# MFI interest rate statistics: note on the enhancements to the calculation of the national weighted average interest rates 

## 1. Introduction

In order to select the reporting agents necessary for the collection and compilation of monetary financial institution (MFI) interest rate (MIR) statistics in line with Regulation ECB/2001/18, amended by Regulation ECB/2009/7 and recast by Regulation ECB/2013/34, national central banks (NCBs) can either apply a census or follow a sampling approach. In the case of a sampling approach, only a selection of MFIs are asked to report data on interest rates on new business and corresponding volumes and on interest rates on outstanding amounts (volumes are derived from corresponding items in MFI balance sheet statistics). NCBs applying a sampling approach are nonetheless required to compile statistics that cover the entire population of MFIs. Against this background, this note describes certain enhancements that have been made to the procedures for the compilation of the MFI interest rate statistics.

NCBs that choose the sampling approach need to suitably stratify the potential reporting population prior to the selection of the actual reporting agents. Having completed the stratification, they then select the reporting agents at random for each stratum ("random sampling") or select the largest institutions within each stratum ("large institutions approach"). To estimate interest rates and amounts of new business and interest rates on outstanding amounts for the whole population, NCBs apply expansion, raising or inflation factors. The estimation of the population total is sometimes referred to as grossing-up.

Enhancements to the calculation of the national weighted average interest rates and national total business volumes have been introduced in Annex II, Part 14 of Guideline ECB/2014/15 on monetary and financial statistics ${ }^{1}$. These enhancements have in some cases and for some countries had an impact on aggregated national data and therefore on the euro area aggregates. The enhancements are further explained in the next section.

## 2. Description of the methodological enhancements

The first enhancement relates to the explicit introduction of the option, when selecting the actual reporting agents within each stratum, to select the largest institutions per stratum. This was a common and recognised practice among NCBs prior to its inclusion in the new Guideline ECB/2014/15. The guideline also gives a new formula to calculate the expansion factors when the largest institutions approach is

[^0]followed, as the formula used for the random sampling approach was not appropriate in this context. This formula is given in Annex II, Part 14, paragraph 40 of Guideline ECB/2014/15.

The second enhancement relates to the explicit use of grossed-up volumes for calculating national weighted average interest rates for each instrument category. Where random sampling is used, grossedup amounts are used to weight the corresponding interest rates. Where the largest institutions are selected, rates are aggregated across institutions in the same stratum by weighting by the reported amounts and national aggregates are calculated by applying the grossed-up volumes in each stratum.

## 3. Impact on MFI interest rate statistics

### 3.1 Country data possibly affected

These enhancements apply for data as from December 2014. Only data relating to NCBs following the sampling approach (listed in the table below) may be affected by these new requirements. Of these NCBs, only a few follow the large institutions approach.

## Countries taking the sampling approach:

|  | Country | Type of approach |
| :---: | :--- | :--- |
| 1 | Belgium | Random sampling proportional to size |
| 2 | Germany | Large institutions |
| 3 | Ireland | Large institutions and random sampling proportional to size |
| 4 | Greece | Coverage close to 100\% for the MFI interest rate indicators |
| 5 | Spain | Large institutions, very high coverage |
| 6 | France | For new business indicators, random sampling proportional to size. For outstanding <br> amounts indicators, large institutions |
| 7 | Italy | Large institutions |
| 8 | Lithuania | Large institutions for the first stratum and census for the second, very high coverage |
| 9 | Luxembourg | Coverage close to 100\% for the MFI interest rate indicators |
| 10 | Austria | Large institutions; census for one stratum |
| 11 | Denmark | Large institutions |
| 12 | Hungary | Large institutions for the first stratum, census for the second. |
| 13 | Poland | Large institutions |
| 14 | Sweden | Large institutions; census for one stratum |

In particular Germany, Italy and Sweden reported a sizeable impact from the application of Guideline ECB/2014/15 on some indicators.

## Countries taking the census approach:

## Euro area countries

1. Estonia
2. Cyprus
3. Latvia
4. Malta
5. Netherlands
6. Portugal
7. Slovenia
8. Slovakia
9. Finland

## Non-euro area EU countries

10. Bulgaria
11. Czech Republic
12. Croatia
13. Romania

No information on the applied method of data collection:

1. United Kingdom

### 3.2 Quantitative analysis of the impact on euro area aggregates

A quantitative analysis of the impact of the methodological changes on the euro area aggregates has been carried out ${ }^{2}$ and shows that for most of the euro area MIR indicators the impact is less than 5 basis points for interest rates and less than 5\% change for volumes.

The largest impacts (more than 10 basis points difference for rates and/or 10\% change in volume) are reported in the table below. These results show that the impact is largely limited to loans to households for consumption and for other purposes as well as to loans to sole proprietors. The detailed analysis reveals that the change in methodology has only a medium impact (between 5 and 10 basis points difference for interest rates and/or between 5\% and $10 \%$ change in volume) on loans to non-financial corporations with collateral and/or guarantees over an amount of EUR 1 million. For all other indicators, the impact is very small and therefore not relevant for analytical purposes.

[^1]Table1: largest impacts on the change of methodology

|  | Rates (percentage points) |  |  | Volumes (\% change) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Euro area indicator | average | min | max | average | $\min$ | max |
| New loans to households for consumption |  |  |  |  |  |  |
| - floating rate and up to 1 year initial rate fixation | -0.07 | -0.12 | -0.03 | -2.39\% | -8.65\% | 2.75\% |
| - over 1 and up to 5 years initial rate fixation | 0.08 | 0.03 | 0.16 | 3.93\% | -1.61\% | 6.88\% |
| - over 5 years initial rate fixation | 0.15 | 0.09 | 0.22 | 15.05\% | 5.48\% | 23.33\% |
| - annual percentage rate of charge (APRC) | 0.10 | 0.04 | 0.17 | 7.03\% | 0.75\% | 11.10\% |

New loans to households for other purposes

| - floating rate and up to 1 year initial rate fixation | 0.05 | 0.02 | 0.14 | $-2.86 \%$ | $-10.04 \%$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| - over 1 and up to 5 years initial rate fixation | -0.07 | -0.11 | -0.03 | $-2.93 \%$ | $-6.74 \%$ |
| - over 5 years initial rate fixation period | 0.01 | -0.03 | 0.05 | $-5.96 \%$ | $-12.99 \%$ |


| New loans to sole proprietors and unincorporated partnerships |
| :--- |
| \begin{tabular}{ll\|c|c|c|c|c|c|}
\hline
\end{tabular} |
| - over 1 and up to 5 years initial rate fixation |

impact is less than 5 basis points for interest rates and less than $5 \%$ change for volumes.
impact is between 5 and 10 basis points for interest rates and between $5 \%$ and $10 \%$ change for volumes.
impact is more than 10 basis points for interest rates and more than $10 \%$ change for volumes.

## 4. Where to find data compiled in line with the previous Regulations (ECB/2001/18 and ECB/2009/7)

Data compiled in line with Regulations ECB/2001/18 and ECB/2009/7 up to and including the reference period November 2014 are available on the ECB's website in a zip file on the bank interest rates webpage.

The zip file contains one CSV file per country. Each file contains all MFI interest rate and new business volume data from the reference period January 2003 (and estimated data from January 2000 where available), or June 2010 for the indicators added in Regulation ECB/2009/7, up to the reference period November 2014.

## Annex 1

## Quantitative impact on euro area aggregates

The impact on euro area aggregates is calculated by measuring the difference between the figures calculated using the new methodology and the figures calculated using the old methodology. Average, minimum and maximum differences have been calculated on the basis of monthly data for the period between November 2013 and November 2014.

Differences of more than 10 basis points in absolute value for interest rates or more than $10 \%$ change for volumes are highlighted in red. Differences between 5 and 10 basis points in absolute value for rates or between 5\% and 10\% for volumes are highlighted in yellow. Smaller changes, below 5 basis points for rates and $5 \%$ for volumes, are highlighted in green.

|  | Sector | Type of instrument | Original maturity / period of notice / initial rate fixation |  |  | Rates (percentage points) |  |  | Volumes (\% change) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Series key | \# | avg | min | max | avg | min | max |
| Deposits outstanding in EUR | from households ${ }^{3}$ | with an agreed maturity | up to 2 years | MIR.M.U2.B.L22.L.R.A.2250.EUR.O | 1 | $\begin{array}{r} -0.01 \\ 0.02 \end{array}$ | $\begin{gathered} -0.01 \\ 0.02 \end{gathered}$ | -0.01 | 0.00\% | 0.00\% | 0.00\% |
|  |  |  | over 2 years | MIR.M.U2.B.L22.H.R.A.2250.EUR.O | 2 |  |  | 0.03 | $0.00 \%$ | 0.00\% | 0.00\% |
|  | from non-financial corporations | with an agreed maturity | up to 2 years | MIR.M.U2.B.L22.L.R.A.2240.EUR.O | 3 | 0.00 | 0.00 | 0.00 | $0.00 \%$ | -0.01\% | 0.00\% |
|  |  |  | over 2 years | MIR.M.U2.B.L22.H.R.A.2240.EUR.O | 4 | -0.02 | $\begin{array}{r} -0.02 \\ 0.00 \\ \hline \end{array}$ | -0.01 | $\begin{aligned} & 0.00 \% \\ & 0.00 \% \end{aligned}$ | $\begin{aligned} & 0.00 \% \\ & 0.00 \% \end{aligned}$ | $\begin{aligned} & \text { 0.03\% } \\ & \text { 0.00\% } \end{aligned}$ |
|  | repos |  |  | MIR.M.U2.B.L24.A.R.A.2230.EUR.O | 5 | 0.04 |  | 0.09 |  |  |  |
| Loans outstanding in EUR | to households ${ }^{3}$ | for house purchase | up to 1 year | MIR.M.U2.B.A22.F.R.A.2250.EUR.O | 6 |  | -0.05 | -0.01 |  | 0.00\% | 0.00\% |
|  |  |  | over 1 and up to 5 years | MIR.M.U2.B.A22.I.R.A.2250.EUR.O | 7 | -0.02 -0.05 | $-0.06$ | $-0.04$ | $0.00 \%$ | 0.00\% | 0.00\% |
|  |  |  | over 5 years | MIR.M.U2.B.A22.J.R.A.2250.EUR.O | 8 | -0.01 | -0.01 | -0.01 | 0.00\% | 0.00\% | 0.00\% |
|  |  | for consumption and other purposes | up to 1 year | MIR.M.U2.B.A25.F.R.A. $2250 . E U R .0$ | 9 | 0.08 | 0.07 | 0.09 | 0.00\% | 0.00\% | 0.00\% |
|  |  |  | over 1 and up to 5 years | MIR.M.U2.B.A25.I.R.A.2250.EUR.O | 10 | -0.01 | -0.01 | 0.00 | 0.00\% | 0.00\% | 0.00\% |
|  |  |  | over 5 years | MIR.M.U2.B.A25.J.R.A.2250.EUR.O | 11 | -0.05 | -0.06 | -0.05 | 0.00\% | 0.00\% | 0.00\% |
|  | to non-financial corporations |  | up to 1 year | MIR.M.U2.B.A20.F.R.A. $2240 . E U R .0$ | 12 | $\begin{array}{r} 0.03 \\ 0.01 \\ 0.01 \\ \hline \end{array}$ | $\begin{aligned} & 0.02 \\ & 0.01 \\ & 0.01 \\ & \hline \end{aligned}$ | $\begin{array}{r} 0.03 \\ 0.01 \\ 0.01 \\ \hline \end{array}$ | $\begin{aligned} & 0.00 \% \\ & 0.00 \% \\ & 0.00 \% \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.00 \% \\ & 0.00 \% \\ & 0.00 \% \\ & \hline \end{aligned}$ | $\begin{aligned} & 0.00 \% \\ & 0.00 \% \\ & 0.00 \% \end{aligned}$ |
|  |  |  | over 1 and up to 5 years | MIR.M.U2.B.A20.I.R.A.2240.EUR.O | 13 |  |  |  |  |  |  |
|  |  |  | over 5 years | MIR.M.U2.B.A20.J.R.A.2240.EUR.O | 14 |  |  |  |  |  |  |
| New deposits in EUR | from households ${ }^{3}$ | overnight |  | MIR.M.U2.B.L21.A.R.A.2250.EUR.N | 1 | $\begin{aligned} & -0.02 \\ & -0.02 \end{aligned}$ | $\begin{aligned} & -0.02 \\ & -0.02 \end{aligned}$ | $\begin{aligned} & -0.01 \\ & -0.01 \end{aligned}$ | 0.00\%1.72\% | $\begin{aligned} & 0.00 \% \\ & 1.08 \% \end{aligned}$ | $0.00 \%$ |
|  |  | with an agreed maturity | up to 1 year | MIR.M.U2.B.L22.F.R.A.2250.EUR.N | 2 |  |  |  |  |  | 2.31\% |
|  |  |  | over 1 and up to 2 years | MIR.M.U2.B.L22.G.R.A.2250.EUR.N | 3 | -0.02 0.00 | -0.01 | 0.00 | $\begin{aligned} & \text { 0.32\% } \\ & \text { 0.28\% } \end{aligned}$ | $\begin{aligned} & -0.69 \% \\ & -2.55 \% \end{aligned}$ | $\begin{aligned} & 0.85 \% \\ & 1.75 \% \end{aligned}$ |
|  |  |  | over 2 years | MIR.M.U2.B.L22.H.R.A.2250.EUR.N | 4 | 0.00 | -0.01 | 0.02 |  |  |  |
|  |  | redeemable at notice ${ }^{4}$ | up to 3 months (notice) | MIR.M.U2.B.L23.D.R.A.2250.EUR.N | 5 | 0.03 | 0.02 | 0.03 | $\begin{aligned} & 0.28 \% \\ & 0.00 \% \end{aligned}$ |  | 0.00\% |
|  |  |  | over 3 months (notice) | MIR.M.U2.B.L23.E.R.A.2250.EUR.N | 6 | 0.03 | 0.00 | 0.04 | 0.00\% | 0.00\% | 0.00\% |
|  | from non-financial corporations | overnight |  | MIR.M.U2.B.L21.A.R.A.2240.EUR.N | 7 | 0.00 | 0.00 | 0.00 | 0.00\% | 0.00\% | 0.00\% |
|  |  |  | up to 1 year | MIR.M.U2.B.L22.F.R.A.2240.EUR.N | 8 | 0.00 | $\begin{array}{r} 0.00 \\ -0.04 \end{array}$ | 0.01 | 0.46\% | $\begin{aligned} & -1.18 \% \\ & -0.33 \% \end{aligned}$ | 1.50\% |
|  |  | with an agreed maturity | over 1 and up to 2 years | MIR.M.U2.B.L22.G.R.A.2240.EUR.N | 9 | $\begin{array}{r} -0.01 \\ -0.04 \\ 0.05 \\ \hline \hline \end{array}$ |  | $\begin{array}{r} 0.01 \\ 0.00 \\ 0.18 \\ \hline \hline \end{array}$ | $\begin{aligned} & 3.35 \% \\ & 4.24 \% \\ & 1.99 \% \\ & \hline \hline \end{aligned}$ |  | 15.52\% |
|  |  |  | over 2 years | MIR.M.U2.B.L22.H.R.A.2240.EUR.N | 10 |  | $\begin{array}{r} -0.08 \\ 0.00 \\ \hline \end{array}$ |  |  | $-1.67 \%$ $9.15 \%$ <br> $0.23 \%$ $7.09 \%$ |  |
|  | repos |  |  | MIR.M.U2.B.L24.A.R.A.2230.EUR.N | 11 |  |  |  |  |  |  |  |

[^2]${ }^{4}$ For this instrument category, households and non-financial corporations are merged and allocated to the household sector, since it owns about $98 \%$ of the outstanding amount of deposits redeemable at notice in all euro area countries combined.

${ }^{5}$ For this instrument category, the concept of new business is extended to the whole stock, i.e. to outstanding amounts.
${ }^{6}$ Excluding bank overdrafts.
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|  |  |  |  |  |  | Rates (percentagepoints) |  |  | Volumes (\% change) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Sector | Type of instrument | Original maturity / period of notice / initial rate fixation | Series key | \# | avg | min | max | avg | min | max |
|  |  |  | floating rate and up to 1 year initial rate fixation | MIR.M.U2.B.A2BC.F.R.A.2250.EUR.N | 55 | 0.00 | -0.04 | 0.12 | -0.65\% | -8.07\% | 1.74\% |
|  |  | for consumption | over 1 and up to 5 years initial rate fixation | MIR.M.U2.B.A2BC.I.R.A.2250.EUR.N | 56 | -0.01 | -0.11 | 0.42 | -4.36\% | -33.44\% | 1.58\% |
|  |  |  | over 5 years initial rate fixation | MIR.M.U2.B.A2BC.J.R.A.2250.EUR.N | 57 | 0.06 | -0.10 | 0.79 | -5.80\% | -44.63\% | 2.17\% |
|  |  |  | floating rate and up to 1 year initial rate fixation | MIR.M.U2.B.A2CC.F.R.A.2250.EUR.N | 58 | -0.01 | -0.02 | 0.04 | 0.44\% | -0.80\% | 1.12\% |
|  | to households ${ }^{3}$ | for house purchase | over 1 and up to 5 years initial rate fixation | MIR.M.U2.B.A2CC.I.R.A.2250.EUR.N | 59 | 0.00 | -0.03 | 0.00 | -1.29\% | -3.01\% | -0.65\% |
|  | guarantees |  | over 5 and up to 10 years initial rate fixation | MIR.M.U2.B.A2CC.O.R.A.2250.EUR.N | 60 | -0.01 | -0.01 | 0.00 | -2.04\% | -2.96\% | -1.26\% |
|  |  |  | over 10 years initial rate fixation | MIR.M.U2.B.A2CC.P.R.A.2250.EUR.N | 61 | -0.01 | -0.02 | 0.00 | -0.14\% | -0.60\% | 0.21\% |
|  |  |  | floating rate and up to 3 months initial rate fixation | MIR.M.U2.B.A2AC.D.R.2.2240.EUR.N | 62 | 0.00 | 0.00 | 0.01 | -0.16\% | -0.62\% | 0.11\% |
|  |  |  | over 3 months and up to 1 year initial rate fixation | MIR.M.U2.B.A2AC.Q.R.2.2240.EUR.N | 63 | 0.00 | -0.01 | 0.00 | 0.33\% | 0.17\% | 0.62\% |
|  |  | up to an amount of | over 1 and up to 3 years initial rate fixation | MIR.M.U2.B.A2AC.R.R.2.2240.EUR.N | 64 | 0.01 | -0.01 | 0.03 | -0.76\% | -1.98\% | 0.22\% |
|  |  | EUR 0.25 million | over 3 and up to 5 years initial rate fixation | MIR.M.U2.B.A2AC.S.R.2.2240.EUR.N | 65 | 0.01 | 0.00 | 0.02 | -1.09\% | -2.14\% | -0.43\% |
|  |  |  | over 5 and up to 10 years initial rate fixation | MIR.M.U2.B.A2AC.O.R.2.2240.EUR.N | 66 | 0.01 | 0.00 | 0.02 | -1.39\% | -3.30\% | -0.72\% |
| Loans ${ }^{6}$ |  |  | over 10 years initial rate fixation | MIR.M.U2.B.A2AC.P.R.2.2240.EUR.N | 67 | 0.01 | 0.00 | 0.02 | -0.79\% | -1.17\% | -0.25\% |
| in EUR | corporations |  | floating rate and up to 3 months initial rate fixation | MIR.M.U2.B.A2AC.D.R.3.2240.EUR.N | 68 | 0.00 | -0.02 | 0.00 | -0.65\% | -1.56\% | -0.02\% |
|  | guarantees |  | over 3 months and up to 1 year initial rate fixation | MIR.M.U2.B.A2AC.Q.R.3.2240.EUR.N | 69 | 0.00 | -0.01 | 0.02 | 1.28\% | 0.66\% | 1.80\% |
|  |  | million | over 1 and up to 3 years initial rate fixation | MIR.M.U2.B.A2AC.R.R.3.2240.EUR.N | 70 | 0.01 | -0.01 | 0.04 | -1.24\% | -3.34\% | 1.05\% |
|  |  | and up to EUR 1 million | over 3 and up to 5 years initial rate fixation | MIR.M.U2.B.A2AC.S.R.3.2240.EUR.N | 71 | 0.00 | -0.02 | 0.04 | -0.51\% | -3.98\% | 1.57\% |
|  |  |  | over 5 and up to 10 years initial rate fixation | MIR.M.U2.B.A2AC.O.R.3.2240.EUR.N | 72 | 0.02 | 0.01 | 0.04 | -2.02\% | -9.78\% | 1.80\% |
|  |  |  | over 10 years initial rate fixation | MIR.M.U2.B.A2AC.P.R.3.2240.EUR.N | 73 | 0.01 | -0.02 | 0.02 | -0.99\% | -2.69\% | 0.88\% |
|  |  |  | floating rate and up to 3 months initial rate fixation | MIR.M.U2.B.A2AC.D.R.1.2240.EUR.N | 74 | 0.00 | -0.02 | 0.00 | 0.59\% | -0.19\% | 0.98\% |
|  |  | loans for other purposes | over 3 months and up to 1 year initial rate fixation | MIR.M.U2.B.A2AC.Q.R.1.2240.EUR.N | 75 | 0.00 | -0.02 | 0.01 | 0.45\% | -5.43\% | 4.06\% |
|  |  |  | over 1 and up to 3 years initial rate fixation | MIR.M.U2.B.A2AC.R.R.1.2240.EUR.N | 76 | -0.01 | -0.05 | 0.10 | 1.97\% | -10.72\% | 7.82\% |
|  |  |  | over 3 and up to 5 years initial rate fixation | MIR.M.U2.B.A2AC.S.R.1.2240.EUR.N | 77 | -0.03 | -0.08 | 0.01 | 6.54\% | 1.01\% | 14.87\% |
|  |  |  | over 5 and up to 10 years initial rate fixation | MIR.M.U2.B.A2AC.O.R.1.2240.EUR.N | 78 | 0.00 | -0.06 | 0.05 | 2.15\% | -15.23\% | 9.72\% |
|  |  |  | over 10 years initial rate fixation | MIR.M.U2.B.A2AC.P.R.1.2240.EUR.N | 79 | 0.00 | -0.03 | 0.05 | -0.15\% | -9.92\% | 4.83\% |




[^0]:    ${ }^{1}$ Guideline ECB/2014/15 applies as of 1 January 2015 for the reference period December 2014 for MFI interest rate statistics.

[^1]:    ${ }^{2}$ See Annex 1.

[^2]:    ${ }^{3}$ Including non-profit institutions serving households, except for the sole proprietors and unincorporated partnerships item which is part of the household sub-sector only.

