but the borrower will only be counted one time for the option *All instalment types*.
 - Summation of percentiles is meaningless.
- *With instalments*: Indicates that instalments are paid within the chosen period.
- *Without instalments*: Indicates that instalments are not paid within the chosen period, i.e. the loan is instalment-free.

Data type

- *Number of borrowers*: is only available for the methodology *Calculated per borrower*. *Number of borrowers* states the number of borrowers that have loans with the chosen loan dimensions (instrument type, interest rate type, instalment, etc.). If two borrowers are jointly liable for the same loan they will count as two borrowers. *Number of borrowers* can, in combination with other dimensions, e.g. show how many Danes have a certain type of loan.
- *Number of loans*: is only available for the methodology *Calculated per loan*. *Number of loans* states the number of loans that exist with the chosen loan dimensions (instrument,

interest rate type, instalment, etc.). *Number of loans* can in combination with other dimensions e.g. show how many loans Danish corporations have.

- *Outstanding nominal amount*: States the outstanding amount on loans at nominal value, kr. million. Loans in other currencies than DKK have been converted into DKK with the foreign exchange rate at the end of each period.
- *Lower decile*: Is the 10th percentile calculated using the outstanding nominal amount. For the methodology *Calculated per borrower* the *Lower decile* states the level of debt where 10 per cent of borrowers have a debt lower than or equal to this level. Nominal value, kr. million.
- *Lower quartile*: Is the 25th percentile calculated using the outstanding nominal amount. For the methodology *Calculated per borrower* the *Lower quartile* states the level of debt where 25 per cent of borrowers have a debt lower than or equal to this level. Nominal value, kr. million.
- *Median*: Is the 50th percentile calculated using the outstanding nominal amount. For the methodology *Calculated per borrower* the *Median* states the level of debt where 50 per cent of borrowers have a debt lower than or equal to this level. Nominal value, kr. million.
- *Upper quartile*: Is the 75th percentile calculated using the outstanding nominal amount. For the methodology *Calculated per borrower* the *Upper quartile* states the level of debt where 75 per cent of borrowers have a debt lower than or equal to this level. Nominal value, kr. million.
- *Upper decile*: Is the 90th percentile calculated using the outstanding nominal amount. For the methodology *Calculated per borrower* the *Upper quartile* states the level of debt where 90 per cent of borrowers have a debt lower than or equal to this level. Nominal value, kr. million.

Instrument type

- *Bank loans*: All loans from banks, defined by type of institute (bank) and consists of all relevant instrument types from the [code list](#) of the Credit Register.
- *Bank loans excl. credit*: loans from banks. Consists of the following instrument types from the [code list](#) of the Credit Register:
 - *80 Financial leases*
 - *1003 Reverse repurchase agreements*
 - *1004 Other loans*
- *Credit*: All credit in banks, defined by type of institute (bank) and consists of the following instrument types from the [code list](#) of the Credit Register:
 - *20 Overdraft*
 - *51 Credit card debt*
 - *71 Trade receivables*
 - *1001 Revolving credit other than overdrafts and credit card debt*
 - *1002 Credit lines other than revolving credit.*
- *Credit excl. credit-card debt*: All credit in banks excl. credit-card debt. NOTE: All credit lines are included in the statistics in full regardless of whether the credit is used or not unless otherwise stated. The instrument *Credit excl. credit-card debt* is a subset of *Credit* and consists of the following instrument types from the [code list](#) of the Credit Register:
 - *20 Overdraft*
 - *71 Trade receivables*
 - *1001 Revolving credit other than overdrafts and credit card debt*
 - *1002 Credit lines other than revolving credit.*
- *Credit-card debt*: Credit-cards issued by banks. All credit-cards are included in the statistics regardless of whether they have outstanding debt on them unless otherwise stated. The instrument *Credit-card debt* is a subset of *Credit* and consists of the following instrument type from [code list](#) of the Credit Register:
 - *51 Credit-card debt*

- *Mortgage loans*: All loans from mortgage credit institutes, defined by type of institute and consists of all relevant instrument types from the [code list](#) of the Credit Register.

In some tables the instruments are grouped to calculate totals. The grouping is done as follows and should be read as a hierarchy:

Grouping of instruments for hierarchy

1. All bank and mortgage loans	The group consists of all 4 instruments: <ul style="list-style-type: none"> • Bank loans excl. credit • Credit excl. credit-card debt • Credit-card debt • Mortgage loans
1.1. Bank loans	The group consists of all instruments that make up loans from banks: <ul style="list-style-type: none"> • Bank loans excl. credit • Credit excl. credit-card debt • Credit-card debt
1.1.1 Bank loans excl. credit	No grouping of instruments. Is equal to the instrument: <ul style="list-style-type: none"> • Bank loans excl. credit
1.1.2 Credit	The group consists of the two instruments for credit in banks: <ul style="list-style-type: none"> • Credit excl. credit-card debt • Credit-card debt
1.1.2.1 Credit excl. credit-card debt	No grouping of instruments. Is equal to the instrument: <ul style="list-style-type: none"> • Credit excl. credit-card debt
1.1.2.2. Credit-card debt	No grouping of instruments. Is equal to the instrument: <ul style="list-style-type: none"> • Credit-card debt
1.2. Mortgage loans	No grouping of instruments. Is equal to the instrument: <ul style="list-style-type: none"> • Mortgage loans
2. All bank and mortgage loans excl. credit	The group consists of two instruments: <ul style="list-style-type: none"> • Bank loans excl. credit • Mortgage loans

Methodology

- *Calculated per borrower*: Raw data for the table is grouped on the borrower-level. The derived consequences of this method are illustrated in the following examples:
 - A borrower has multiple loans of the same type, e.g. 2 credit-card loans with a debt of kr. 1,000 and kr. 20,000 respectively. The debt is aggregated per borrower therefore the borrower will have a credit-card debt of kr. 21,000. The two individual loans are not included in the resulting statistic, only the individual borrowers are.
 - Two borrowers have a joint loan, e.g. a mortgage loan of kr. 1 million. Since the borrowers are jointly liable

the debt is shared between them. This results in each of the two borrowers having a debt of kr. 500,000.

- A borrower has 3 loans, e.g. a mortgage loan of kr. 1 million and two bank loans excl. credit of kr. 10,000 and kr. 250,000 respectively. In this example the borrower will be counted twice. Once for the mortgage loan of kr. 1 million and once for the two bank loans excl. credit with a total debt of kr. 260,000.
- *Calculated per loan:* Raw data for the table is based on each individual loan. This implies that the methodology exclusively considers all existing loans and doesn't take the number of borrowers behind the loans into account. The derived consequences are illustrated in the following examples:
 - Two people have a joint mortgage loan of kr. 2 million in a house for which they are jointly liable. The loan is counted once with a debt of kr. 2 million in the resulting statistic.
 - A corporation has 20 credit-cards with varying debt. These are included as 20 individual loans with varying levels of debt in the resulting statistic.

Example	Calculated per borrower	Calculated per loan
Two people are jointly liable for a mortgage loan of kr. 2 million.	2 borrowers with a mortgage debt of kr. 1 million each.	1 mortgage loan with a debt of kr. 2 million.
A corporation has 5 credit-cards with debt of kr. 10,000, kr. 20,000, kr. 30,000, kr. 40,000, and kr. 50,000 respectively.	1 borrower with credit-card debt of kr. 150,000.	5 credit-card loans with a debt of 10,000 kr., 20,000, kr. 30,000, kr. 40,000, and kr. 50,000 respectively.
A private customer has 3 loans: a mortgage loan of kr. 1 million and two bank loans excl. credit of kr. 10,000 and kr. 200,000 respectively.	1 borrower with a mortgage debt of kr. 1 million. 1 borrower with bank debt of kr. 210,000.	1 mortgage loan with a debt of kr. 1 million. 2 bank loans with a debt of kr. 10,000 and kr. 200,000 respectively.

Interest rate type

Interest rate type indicates whether a loan has a fixed interest rate or a variable interest rate. The options for this variable are:

- *All interest rate types:* Corresponds to no interest rate type being chosen, i.e. covers loans with fixed and variable interest rate type. *All interest rate types* is not necessarily a sum of *Fixed interest rate* and *Variable interest rate*, as this depends on choices made for other variables.

- For example: *Number of borrowers* for loans with *fixed interest rate* cannot be aggregated with *number of borrowers* with *variable interest rate*, as this poses the risk of double counting since the same borrower can have both a loan with a *fixed interest rate* and a loan with a *variable interest rate*.
- If a borrower has both a loan with a *variable interest rate* and a loan with a *fixed interest rate* the borrower will count as one borrower in each group but will only count as one borrower in the option *All interest rate types*.
- Summation of percentiles is meaningless.
- *Fixed interest rate*: Indicates that the interest rate is fixed for the entire duration of the loan.
- *Variable interest rate*: Indicates that the interest rate varies throughout the duration of the loan.

Sector

The distribution by sector is based on the sector classification set out in accordance with the European System of Accounts (ESA2010). For accounts with Danish residents the distribution by sector and industry is based on Statistics Denmark's Central Business Register (CVR), and the data registered therein concerning the companies' industries and sectors.

1.3 Confidentiality

Descriptions of the criteria for handling confidential information related to the publication are listed here. The criteria are heavily inspired by the confidentiality criteria of Statistics Denmark's Research Service and Danmarks Nationalbank's confidentiality criteria for other statistics.

It must not be possible to identify/obtain information on individual natural persons and legal entities (including the reporting institutes) through publications. Data must be aggregated sufficiently and the following criteria must be kept:

- **Individual criterion for natural persons, counterparty level:** All observations must contain a minimum of 5 universal counterparties (debtors) for a given filtration of data.
- **Individual criterion for legal entities, counterparty level:** All observations must contain a minimum of 5 universal counterparties (debtors) for a given filtration of data.
- **Dominance criterion for legal entities, counterparty level:** The largest counterparties (debtors) must not make up more than 85 per cent of a given filtration of data.
- **Individual criterion, reporter level:** There must be a minimum of 3 reporters for a given filtration of data.
- **Dominance criterion, reporter level:** The two largest reporters must not make up more than 85 per cent of a given filtration of data.

Percentiles are only published if there are at least 500 counterparties in a given filtration of data.

2 TIME

2.1 Reference Period

The statistics are published on a quarterly basis with end of month data. Thus, the 1st quarter contains data for the end of March, the 2nd quarter contains data for the end of June, the 3rd quarter contains data for the end of September, and 4th quarter contains data for the end of December.

2.2 Date of Publication

The statistics are published every quarter on the 50th banking day after the end of the reference period. E.g., data for the 2nd quarter 2024 is published on the 6th of September 2024.

2.3 Punctuality

The statistics are usually published without delay in relation to the scheduled date.

2.4 Frequency

New data is published every quarter.

3 ACCURACY

3.1 Overall Accuracy

The statistics are based on information collected from the largest banks and all mortgage credit institutions in Denmark. (Currently approx. 22 reporting institutes). The published statistics only contain data for Danish counterparties (debtors). The accuracy of the statistics depends on the accuracy and quality of each institute's reporting. The coverage for outstanding nominal amount distributed by sectors is at least 96 per cent. Hence, the overall accuracy of the statistics is considered to be high.

3.2 Sources of Inaccuracy

Danmarks Nationalbank sets out guidelines on how the banks and mortgage credit institutions should carry out their reporting, but there is a risk that reporting institutes interpret the guidelines differently resulting in non-consistent reporting.

3.3 Measures of Accuracy

The statistical uncertainty has not been calculated.

4 COMPARABILITY

4.1 Comparability over Time

The statistics are comparable across time. Quality assurance is carried out continuously which can potentially result in the identification of data errors or shortcomings in the published time series. Minor errors are generally corrected going forward. If large errors are identified, then this may also result in data being corrected retroactively.

Inaccuracies may occur in relation to changes in the reporting guidelines or the population that reports to the Credit Register.

4.2 Comparability with other Statistics

Danmarks Nationalbank also publishes other statistics for banking and mortgage lending. These statistics are based on MFI reports, which are aggregated reports of banks' and mortgage credit institutions' balance sheet items and interest rates. Read more about the sources and methods for the other bank and mortgage bank statistics here: [balances](#) and [interest rates](#).

There are some differences in the definitions used between the reports for the MFI statistics and the reports for the Credit Register. Therefore, the statistics are not completely comparable for the same filtration of the data.

The distribution by sector, i.e. the allocation of debt to various sectors, differs between the MFI statistics and the Credit Register. In the MFI statistics the debt is allocated to a main debtor, and the debt is therefore allocated to the main debtor's sector. In the Credit Register, the debt is corrected for joint liability and can thus be divided between several sectors.

An example could be a loan shared by two persons: a borrower in sector *1410: Households - sole proprietors* and a borrower in sector *1430: Households - employees etc.* In the MFI statistics, the entire debt is assigned to one of the two borrowers, for example, the borrower in sector *1410: Households - sole proprietors*. In the Credit Register, the debt will be corrected for joint liability. This means that unless otherwise reported, half of the debt is attributed to one sector, and the other half of the debt is attributed to the other sector.

4.3 Coherence between Provisional and Final Statistics

The statistics are normally not revised at the same time as the current quarter is published, but revisions may occur.

5 ACCESSIBILITY

5.1 Forms of dissemination

Published quarterly via:

www.nationalbanken.dk/en

<https://nationalbanken.statbank.dk/>

www.statbank.dk

5.2 Basic material: Storage and Usability

Data material is received electronically and stored for further processing. There is no special storage of basic material.

5.3 Documentation

Reporting guidelines for the Credit Register and other technical material are available on Danmarks Nationalbank's website ([link](#)).

5.4 Other Information

No further information is available.

6 SUPPLEMENTARY DOCUMENTATION

None.