BANQUE CENTRALE DU LUXEMBOURG
EUROSYSTÈME

Report AnaCredit

Methodology used for the comparison between "AnaCredit" and S 1.1/ S 1.5 (BSI/MIR) reports from 2023/12 onwards

Version 3.~~1~~2

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Summary of versions

Version	Date	Comments
1.0.0	30 November 2020	Initial Version
1.0.1	23 February 2021	Update of the definitions of the aggregates Minor update on the “Maturity” calculation
1.0.2	5 August 2021	The flag STTLD_FLG has been added to the BSI instruments identification flags
1.0.3	14 March 2022	Minor general update
1.0.4	1 June 2022	Update of the DQI calculation of the BSI comparison
2.0	22 June 2022	Update of the DQI calculation of the BSI comparison
3.0	13 November 2023	Small updates and introduction of flag “DBTR_RIAD_FND” Introduction of new MIR comparison Update of the DQI calculation
3.1	5 February 2024	Minor update on IS_FRBRN_UNDR_MRKT_CNDTNS Update of the deadline for any corrections
3.2	28 February 2024	Minor update on IS_FRBRN_UNDR_MRKT_CNDTNS

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1 Introduction

The European Central Bank (ECB) and the national central banks (NCB) have introduced a quarterly comparison report between AnaCredit and the balance sheet items report (BSI / S 1.1). The main objective of these reports consists in evaluating the consistency between the reports and in verifying the completeness of AnaCredit data.

From 2021, the comparison report applies to all reporting agents reporting BSI data to the BCL. Moreover, from December 2023, a new comparison report between AnaCredit and interest rate data (MIR / S 1.5) has been put in place as well[1].

In this context, the BCL wishes to inform its reporting agents of any inconsistencies detected in order to anticipate their corrections. It is important to note that the ECB relies on the reference data of the RIAD database for the classification of counterparties. It is therefore conceivable that DQIs considered acceptable at the BCL are not acceptable at the ECB. This discrepancy could possibly require a resubmission of the reporting agent.

2 Methodology

2.1 Basic principles

The comparison between AnaCredit and BSI reports comprises fourteen items ("aggregates") and one total item ("Total EA loans"). As for the comparison with MIR data, three items within the "For action" part have to be corrected, while 43 sub-aggregates are currently provided for information only. Data quality checks via data quality indicators (DQIs) on each of the items for the BSI comparison are applied from the reference month of March 2021 onwards. The "For action" items of the MIR comparison have to be corrected from December 2023 onwards.

The level of consistency of AnaCredit reports compared to BSI / S 1.1 and MIR / S 1.5 reports is assessed based on a DQI calculated by the BCL. The table below summarizes the qualitative requirements according to the reference periods.

Items	From December 2023
BSI item "Total EA loans"	DQI < 0,75%
BSI items 1-12	DQI < 2,5%
MIR items "For action"	DQI < 0,75%
MIR items "For information"	/

[1] The comparison report between AnaCredit and MIR will only be sent to banks submitting the S 1.5 report in Luxembourg.

The DQI is calculated as the amount affected divided by the total outstanding nominal amount of the observed agent. Please find below the calculations for the different DQIs:

$$BSI/MIR\ DQI\ for\ Volumes = \frac{\text{abs(AnaCredit\_Amount} - \text{BSI\_Amount)}}{\text{Outstanding nominal amount of OA}}$$

$$MIR\ DQI\ for\ Interest\ Rates = \frac{\text{MAX\_V} * \min\left(\frac{\text{abs(AnaCredit\_IR} - \text{MIR\_IR)}}{0{,}01}, 1\right)}{\text{Outstanding nominal amount of OA}}$$

, where MAX_V = max(AnaCredit_Amount, MIR_Amount)

IR=Interest rate

OA=Observed agent

Amount= respective aggregable balance amounts

We would like to remind you that all attributes and acceptable values are described more in detail in manual part II.

Please note that the threshold of 25 kEUR applied in AnaCredit does not exist in S 1.1 reporting. Therefore, the amount reported in AnaCredit should never be greater than the amount shown in report S 1.1.

2.2 Comparison with BSI (S 1.1)

2.2.1 Calculation method

The aggregates calculated for the comparison of AnaCredit and BSI data are described in this chapter.

AnaCredit instruments are broken down based on the following attributes:

- Country (CNTRY), where:
  - CNTRY_OBSRVD_AGNT = the country of residence of the observed agent
  - CNTRY_DBTR = the country of residence of the debtor
- Institutional sector (INSTTTNL_SCTR), where:
  - INSTTTNL_SCTR_DBTR = the debtor's institutional sector

- Original maturity (MTRTY), where:

```
IF NEVS_DT_LGL_FNL_MTRTY = "0" THEN DO;
        IF TYP_INSTRMNT IN {"Revolving credit other than overdrafts and credit card debt", "Overdraft", "Credit
        card debt", "Credit lines other than revolving credit"} OR (TYP_INSTRMNT = "Trade receivables" AND
        CNTRY_OA in {"FR", "IT", "AT"} ) OR (TYP_INSTRMNT ="Reverse repurchase agreements" AND
        CNTRY_OA in ("AT")) OR RPYMNT_RGHTS = "On demand or short notice" THEN MTRTY = "Up to 1
        year";
        ELSE MTRTY = "Above 5 years";
        END;
ELSE DO;
        IF TYP_INSTRMNT in {"Revolving credit other than overdrafts and credit card debt", "Overdraft", "Credit
        card debt", "Credit lines other than revolving credit"} AND CNTRY_OA in ("LT") THEN MTRTY = "Up to 1
        year";
        ELSE IF CNTRY_OA in ("DE") THEN DO;
                ELSE IF DT_LGL_FNL_MTRTY - DT_STTLMNT < 1 year THEN MTRTY = "Up to 1 year";
                ELSE IF DT_LGL_FNL_MTRTY - DT_STTLMNT < 5 years THEN MTRTY = "Over 1 year and up to
                5 years";
                ELSE IF DT_LGL_FNL_MTRTY - DT_STTLMNT >= 5 years THEN MTRTY = "Above 5 years";
                ELSE MTRTY = ".";
        END;
        ELSE DO;
                ELSE IF DT_LGL_FNL_MTRTY - DT_STTLMNT <= 1 year THEN MTRTY = "Up to 1 year";
                ELSE IF DT_LGL_FNL_MTRTY - DT_STTLMNT <= 5 years THEN MTRTY = "Over 1 year and up
                to 5 years";
                ELSE IF DT_LGL_FNL_MTRTY - DT_STTLMNT > 5 years THEN MTRTY = "Above 5 years";
                ELSE MTRTY = ".";
        END;
END;
```

- Type of instrument (TYP_INSTRMNT)

Similarly, the BSI sub-aggregates are aggregated taking into account the following variables:

- Country
- Currency
- Sector
- Maturity

The sum of BSI aggregable balance of instruments granted to counterparties resident in the euro area ("Total EA loans") corresponds to the sum of the 14 aggregates mentioned above minus aggregates 1.1 and 12.

Thus, the AnaCredit-BSI comparison will include the following 14 aggregates[2]:

Item	Description	AnaCredit	S 1.1 (BSI)			
		Condition	Country	Currency	Sector	Maturity
1.	Loans to domestic MFIs	CNTRY_DBTR = CNTRY_OBSRVD_AGNT **AND** INSTTTNL_SCTR_DBTR IN {"S.121", "S.122", "S.123"}	LU	EUR XX2	31000 32100 32200 33000	I000-01A I01A-02A I02A-05A I05A-999
1.1	Loans to domestic central banks	CNTRY_DBTR = CNTRY_OBSRVD_AGNT **AND** INSTTTNL_SCTR_DBTR = "S.121"	LU	EUR XX2	31000	I000-01A I01A-02A I02A-05A I05A-999
2.	Loans to domestic general government	CNTRY_DBTR = CNTRY_OBSRVD_AGNT **AND** INSTTTNL_SCTR_DBTR IN {"S.1311", "S.1312", "S.1313", "S.1314"}	LU	EUR XX2	11000 12000	I000-01A I01A-02A I02A-05A I05A-999
4.1	Loans to domestic NFCs, up to 1 year	CNTRY_DBTR. = CNTRY_OBSRVD_AGNT **AND** INSTTTNL_SCTR_DBTR = "S11" **AND** MTRTY = "Up to 1 year"	LU	EUR XX2	21000	I000-01A
4.2	Loans to domestic NFCs, over 1 year and up to 5 years	CNTRY_DBTR = CNTRY_OBSRVD_AGNT **AND** INSTTTNL_SCTR_DBTR = "S11" **AND** MTRTY = "Over 1 year and up to 5 years"	LU	EUR XX2	21000	I01A-02A I02A-05A

[2] Loans to debtors belonging to the institutional sector S.15 are excluded from the comparison.

4.3	Loans to domestic NFCs, over 5 years	CNTRY_DBTR = CNTRY_OBSRVD_AGNT **AND** INSTTTNL_SCTR_DBTR = "S11" **AND** MTRTY = "Above 5 years"	LU	EUR XX2	21000	I05A-999
5.	Loans to other euro area MFIs (excluding Luxembourg)	CNTRY_DBTR <> CNTRY_OBSRVD_AGNT **AND** (CNTRY_DBTR IN {Euro area countries}) **AND** INSTTTNL_SCTR_DBTR IN {"S.121", "S.122", "S.123"}	X3	EUR XX2	31000 32100 32200 33000	I000-01A I01A-02A I02A-05A I05A-999
6.	Loans to other euro area general government (excluding Luxembourg)	CNTRY_DBTR <> CNTRY_OBSRVD_AGNT **AND** (CNTRY_DBTR IN {Euro area countries}) **AND** INSTTTNL_SCTR_DBTR IN {"S.1311", "S.1312", "S.1313", "S.1314"}	X3	EUR XX2	11000 12000	I000-01A I01A-02A I02A-05A I05A-999
8.1	Loans to other euro area NFCs (excluding Luxembourg), up to 1 year	CNTRY_DBTR <> CNTRY_OBSRVD_AGNT **AND** CNTRY_DBTR IN {Euro area countries} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** MTRTY = "Up to 1 year"	X3	EUR XX2	21000	I000-01A
8.2	Loans to other euro area NFCs (excluding Luxembourg), over 1 year and up to 5 years	CNTRY_DBTR <> CNTRY_OBSRVD_AGNT **AND** CNTRY_DBTR IN {Euro area countries} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** MTRTY = "Over 1 year and up to 5 years"	X3	EUR XX2	21000	I01A-02A I02A-05A
8.3	Loans to other euro area NFCs (excluding Luxembourg), over 5 years	CNTRY_DBTR <> CNTRY_OBSRVD_AGNT **AND** CNTRY_DBTR IN {Euro area countries} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** MTRTY = "Above 5 years"	X3	EUR XX2	21000	I05A-999

9.	Loans to euro area OFIs and non-MMF investment funds	CNTRY_DBTR IN {Euro area countries} **AND** INSTTTNL_SCTR_DBTR IN {“S.124”, “S.125”, “S.126”, “S.127”}	LU X3	EUR XX2	41000 42000 43000 44000	I000-01A I01A-02A I02A-05A I05A-999
10.	Loans to EA ICPFs (euro area insurance corporations and pension funds)	CNTRY_DBTR IN {Euro area countries} **AND** INSTTTNL_SCTR_DBTR IN {“S.128”, “S.129”}	LU X3	EUR XX2	45000 46000	I000-01A I01A-02A I02A-05A I05A-999
12.	Loans to the rest of the world	CNTRY_DBTR NOT IN {Euro area countries}	X4	EUR XX2	11000 12000 21000 31000 32100 32200 33000 40000	I000-01A I01A-02A I02A-05A I05A-999

2.2.2 Instruments excluded from BSI calculation

It is important to note that only instruments eligible for BSI and meeting a certain level of quality are considered in the calculation of aggregates. In this regard, flags have been created in order to i) identify BSI instruments and to ii) check the data quality. The methodology is described in detail below.

2.2.2.1 BSI instruments identification flags

Four flags are calculated to determine the eligibility of instruments for the calculation of BSI aggregates and they can take the value of:

- 1 (included for the calculation of BSI aggregates)
- 0 (excluded for the calculation of BSI aggregates)
- -1 (attribute missing)

Instruments for which at least one flag equals 0 or -1 are excluded from the calculation of the aggregates. These instruments are therefore listed in the excluded instruments sheet. The data should be checked and, if necessary, corrected.

- IS_NOT_FDCRY

  Only non-fiduciary instruments are considered in the calculation of BSI aggregates.

  ```
  IF FDCRY = "Non-fiduciary instrument"
  THEN IS_NOT_FDCRY = 1;
  ELSE IF FDCRY = "Fiduciary instrument";
  THEN IS_NOT_FDCRY = 0;
  ELSE IS_NOT_FDCRY = -1;
  ```

- RCGNTN_FLG

  Fully derecognized instruments are not considered in the calculation of BSI aggregates, except for "intra-company" instruments.

  ```
  IF RCGNTN_STTS in {"Entirely recognised", "Recognised to the extent of the institution's continuing involvement"}
  THEN RCGNTN_FLG = 1;
  ELSE IF RCGNTN_STTS = "Entirely derecognised"
  THEN RCGNTN_FLG = 0;
  ELSE RCGNTN  FLG = -1;
  ```

- INTR_CMPNY_FLG

  All “intra-company” instruments are included in the calculation of the BSI aggregates, including fully derecognized instruments.

  IF HD_OFFC_UNDRT_ID_DBTR is not NULL **AND** HD_OFFC_UNDRT_ID_DBTR = HD_OFFC_UNDRT_ID_OA

  THEN INTR_CMPNY_FLG = 1;

  ELSE INTR_CMPNY_FLG = 0;

  Where:

  - HD_OFFC_UNDRT_ID_DBTR = debtor’s head office identifier
  - HD_OFFC_UNDRT_ID_OA = observed agent’s head office identifier

- NON_TRDTNLLY_SEC_FLG

  This flag on traditional securitisation does not apply to Luxembourgish observed agents.

  IF CNTRY_OBSRVD_AGNT = “Ireland” **AND** TYP_SCRTSTN = “”

  THEN NON_TRDTNLLY_SEC_FLG = -1;

  ELSE IF CNTRY_OBSRVD_AGNT = “Ireland” **AND** TYP_SCRTSTN = “Traditional securitisation”

  THEN NON_TRDTNLLY_SEC_FLG = 0;

  ELSE NON_TRDTNLLY_SEC_FLG = 1;

- STTLD_FLG

  Instruments, which have not been settled, are not considered in the calculation of BSI aggregates.

  IF DT_STTLMNT <= DT_RFRNC **AND** NEVS_DT_STTLMNT <> “0”

  THEN STTLD_FLG = 1;

  ELSE STTLD_FLG = 0;

Finally, the flag on the BSI eligibility of an instrument in AnaCredit is calculated taking into account the results of the four flags described above:

```
IF IS_NOT_FDCRY = 1 AND NON_TRDTNLLY_SEC_FLG = 1 AND (RCGNTN_FLG = 1 OR
INTR_CMPNY_FLG = 1) AND STTLD_FLG = 1

THEN IS_BSI_INSTRMNT = 1;

ELSE IS_BSI_INSTRMNT = 0;
```

All instruments whose flag “IS_BSI_INSTRMNT” is equal to 1 are taken into account when calculating BSI aggregates. Conversely, instruments with a flag equal to 0 or -1 are excluded from the calculation. These are listed in the feedback “BSI_EXC_INSTRMNT”.

2.2.2.2 Data quality flags

Similar to the BSI instrument identification flags described above, the data quality flags are first calculated individually before they are added to the global flag. The latter indicates whether the data quality of an instrument is sufficient to be included in the BSI aggregates. The data quality flags can take three values:

- 1 (the quality is good)

  No correction is expected.

- 0 (quality cannot be measured)

  It is up to the reporting agent to verify the data if a difference is noted in the DQI.

- -1 (an error was detected)

Instruments for which at least one flag equals 0 or -1 are excluded from the calculation of the aggregates. These instruments are therefore listed in the excluded instruments sheet. The data should be checked and, if necessary, corrected.

- IS_ACCNTNG_RPRTD

  This flag checks if accounting data has been reported.

```
IF INSTRMNT.INSTRMNT_ID EXISTS IN ACCNTNG.INSTRMNT_ID

THEN IS_ACCNTNG_RPRTD = 1;

ELSE IS_ACCNTNG_RPRTD = -1;
```

- IS_PRTLY_TRNSFRD

  This flag checks if the instrument has been partially transferred.

  IF OTSTNDNG_NMNL_AMNT > TRNSFRRD_AMNT > 0

  THEN IS_PRTLY_TRNSFRD = 1;

  ELSE IF OTSTNDNG_NMNL_AMNT = TRNSFRRD_AMNT **OR** TRNSFRRD_AMNT = 0 **OR** TRNSFRRD_AMNT is NULL

  THEN IS_PRTLY_TRNSFRD = 0;

  ELSE IS_PRTLY_TRNSFRD = -1;

- IS_JNT_LBLTY_RPRTD_ALL

  This flag checks whether joint liabilities have been reported for each pair instrument-debtor.

  IF JNT_LBLTY_AMNT is not NULL

  THEN IS_JNT_LBLTY_RPRTD_ALL_PRP = 1;

  ELSE IS_JNT_LBLTY_RPRTD_ALL_PRP = -1;

  The flag below checks that if no joint liability is reported, the number of debtors linked to the instrument is equal to 1. If this condition is not met (i.e. more than one debtor is linked to the instrument), then the flag is equal to -1.

  IF min(IS_JNT_LBLTY_RPRTD_ALL_PRP) = 1

  THEN IS_JNT_LBLTY_RPRTD_ALL = 1;

  ELSE IF min(IS_JNT_LBLTY_RPRTD_ALL_PRP) = -1 **AND** NMBR_DBTRS = 1

  THEN IS_JNT_LBLTY_RPRTD_ALL = 0;

  ELSE IS_JNT_LBLTY_RPRTD_ALL = -1;

  Where:

  - NMBR_DBTRS = the number of debtors in an instrument

- IS_JNT_LBLTY_CMPLT

  This flag checks if the sum of joint liability amount is greater or equal to the outstanding nominal amount for multi-debtor instruments.

```
IF NMBR_DBTRS > 1 AND IS_JNT_LBLTY_RPRTD_ALL =-1 THEN IS_JNT_LBLTY_CMPLT = -1;
ELSE IF NMBR_DBTRS > 1 AND sum(JNT_LBLTY_AMNT) => OTSTNDNG_NMNL_AMNT
THEN IS_JNT_LBLTY_CMPLT = 1;
ELSE IF  NMBR_DBTRS > 1 AND sum(JNT_LBLTY_AMNT) < OTSTNDNG_NMNL_AMNT
THEN IS_JNT_LBLTY_CMPLT = 0;
```

- IS_JNT_LBLTY_CN_ONA

  This flag checks whether the maximum amount of all joint liabilities of an instrument is less than or equal to the outstanding nominal amount.

```
IF max(JNT_LBLTY_AMNT) <= OTSTNDNG_NMNL_AMNT THEN IS_JNT_LBLTY_CN_ONA = 1;
ELSE IS_JNT_LBLTY_CN_ONA = -1;
```

- IS_DBTR_NOT_THE_OA

  This flag verifies that the observed agent[3] is not the debtor of the instrument.

```
IF DBTR_RIAD <> OBSRVD_AGNT_CD THEN IS_DBTR_NOT_THE_OA = 1;
ELSE IS_DBTR_NOT_THE_OA = -1;
```

  Where:

  - DBTR_RIAD = RIAD identifier of the debtor

- IS_INSTTTNL_SCTR_RPRTD

  This flag checks whether the institutional sector of the debtor has been reported.

```
IF INSTTTNL_SCTR_DBTR is not NULL THEN IS_INSTTTNL_SCTR_RPRTD = 1;
ELSE IS_INSTTTNL_SCTR_RPRTD = -1;
```

  Where:

  - INSTTTNL_SCTR_DBTR = institutional sector of the debtor

[3] The attribute “OBSRVD_AGNT_CD” depicts the RIAD identifier of the observed agent.

- IS_DBTR_CNTRY_RPRTD

  This flag checks whether the country of residence of the debtor has been reported.

  IF CNTRY_DBTR is not NULL **THEN** IS_DBTR_CNTRY_RPRTD = 1;
  ELSE IS_DBTR_CNTRY_RPRTD = -1;

  Where:

  – CNTRY_DBTR = country of residence of the debtor

- IS_DT_LGL_FNL_MTRTY_RPRTD

  This flag checks whether the date of legal final maturity has been reported.

  IF DT_LGL_FNL_MTRTY is NULL **AND** NEVS_DT_LGL_FNL_MTRTY is NULL
  THEN IS_DT_LGL_FNL_MTRTY_RPRTD = -1;
  ELSE IS_DT_LGL_FNL_MTRTY_RPRTD = 1;

All of the flags described above are used to identify quality issues. If one of these flags is equal to -1, the data quality for a specific instrument is insufficient and the instrument is excluded from the BSI calculation. The data quality is summarized in the following flag:

IF IS_ACCNTNG_RPRTD = -1 **OR** IS_PRTLY_TRNSFRD = -1
OR IS_JNT_LBLTY_RPRTD_ALL = -1 **OR** IS_JNT_LBLTY_CMPLT = -1
OR IS_JNT_LBLTY_CN_ONA = -1 **OR** IS_DBTR_NOT_THE_OA = -1
OR IS_INSTTTNL_SCTR_RPRTD = -1 **OR** IS_DBTR_CNTRY_RPRTD = -1
OR IS_DT_LGL_FNL_MTRTY_RPRTD = -1 **OR** VLDTN_RLS = -1
THEN DQ_FLG = -1;
ELSE DQ_FLG = 1;

In addition to the flags calculated above, some validation rules are also provided in the form of flags (grouped under “VLDTN_RLS” in the box above). This is the result of data quality checks on attributes necessary for the mapping of a counterparty to RIAD. If one of these flags is equal to -1, then the counterparty cannot be associated with a counterparty in RIAD and the instruments linked to these counterparties are excluded from the calculation of the aggregates.

Finally, the feedback sheet “BSI_EXC_INSTRMNT” also contains the flag “DBTR_RIAD_FND”, tells the reporting agent if a RIAD code has been found for the counterparty or not. In the case where no code was found, the reporting agent should verify the identification of the counterparty and in the case where no error is spotted contact sig@bcl.lu, with the concerned counterparty.

2.2.3 Solution indications

There are many sources of inconsistency between reports. Below are listed some recurring errors.

1 Insufficient data quality

Insufficient data quality is highlighted by the flags in chapter 2.2.2.2. Data with errors should be analysed first. As a first step, it is recommended to focus on instruments with a high outstanding nominal amount. In fact, the more the quality of an instrument with a high outstanding amount improves, the greater the impact on the DQI. It is for this reason that the instruments are sorted in descending order compared to the outstanding nominal amount in the feedback "BSI_EXC_INSTRMNT".

The most frequent quality deficiencies are as follows:

- Country not reported
- National identifier not reported
- National identifier type not reported and/or inconsistent national identifier
- The sum of the outstanding nominal amounts is equal to the sum of the transferred amounts

2 The portfolio is incomplete (non-reported instruments)

If the total BSI aggregable balance of instruments listed in the excluded instruments sheet does not explain the difference between BSI and AnaCredit aggregates, then it is very likely that part of the AnaCredit portfolio has not been reported.

However, inconsistencies can be detected without requiring corrections. These are mainly reporting agents whose portfolio contains a large number of instruments with an outstanding nominal amount of less than 25 kEUR.

We would also like to remind you that intra-group and interbank instruments as well as positions with the BCL must be reported in AnaCredit.

3 Some counterparties were broken down incorrectly (diverging institutional sector or country)

When inconsistencies detected at the level of the sub-aggregates are substantial while the totals are very similar, it is very likely that the classification of the counterparties is not correct (e.g. a non-financial corporation reported with an institutional sector "S.121").

4 Some instruments were broken down incorrectly (diverging maturities)

The maturity of the instruments is calculated by subtracting the settlement date (DT_STTLMNT) from the legal final maturity date (DT_LGL_FNL_MTRTY). If the maturity aggregates (sections 4.1, 4.2, 4.3, 8.1, 8.2 and 8.3) present inconsistencies, we encourage you to check the two corresponding attributes and align them with the deadlines calculated for the BSI report.

2.3 Comparison with MIR (S 1.5)

2.3.1 Calculation method

The AnaCredit-MIR comparison compares the average interest rates, weighted by the BSI aggregable balance[4] for the stock positions, while also looking at the average interest rates for new business loans and its volumes (MIR_AGGRGBL_BLNC_NB[5]):

$$Interest\ Rate\ on\ stock\ postions = \frac{\Sigma(BSI\_AGGRGBL\_BLNC * ANNLSD\_AGGRD\_RT)}{\Sigma(BSI\_AGGRGBL\_BLNC)}$$

$$Interest\ Rate\ on\ new\ business = \frac{\Sigma(MIR\_AGGRGBL\_BLNC\_NB * ANNLSD\_AGGRD\_RT)}{\Sigma(MIR\_AGGRGBL\_BLNC\_NB)}$$

$$Volumes\ of\ new\ business = \Sigma(MIR\_AGGRGBL\_BLNC\_NB)$$

These aggregates are limited to euro-denominated instruments, the debtors of which are non-financial corporations resident in the euro area. Instruments are broken down using the following elements:

- Type of instrument
- Repayment rights
- Maturity
- Amount category
- If the instrument is settled
- If the interest rate is reported
- If it a new business loan
- Initial rate fixation

[4] In its simplest form, the BSI aggregable balance consists of the outstanding nominal amount. The detailed calculation of the aggregable balance can found in annex 4.3 of this document.
[5] Calculation of IMIR_AGGRGBL_BLNC_NEW_BSNSS defined in annex 4.3 of this document.

The table below shows the 3 items, which are to be corrected from 202312 onwards, and the 43 additional items, which are for information (From the S 1.5 Table we consider only the data types AMT and TCA / For AnaCredit we only consider instruments denominated in EUR):

Item	Description	AnaCredit	S 1.5 (MIR)						
		Condition	SSTAB	Country	Rubrique	Secteur	Initial maturity	Initial rate periode	Amount category
1	Interest rate on outstanding amounts: loans to Euro area NFCs	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** STTLD_FLG = "1"	1E	X2	1-002000	21000	I000-01A I01A-05A I05A-999	FIT999-999	Total
2 - 3	New business volumes and interest rate: loans to Euro area NFCs	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1"	3N	X2	1-002000	21000	I999-999	FIT000-03M FIT03M-01A FIT01A-03A FIT03A-05A FIT05A-10A FIT10A-999	AAA BBB CCC
			3N	X2	1-CP2000 1-CD2000 1-RD2000	21000	I999-999	FIT999-999	Total
4	Interest rate on outstanding amounts: loans to Euro area NFCs, Loans up to 1 year	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** STTLD_FLG = "1" **AND** MTRTY = "Up to 1 year"	1E	X2	1-002000	21000	I000-01A	FIT999-999	Total

5	Interest rate on outstanding amounts: loans to Euro area NFCs, Loans of 1 to 5 year	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** STTLD_FLG = "1" **AND** MTRTY = "Above 1 year and up to 5 years"	1E	X2	1-002000	21000	I01A-05A	FIT999-999	Total
6	Interest rate on outstanding amounts: loans to Euro area NFCs, Loans over 5 years	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** STTLD_FLG = "1" **AND** MTRTY = "Above 5 years"	1E	X2	1-002000	21000	I05A-999	FIT999-999	Total
7 - 8	New business volumes and interest rate: loans to Euro area NFCs, Overdrafts	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "1"	3N	X2	1-CP2000 1-CD2000 1-RD2000	21000	I999-999	FIT999-999	Total
9 - 10	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0"	3N	X2	1-002000	21000	I999-999	FIT000-03M FIT03M-01A FIT01A-03A FIT03A-05A FIT05A-10A FIT10A-999	AAA BBB CCC
11 - 12	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2"	3N	X2	1-002000	21000	I999-999	FIT000-03M FIT03M-01A FIT01A-03A FIT03A-05A FIT05A-10A FIT10A-999	AAA

13 - 14	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3"	3N	X2	1-002000	21000	I999-999	FIT000-03M FIT03M-01A FIT01A-03A FIT03A-05A FIT05A-10A FIT10A-999	BBB
15 - 16	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans above EUR 1 mio	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "1"	3N	X2	1-002000	21000	I999-999	FIT000-03M FIT03M-01A FIT01A-03A FIT03A-05A FIT05A-10A FIT10A-999	CCC
17 - 18	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio, Floating rate and up to 3M initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2" **AND** IMIR_AMNT_INTL_RT_FXTN = "D"	3N	X2	1-002000	21000	I999-999	FIT000-03M	AAA
19 - 20	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio, Over 3M and up to 1Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2" **AND** IMIR_AMNT_INTL_RT_FXTN = "Q"	3N	X2	1-002000	21000	I999-999	FIT03M-01A	AAA

21 - 22	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio, Over 1Y and up to 3Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2" **AND** IMIR_AMNT_INTL_RT_FXTN = "R"	3N	X2	1-002000	21000	I999-999	FIT01A-03A	AAA
23 - 24	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio, Over 3Y and up to 5Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2" **AND** IMIR_AMNT_INTL_RT_FXTN = "S"	3N	X2	1-002000	21000	I999-999	FIT03A-05A	AAA
25 - 26	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio, Over 5Y and up to 10Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2" **AND** IMIR_AMNT_INTL_RT_FXTN = "O"	3N	X2	1-002000	21000	I999-999	FIT05A-10A	AAA
27 - 28	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans up EUR 0.25 mio, Over 10Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "2" **AND** IMIR_AMNT_INTL_RT_FXTN = "P"	3N	X2	1-002000	21000	I999-999	FIT10A-999	AAA

29 - 30	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio, Floating rate and up to 3M initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3" **AND** IMIR_AMNT_INTL_RT_FXTN = "D"	3N	X2	1-002000	21000	I999-999	FIT000-03M	BBB
31 - 32	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio, Over 3M and up to 1Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3" **AND** IMIR_AMNT_INTL_RT_FXTN = "Q"	3N	X2	1-002000	21000	I999-999	FIT03M-01A	BBB
33 - 34	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio, Over 1Y and up to 3Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3" **AND** IMIR_AMNT_INTL_RT_FXTN = "R"	3N	X2	1-002000	21000	I999-999	FIT01A-03A	BBB
35 - 36	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio, Over 3Y and up to 5Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3" **AND** IMIR_AMNT_INTL_RT_FXTN = "S"	3N	X2	1-002000	21000	I999-999	FIT03A-05A	BBB

37 - 38	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio, Over 5Y and up to 10Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3" **AND** IMIR_AMNT_INTL_RT_FXTN = "O"	3N	X2	1-002000	21000	I999-999	FIT05A-10A	BBB
39 - 40	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans between EUR 0.25 mio and 1 mio, Over 10Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "3" **AND** IMIR_AMNT_INTL_RT_FXTN = "P"	3N	X2	1-002000	21000	I999-999	FIT10A-999	BBB
41 - 42	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans above EUR 1 mio, Floating rate and up to 1Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "1" **AND** IMIR_AMNT_INTL_RT_FXTN in {"D", "Q"}	3N	X2	1-002000	21000	I999-999	FIT000-03M FIT03M-01A	CCC
43 - 44	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans above EUR 1 mio, Over 1Y and up to 5Y initial rate fixation	CNTRY_DBTR IN {"Euro area"} **AND** INSTTTNL_SCTR_DBTR = "S.11" **AND** IS_IMIR_NEW_BSNSS = "1" **AND** IS_RVLVNG = "0" **AND** IMIR_AMNT_CTGRY = "1" **AND** IMIR_AMNT_INTL_RT_FXTN in {"R", "S"}	3N	X2	1-002000	21000	I999-999	FIT01A-03A FIT03A-05A	CCC

45 - 46	New business volumes and interest rate: loans to Euro area NFCs, other than revolving loans above EUR 1 mio, Over 5Y initial rate fixation	CNTRY_DBTR IN {“Euro area”} **AND** INSTTTNL_SCTR_DBTR = “S.11” **AND** IS_IMIR_NEW_BSNSS = “1” **AND** IS_RVLVNG = “0” **AND** IMIR_AMNT_CTGRY = “1” **AND** IMIR_AMNT_INTL_RT_FXTN = {“O”, “P”}	3N	X2	1-002000	21000	I999-999	FIT05A-10A FIT10A-999	CCC

2.3.2 Instruments excluded from MIR

Similar to the BSI comparison, some of the instruments are not taken into account in the calculation of MIR weighted averages (in addition to the instruments already excluded from the three categories detailed above). The flags calculated in the BSI comparison are also applicable to the MIR comparison.

2.3.2.1 Classifications flags for the MIR comparison

Further variables are calculated below, in order to perform the aggregations.

- IMIR_AMNT_CTGRY
  This variable is considering the outstanding nominal amount, in order to regroup three larger groups of loans according to their amount.

```
IF OTSTNDNG_NMNL_AMNT is NULL THEN IMIR_AMNT_CTGRY = -1;
ELSE IF OTSTNDNG_NMNL_AMNT <= 250'000 THEN IMIR_AMNT_CTGRY = 2;
ELSE IF OTSTNDNG_NMNL_AMNT <= 1'000'000 THEN IMIR_AMNT_CTGRY = 3;
ELSE IMIR_AMNT_CTGRY = 1;
```

- IS_RVLVNG
  This flag is going to find the instrument, which are revolving and as such, can be considered as new business aggregates.

```
IF TYP_INSTRMNT in {"Overdraft", "Credit card debit", "Revolving credit other than overdrafts and credit card debt"} OR (TYP_INSTRMNT = "Deposits other than reverse repurchase agreements" AND RPYMNT_RGHTS = "On demand or short notice") THEN IS_RVLVNG= 1;
ELSE IF TYP_INSTRMNT is NULL OR (TYP_INSTRMNT = "Deposits other than reverse repurchase agreements" AND RPYMNT_RGHTS is NULL) THEN IS_RVLVNG = -1;
ELSE IS_RVLVNG = 0;
```

- IS_INCPTD
  This flag checks that the inception date has been reported and that it is not after the current reference date.

```
IF DT_INCPTN is NULL OR DT_INCPTN > DT_RFRNC THEN IS_INCPTD = -1;
ELSE IS_INCPTD = 1;
```

- IS_FRBRN_UNDR_MRKT_CNDTNS
  This flag identifies instruments, which are forborne.

IF ~~DT_FRBRNC_STTS is NULL **OR**~~ DT_FRBRNC_STTS > DT_RFRNC **OR** (DT_FRBRNC_STTS is not NULL **AND** FRBRNC_STTS is NULL) **OR** (DT_FRBRNC_STTS is NULL **AND** FRBRNC_STTS is not in (NULL, 8)) **THEN** IS_FRBRN_UNDR_MRKT_CNDTNS = -1;

ELSE IF DT_FRBRNC_STTS <= DT_RFRNC **AND** FRBRNC_STTS in {"Forborne: totally or partially refinanced debt", "Forborne: instruments with other modified terms and conditions", "Renegotiated instrument without forbearance measures"} **THEN** IS_FRBRN_UNDR_MRKT_CNDTNS = 1;

ELSE IS_FRBRN_UNDR_MRKT_CNDTNS = 0;

- IS_IMIR_NEW_BSNSS
  This flag represents the new business portfolio of a bank.

IF IS_RVLVNG = "1" **OR** (IS_INCPTD = "1" **AND** Previous_Quarter_DT_RFRNC < DT_INCPTN) **OR** (IS_FRBRN_UNDR_MRKT_CNDTNS = "1" and Previous_Quarter_DT_RFRNC < DT_FRBRNC_STTS) **THEN** IS_IMIR_NEW_BSNSS = 1;

ELSE IF IS_RVLVNG = "-1" **OR** IS_INCPTD = "-1" **OR** IS_FRBRN_UNDR_MRKT_CNDTNS = "-1" **OR** DT_INCPTN > DT_FRBRNC_STTS **THEN** IS_IMIR_NEW_BSNSS = -1;

ELSE IS_IMIR_NEW_BSNSS = 0;

- IS_INTRST_RT_FLTNG
  This flag identifies the instruments with a variable interest rate. Furthermore, it is used for the flag of initial rate fixation period.

IF TYP_INTRST_RT = "Variable" **THEN** IS_INTRST_RT_FLTNG = 1;

ELSE IF TYP_INTRST_RT in {"Fixed", "Mixed"} or NEVS_TYP_INTRST_RT = "0" **THEN** IS_INTRST_RT_FLTNG = 0;

ELSE IS_INTRST_RT_FLTNG = -1;

- INTRST_RT_RST_SNC_INCPTN_MNTHS
  This flag identifies the number of months between either the date of legal final maturity and the date of inception or the next interest rate reset date and the date of inception. Furthermore, it is used for the flag of initial rate fixation period.

IF DT_INCPTN is NULL OR (DT_LGL_FNL_MTRTY is NULL AND DT_NXT_INTRST_RT_RST is NULL) THEN INTRST_RT_RST_SNC_INCPTN_MNTHS = NULL;

ELSE IF NEVS_DT_NXT_INTRST_RT_RST is NULL THEN INTRST_RT_RST_SNC_INCPTN_MNTHS = MONTHS_BETWEEN (DT_NXT_INTRST_RT_RST, DT_INCPTN);

ELSE INTRST_RT_RST_SNC_INCPTN_MNTHS = MONTHS_BETWEEN (DT_LGL_FNL_MTRTY, DT_INCPTN);

- INTL_RT_FXTN
  This flag identifies breakdowns expressed in terms of initial period of interest rate fixation for the aggregates of lending rate on new business.

IF IS_INTRST_RT_FLTNG=-1 OR (IS_INTRST_RT_FLTNG=0 AND INTRST_RT_RST_SNC_INCPTN_MNTHS is NULL) THEN INTL_RT_FXTN="-1";

ELSE IF IS_INTRST_RT_FLTNG=1 THEN INTL_RT_FXTN="D";

ELSE IF INTRST_RT_RST_SNC_INCPTN_MNTHS <= 3 THEN INTL_RT_FXTN="D";

ELSE IF INTRST_RT_RST_SNC_INCPTN_MNTHS <= 12 THEN INTL_RT_FXTN="Q";

ELSE IF INTRST_RT_RST_SNC_INCPTN_MNTHS <= 36 THEN INTL_RT_FXTN="R";

ELSE IF INTRST_RT_RST_SNC_INCPTN_MNTHS <= 60 THEN INTL_RT_FXTN="S";

ELSE IF INTRST_RT_RST_SNC_INCPTN_MNTHS <= 120 THEN INTL_RT_FXTN="O";

ELSE IF INTRST_RT_RST_SNC_INCPTN_MNTHS > 120 THEN INTL_RT_FXTN="P";

2.3.2.2 MIR instruments identification flags

Regarding the identification of instruments eligible for the MIR calculation, following additional flags must however be added:

- Not_BD_LN_FLG

  This flag identifies instruments, which are considered uncollectible. This is based on the default status of the counterparty or of the instrument respectively.

IF DFLT_STTS_INSTRMNT is NULL AND DFLT_STTS_DBTR is NULL THEN NOT_BD_LN_FLG = -1;

ELSE IF DFLT_STTS_INSTRMNT in {“Default because both unlikely to pay and more than 90/180 days past due”, “Default because unlikely to pay”, “Default because more than 90/180 days past due”} OR DFLT_STTS_ DBTR in {“Default because both unlikely to pay and more than 90/180 days past due”, “Default because unlikely to pay”, “Default because more than 90/180 days past due”} THEN NOT_BD_LN_FLG = 0;

ELSE NOT_BD_LN_FLG = 1;

- IS_NOT_FRBRNC_BLW_MRKT_CNDTNS

  This flag identifies instruments, which have interest rates on bad loans and on debt restructuring at rates below market conditions have to be excluded from the MIR comparison.

IF FRBRNC_STTS is Null **THEN** IS_NOT_FRBRNC_BLW_MRKT_CNDTNS = -1;

ELSE IF FRBRNC_STTS = "Forborne: instruments with modified interest rate below market conditions" **THEN** IS_NOT_FRBRNC_BLW_MRKT_CNDTNS = 0;

ELSE IS_NOT_FRBRNC_BLW_MRKT_CNDTNS = 1;

Finally, a flag on the MIR eligibility of an AnaCredit instrument is calculated taking into account the results of the four flags described during the BSI comparison and the additional BD_LN_FLG flag:

IF IS_NOT_FDCRY = 1 **AND** NON_TRDTNLLY_SEC_FLG = 1 **AND** RCGNTN_FLG = 1 **AND** IS_NOT_FRBRN_BLW_MRKT_CNDTNS=1 **AND** NOT_BD_LN_FLG = 1

THEN IS_MIR_INSTRMNT = 1;

ELSE IS_MIR_INSTRMNT = 0;

All the instruments whose flag "IS_MIR_INSTRMNT" is equal to 1 are taken into account when calculating the MIR weighted averages. Conversely, the instruments whose flag is equal to 0 or -1 are excluded from the calculation and listed in the "MIR_EXC_INSTRMNT" feedback.

2.3.2.3 Data quality flags

The data quality flags calculated during the BSI comparison (see chapter 2.2.2.2) also apply to the MIR comparison.

In addition, following flag is calculated for the MIR comparison:

- IS_INTRST_RT_RPRTD

  This flag checks whether the interest rate has been reported.

IF ANNLSD_AGRD_RT is not NULL **THEN** IS_INTRST_RT_RPRTD = 1;

ELSE IF NEVS_ANNLSD_AGRD_RT = "0" **THEN** IS_INTRST_RT_RPRTD = 0;

ELSE IS_INTRST_RT_RPRTD = -1;

2.3.3 Solution indications

It is recommended to identify and then resolve any inconsistencies detected during the AnaCredit-BSI comparison before starting the AnaCredit-MIR comparison. There are many sources of inconsistency between reports. The flags on data quality defined in chapter 2.2.2.2 also apply to the MIR comparison. Among the most frequent quality deficiencies, the interest rate reported in percentage format and not in decimal format should be considered.

2.4 Reports

2.4.1 Feedbacks provided

During the AnaCredit-BSI-MIR comparison, one file is made available to reporting agents. This .xlsx file includes two worksheets:

- **BSI_Overview** (overview of BSI DQI results)
- **MIR_Overview** (overview of MIR DQI results)

The feedback file can also contain four additional worksheets, namely:

- **BSI_EXC_INSTRMNT** (list of instruments excluded from BSI calculation)
- **BSI_INC_INSTRMNT** (list of instruments included in the BSI calculation)
- **MIR_EXC_INSTRMNT** (list of instruments excluded from the MIR calculation)
- **MIR_INC_INSTRMNT** (list of instruments included in the MIR calculation)

In the meantime, the BCL will include these four spreadsheets but they will only contain the following attributes:

- OBSRVD_AGNT_CD,
- DT_RFRNC,
- T1M_MSG_ID,
- T2M_MSG_ID,
- T2Q_MSG_ID,
- REF_MSG_ID,
- CNTRCT_ID,
- INSTRMNT_ID,
- all flags described in chapters 2.2.2 and 2.3.2.

The two types of “Overview” and “Excluded” worksheets are described in more detail below.

2.4.1.1 Results of the calculation of aggregates / weights

The “Overview” sheet includes the aggregates / weighted averages calculated for AnaCredit and BSI / MIR as well as the DQIs calculated on the comparison.

An example of an BSI comparison table is available in Annex 4.2.1. In order to facilitate the interpretation of this table, the DQIs are coloured as follows:

- Green: the DQI is below the required threshold and no correction is expected
- Yellow: the DQI is above the required threshold. Correction is not required. However, reporting agents are strongly encouraged to correct these sub-aggregates in anticipation of more extensive requirements.
- Red: the DQI is above the required threshold. Correction is required

2.4.1.2 List of instruments excluded from the calculation of aggregates

The “Excluded” sheet lists all the instruments excluded from the calculation of aggregates / weighted averages based on the flags described above. An instrument is added to the list when at least one of the two flags DQ_FLG or IS_BSI_INSTRMNT / IS_MIR_INSTRMNT is equal to 0 or -1.

In addition to the aforementioned flags, the list includes attributes to better identify inconsistencies between AnaCredit and BSI / MIR:

- OBSRVD_AGNT_CD
- DT_RFRNC
- CNTRCT_ID
- INSTRMNT_ID

The list is ordered as follows:

1 IS_BSI_INSTRMNT / IS_MIR_INSTRMNT, in descending order

2 DQ_FLG, in ascending order

3 BSI_AGGRGBL_BLNC, in descending order

Therefore, it is recommended to analyse the first observations in the list first, which are most likely to have the greatest impact on the aggregates. An example of the excluded instruments table can be found in Annex 4.2.

2.4.2 Communication frequency and delay

The comparison reports are sent quarterly, regardless of resubmissions sent by reporting agents. Ad hoc reports can be generated upon request from reporting agents.

2.4.3 Revision deadlines

Due to the implementation of the new non-compliance procedure at the ECB, the reporting agents have a maximum of 20 working days to correct any DQIs above the required threshold. In addition, before proceeding to a resubmission (regardless the type of report), reporting agents are asked to confirm by email the reports and the reference periods to be resubmitted. Please note that a modification or even a correction in report S 1.1 may also require modifications in the report S 2.5.

Future submissions should already take into account any inconsistencies detected.

3 Contact data at the BCL

For any question related to the AnaCredit report, please contact the AnaCredit team at the BCL (reporting.anacredit@bcl.lu).

For any question, which concerns more precisely referential data, please contact the referential data team at the BCL (siq@bcl.lu).

4 Annexes

4.1 Glossary

DQI	Data Quality Indicator
EA	Euro area
ECB	European central bank
BSI	Individual balance sheet items statistics (S 1.1 and S 2.5 reports in Luxembourg)
ICPFs	Insurance Corporations and Pension Funds
MIR	Individual MFI interest rate statistics (S 1.5 reports in Luxembourg)
MFI	Monetary and Financial Institutions
MMF	Money Market Funds
NCB	National central bank
NFC	Non-financial corporation
OFI	Other Financial Intermediaries

4.2 Examples of feedback reports

4.2.1 Example BSI / AnaCredit comparison (“Overview”)

Observed Agent: LUB00XXX

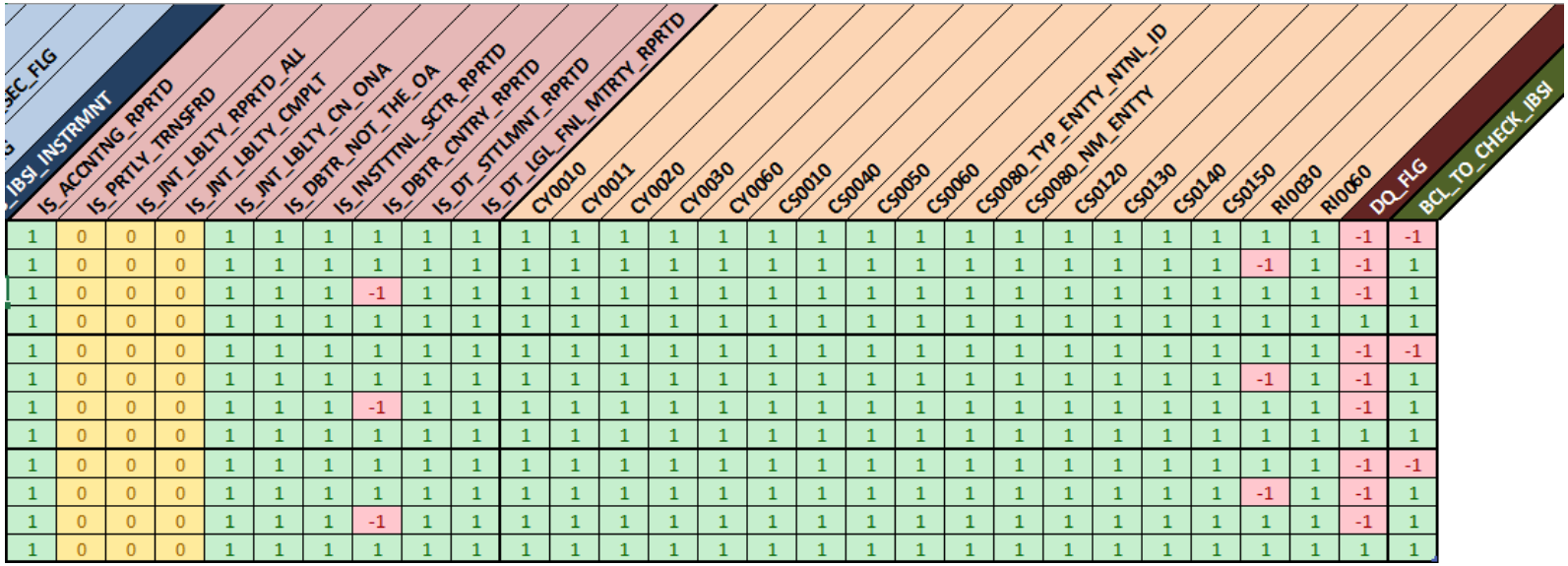
Aggregates per report and per reference date (in million €)	202103			202106			202109		
	AnaCredit	S1.1 Report	DQI	AnaCredit	S1.1 Report	DQI	AnaCredit	S1.1 Report	DQI
1. Dom MFIs	380,00	380,00	100,00 %	380,00	380,00	100,00 %	80,00	380,00	21,05 %
1.1 Dom central banks	300,00	300,00	100,00 %	300,00	300,00	100,00 %	0,00	300,00	0,00 %
2. Dom General government									
4.1 Dom NFCs, up to 1 year									
4.2 Dom NFCs, over 1 year and up to 5 years	50,00	50,00	100,00 %	50,00	50,00	100,00 %	50,00	50,00	100,00 %
4.3 Dom NFCs, over 5 years	250,00	262,00	95,42 %	250,00	262,00	95,42 %	0,00	262,00	0,00 %
5. OEA MFIs									
6. OEA General government	0,00	0,05	100,00 %	0,00	0,05	100,00 %	0,00	0,05	100,00 %
8.1 OEA NFCs, up to 1 year	0,00	0,05	100,00 %	0,00	0,05	100,00 %	0,00	0,05	100,00 %
8.2 OEA NFCs, over 1 year and up to 5 years	7,50	9,00	83,33 %	7,50	6,00	125,00 %	7,50	6,00	125,00 %
8.3 OEA NFCs, over 5 years									
9. EA OFIs and non-MMF investment funds									
10. EA ICPFs									
Total EA Loans	**987,50**	**1 001,10**	98,64 %	**987,50**	**998,10**	98,94 %	**137,50**	**998,10**	13,78 %
12. RoW - Total Loans	20,00	20,00	100,00 %	20,00	20,00	100,00 %	20,00	20,00	100,00 %

4.2.2 Example of list of excluded instruments in BSI calculation

Left-hand side of table:

OBSRVD_AGNT_CD	DT_RFRNC	T1M_MSG_ID	T2M_MSG_ID	T2Q_MSG_ID	REF_MSG_ID	CNTRCT_ID	INSTRMNT_ID	IS_NOT_FDCRY	RCGNTN_FLG	INTR_CMPNY_FLG	NON_TRDTNLLY_SEC_FLG	STTLD_FLG	IS_IBSI_INSTRMNT	IS_ACCNTNG_RPRTD	IS_PRTLY_TRNSFRD	IS_JNT_LBLTY_RPRTD_ALL	IS_JNT_LBLTY_CMPLT	IS_JNT_LBLTY_CN_ONA	IS_DBTR_NOT_THE_OA	IS_INSTTTNL_SCTR_RPRTD	IS_DBTR_CNTRY_R	IS_DT_STT	IS
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract8	Instrument8	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract10	Instrument10	1	1	0	1	0	0	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract7	Instrument7	-1	1	0	1	1	0	1	0	0	0	1	1	1	-1	1	1
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract9	Instrument9	0	1	0	1	1	0	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract8	Instrument8	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract10	Instrument10	1	1	0	1	0	0	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract7	Instrument7	-1	1	0	1	1	0	1	0	0	0	1	1	1	-1	1	1
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract9	Instrument9	0	1	0	1	1	0	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract8	Instrument8	1	1	0	1	1	1	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract10	Instrument10	1	1	0	1	0	0	1	0	0	0	1	1	1	1	1	1
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract7	Instrument7	-1	1	0	1	1	0	1	0	0	0	1	1	1	-1	1	1
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract9	Instrument9	0	1	0	1	1	0	1	0	0	0	1	1	1	1	1	1

Right-hand side of table:



SEC_FLG	IBSI_INSTRMNT	IS_ACCNTNG_RPRTD	IS_PRTLY_TRNSFRD	IS_JNT_LBLTY_RPRTD_ALL	IS_JNT_LBLTY_CMPLT	IS_JNT_LBLTY_CN_ONA	IS_DBTR_NOT_THE_OA	IS_INSTTNL_SCTR_RPRTD	IS_DBTR_CNTRY_RPRTD	IS_DT_STTLMNT_RPRTD	IS_DT_LGL_FNL_MTRTY_RPRTD	CY0010	CY0011	CY0020	CY0030	CY0060	CS0010	CS0040	CS0050	CS0060	CS0080_TYP_ENTTY_NTNL_ID	CS0080_NM_ENTTY	CS0120	CS0130	CS0140	CS0150	RI0030	RI0060	DQ_FLG	BCL_TO_CHECK_IBSI
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	-1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	-1	1
1	0	0	0	1	1	1	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	-1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	1	-1	1
1	0	0	0	1	1	1	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	-1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	1	-1	1
1	0	0	0	1	1	1	-1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-1	1
1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

4.2.3 Example of list of included instruments in BSI calculation

OBSRVD_AGNT_CD	DT_RFRNC	T1M_MSG_ID	T2M_MSG_ID	T2Q_MSG_ID	REF_MSG_ID	CNTRCT_ID	INSTRMNT_ID	MTRTY	ITEM
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract5	Instrument 5	Up to 1 year	1. Dom MFIs
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract1	Instrument 1	Above 5 years	1. Dom MFIs & 1.1 Dom central banks
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract3	Instrument 3	Above 1 year and up to 5 years	4.2 Dom NFCs, over 1 year and up to 5 years
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract11	Instrument11	Above 5 years	4.3 Dom NFCs, over 5 years
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract2	Instrument 2	Above 5 years	5. OEA MFIs
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract4	Instrument 4	Above 1 year and up to 5 years	8.2 OEA NFCs, over 1 year and up to 5 years
LUB00XXX	202003	XX1	XX1	XX1	XX1	Contract6	Instrument 6	Up to 1 year	12. RoW - Total Loans
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract5	Instrument 5	Up to 1 year	1. Dom MFIs
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract1	Instrument 1	Above 5 years	1. Dom MFIs & 1.1 Dom central banks
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract3	Instrument 3	Above 1 year and up to 5 years	4.2 Dom NFCs, over 1 year and up to 5 years
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract11	Instrument11	Above 5 years	4.3 Dom NFCs, over 5 years
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract2	Instrument 2	Above 5 years	5. OEA MFIs
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract4	Instrument 4	Above 1 year and up to 5 years	8.2 OEA NFCs, over 1 year and up to 5 years
LUB00XXX	202006	XX2	XX2	XX2	XX2	Contract6	Instrument 6	Up to 1 year	12. RoW - Total Loans
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract5	Instrument 5	Up to 1 year	1. Dom MFIs
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract3	Instrument 3	Above 1 year and up to 5 years	4.2 Dom NFCs, over 1 year and up to 5 years
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract2	Instrument 2	Above 5 years	5. OEA MFIs
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract4	Instrument 4	Above 1 year and up to 5 years	8.2 OEA NFCs, over 1 year and up to 5 years
LUB00XXX	202009	XX3	XX3	XX3	XX3	Contract6	Instrument 6	Up to 1 year	12. RoW - Total Loans

4.3 Calculation of the BSI aggregable balance

The BSI aggregable balance (BSI_AGGRGBL_BLNC) is calculated as follows:

```
BSI_AGGRGBL_BLNC = PR_RT_DBTR_SHR * BSI_INSTRMNT_BLNC
```

The pro-rata debtor share (PR_RT_DBTR_SHR) is calculated as follows:

```
IF NMBR_DBTRS = 1 THEN DO;
        IF JNT_LBLTY_AMNT is NULL THEN PR_RT_DBTR_SHR = 1;
      ELSE IF JNT_LBLTY_AMNT = 0 AND OTSTNDNG_NMNL_AMNT = 0
        THEN PR_RT_DBTR_SHR = 1/2;
      ELSE PR_RT_DBTR_SHR = JNT_LBLTY_AMNT / OTSTNDNG_NMNL_AMNT;
END;
ELSE IF NMBR_DBTRS > 1 THEN DO;
      IF JNT_LBLTY_AMNT is NULL THEN PR_RT_DBTR_SHR is NULL;
      ELSE IF JNT_LBLTY_AMNT_Sum = 0 AND OTSTNDNG_NMNL_AMNT = 0
        THEN PR_RT_DBTR_SHR = 1/NMBR_DBTRS;
      ELSE IF JNT_LBLTY_AMNT_Sum = 0 AND OTSTNDNG_NMNL_AMNT > 0
        THEN PR_RT_DBTR_SHR = 0;
      ELSE IF JNT_LBLTY_AMNT_Sum > OTSTNDNG_NMNL_AMNT
        THEN PR_RT_DBTR_SHR = JNT_LBLTY_AMNT / JNT_LBLTY_AMNT_Sum;
      ELSE IF JNT_LBLTY_AMNT_Sum <= OTSTNDNG_NMNL_AMNT
        THEN PR_RT_DBTR_SHR = JNT_LBLTY_AMNT / OTSTNDNG_NMNL_AMNT;
END;
```

Where:

- NMBR_DBTRS = number of debtors in the instrument
- JNT_LBLTY_AMNT_Sum = sum of the joint liabilities in an instrument

The BSI instrument balance (BSI_INSTRMNT_BLNC) is calculated as follows:

```
BSI_INSTRMNT_BLNC = Max(OTSTNDNG_NMNL_AMNT - (IS_PRTLY_TRNSFRD *
TRNSFRRD_AMNT), 0);
```

4.4 Calculation of the MIR aggregable balance

For the outstanding positions, the same calculation as for the BSI aggregates is used.

For the new business comparisons, the MIR instrument balance is calculated as follows:

```
IF IS_IMIR_NEW_BSNSS ne "1" THEN IMIR_INSTRMNT_BLNC_NEW_BSNSS = NULL;

ELSE IF IS_RVLVNG = "1"  THEN IMIR_INSTRMNT_BLNC_NEW_BSNSS =
OTSTNDNG_NMNL_AMNT

ELSE IF (DT_RFRNC >= DT_FRBRNC_STTS > Previous_Quarter_DT_RFRNC) THEN
IMIR_INSTRMNT_BLNC_NEW_BSNSS = OTSTNDNG_NMNL_AMNT + OFF_BLNC_SHT_AMNT

ELSE IF CMMTMNT_INCPTN is not NULL THEN IMIR_INSTRMNT_BLNC_NEW_BSNSS =
CMMTMNT_INCPTN;

ELSE IMIR_INSTRMNT_BLNC_NEW_BSNSS = sum(OTSTNDNG_NMNL_AMNT,
OFF_BLNC_SHT_AMNT);
```

The MIR aggregable balance (IMIR_AGGRGBL_BLNC_NEW_BSNSS) is calculated as follows:

```
IMIR_AGGRGBL_BLNC_NEW_BSNSS = PR_RT_DBTR_SHR *
IMIR_INSTRMNT_BLNC_NEW_BSNSS
```