THE CENTRAL BANK

OF BOSNIA AND HERZEGOVINA

Ref: 101-17-2-1071/13

Sarajevo, 09 April 2013

On the basis of Article 53 of the By-law of the Central Bank of Bosnia and Herzegovina, UV ref: 120/05 dated 29 June 2005, 100-UV ref: 66/10 dated 29 April 2010, 100-UV ref: 130/11 dated 30 March 2011, 100-UV ref: 18/12 dated 31 January 2012 and 100-UV ref: 10/13 dated 31 January 2013, Governor of the Central Bank of Bosnia and Herzegovina passes

METHODOLOGY

for Compilation and Presentation of Interest Rate Statistics

Introduction

1.This methodology for compilation and presentation of interest rate statistics (hereinafter: the methodology) defines the basic rules for the compilation and presentation of interest rate statistics, the way and mathematical formulae for calculating interest rates, classification of financial instruments, institutional sectors and examples for calculation.

2.Interest rate statistics compiled and published by the Central Bank of Bosnia and Herzegovina (hereinafter: the Central Bank) produces harmonized data on level of the average weighted lending and deposit nominal interest rates of commercial banks in Bosnia and Herzegovina (hereinafter: banks and BH) , presented at the annual level.

3. For the needs of producing interest rate statistics, the Central Bank compiles data from all the banks in BH in the reporting form MFS2- New survey of interest rates at the annual level (hereinafter: Report MFS2 – New), starting with the data for January 2012. The previous interest rate statistics and also the Reporting Form for interest rates, MFS2 is revoked with the data for December 2012, with the note that the first part of this form on the spread from the minimal to the maximal lending and deposit rates should be still submitted by banks, once a year, with the data for January of the current year, in the existing form.

Methodological Concept

4. In the process of compiling data on interest rates, banks apply international standards of statistical reporting defined in:

a) Manual for Interest Rate Statistics for Monetary Financial Institutions, ECB (ECB/2001/18)http://www.ecb.int/stats/pdf/money/mfiintrestratestatisticsmanual.pdf?3d820c233707337fdbe4c184c0fad1c8
b) Manual for Monetary and Financial Statistics, IMF, 2000 http://www.imf.org/external/pubs/ft/mfs/manual/index.htm
c) Manual for Compilation of Monetary and Financial Statistics, IMF, 2008 http://www.imf.org/external/pubs/ft/cgmfs/eng/index.htm
d) System of National Accounts SNA 93
e) European System of Accounts ESA 9

5. In the process of developing a new interest rate statistics harmonized with the legislation of the European Union (hereinafter: EU), recommendations of the experts of the National Bank of Austria, who, within IPA 2008 Project, have provided technical assistance to the Central Bank with purpose of achieving EU standards in the area of interest rate statistics, have been used.

Reporting Units

6. Reporting units for the compilation of interest rate statistics are all the banks in BH whose competences, work and operations are regulated by positive regulations on banks, and also Development Bank of the Federation of BH, whose competences and work are defined by the Law on the Development Bank of the Federation of BH.

Data Compilation

7. Compilation of data for interest rate statistics from the mentioned reporting units is performed by means of Report MFS2 – New, mentioned in item 3. of this methodology. Data from banks are compiled in the Main Units of the Central Bank and are submitted to the organizational form for the statistics of monetary and financial sector of the Head Office of the Central Bank (hereinafter: Section). Report MFS2 – New with the data on interest rates on loans and deposits and the relevant amounts, are sent by banks electronically in Excel format, and in other electronic format if necessary, to the competent Main Unit of the Central Bank according to the defined deadline of 15 calendar days after the expiry of the reporting month. Main Units of the Central Bank send the processed Reports MFS2- New to the Section, in the next five calendar days as latest. The exception is the data for December of the reporting year, which are sent as provisional and final data. The deadline for the submission of provisional data for December of the reporting year for banks is prolonged by five to seven calendar days compared to the previously defined deadline of 15 calendar days, while the final data are submitted in the first week of March.

8. Report MFS2-New is sent by banks to the Main Units of the Central Bank saved in Excel format, with the name of the file which includes the following:

File name: KBGGMMNNNNMFS2-New, KB=commercial bank, GG=year, MM=month, NNNN=bank code and MFS2-New= Report name.

Producing of report

9. In producing report MFS2 – New, on the first page, the indication of the reporting month is stated, as well as bank code, the name of the authorized person who approved the report, the name of the person who made the report, and the date of creating the report. When filling in the Report MFS2 – New, it is not allowed to add columns and rows or change any part of it, so that uniformity of format of input data for interest rates and the accompanying amounts can be provided and further updating of data can be made possible as well. The banks only fill in the white fields in the reporting form. The shaded fields are not filled in.

10. By means of Report MFS2- New, banks submit amounts of all newly agreed loans and deposits concluded between the bank and customer in the reporting month and the accompanying interest rates. In addition to the newly agreed business, banks report on certain existing business which include outstanding amounts of revolving credits, overdrafts and credit cards in gross amounts (without provisions for loan losses) and the bookkeeping positions of overnight deposits on the last day of the reporting month. Interest rate is defined as interest rate individually agreed between the bank and the customer (household or non-financial corporations for a deposit or loan, presented at the annual level, in percentage with three decimal places. For each individual loan or deposit, interest rate is calculated, in one of two ways, depending on the way of collection or payment of interest, i.e. accrual or capitalization of interest. The first way is calculating annualized agreed interest rate or AAR (hereinafter: AAR), and the other way is calculating narrowly defined effective interest rate (hereinafter: NDER). After calculating AAR/NDER, the average weighted interest rate for a particular category of loan or deposit is calculated which is entered in Report MFS2 – New.

11. All the amounts for the needs of producing Report MFS2 – New have to be converted and presented in thousands of convertible marks (hereinafter: KM) with numbers rounded to the nearest thousand without decimal numbers, with the use of separator *(for example*: 2,158 – two million hundred and fifty eight thousand). With new business, originally agreed loan amounts or deposit amounts are entered with the relevant interest rates, and in the existing business, the existing balance of loan or deposit is entered together with the calculated interest rates which is included in the amount of the existing business. According to the structure of Report MFS2 -New, newly agreed loans to non-financial corporations should be classified according to the amount, taking into account the spread where that loan would be placed if presented in euro currency. (*For example*: during the reporting month, two loans were agreed with non-financial corporations, in KM indexed to foreign currency, in amounts of KM 1 million and KM 3 million. The first loan should be presented in the amount of 1,000 and

classified in the row which applies to the loans: „over 0.25 million EUR and up to 1 million EUR“ with the accompanying interest rate, as, according to the fixed exchange rate 1 KM = 0.51129 EUR or 1 EUR = 1.955830 KM, the amount of KM 1,000,000 /1.955830 = EUR 511,291. The other loan should be presented in the amount of 3,000 and classified in the row which applies to the loans „over EUR 1 million “with the accompanying interest rate, as 3,000,000/1.955830 =EUR 1,533,875).

Data Revision

12. Revision of published data is carried out in the first following reporting month, in case of submission of modified data or methodological changes in procedures of compilation of interest rate statistics. Revised data are marked by a footnote which explains the change. Data revision is performed from the moment of the appearance of the change which resulted in the change of data series.

13. If a change appears in the presentation, such as publishing of a new indicator, instrument or similar, historical data series is revised from the moment of introduction of a new indicator.

Basic Principles, Concepts and Rules for the Compilation and Presentation of Interest Rate Statistics

14. In the process of compilation and presentation of interest rate statistics, the basic principles, concepts and rules for the classification of institutional sectors, financial instruments and calculation of interest rates have to be obeyed.

15. Currency

15.1. Within the categories: a) loans and b) deposits, there are three additional currency divisions, as it follows:

<u>a) Interest rates on loans</u>

1) Interest rates on loans in KM,

2) Interest rates on loans in KM indexed to foreign currency

3) Interest rates on loans in foreign currency.

<u>b) Interest rates on deposits</u>

1) Interest rates on deposits in KM and interest rates on deposits in KM indexed to foreign currency,

2) Interest rates on deposits in foreign currency (not including deposits in EUR),

3) Interest rates on deposits in euro (in EUR).

16. Sectorisation

16.1. All the previously mentioned types of interest rates are further arranged in certain positions according to the sector where the loan user belongs to, as it follows:

a) Loans/deposits related to the sector of households

For the needs of reporting on the interest rate amount on bank loans and deposits, household sector is expanded and includes households, according to the standard classification, sole proprietors and non-profit institutions offering services to households:

1) Households

Household sector includes individuals or groups of individuals as consumers and producers of commodities and non-financial services for only personal final use. The group of economically dependent persons includes workers, employees, office workers, pensioners and unemployed people. The group of other physical persons includes housewives, children, pupils, students, persons being trained for craft and persons without stated occupation.

2) Sole proprietors

Sole proprietors produce market goods and services (market producers). Craft is independent and permanent performance of allowed and registered economic activities as the basic, supplemental or additional occupation, by physical persons with purpose of achieving profit which is made by production, trade or supply of services on the market. This category includes, *for example*: cottage industry, traditional and old crafts, doctors, lawyers, catering etc...

3) Non-profit institutions offering services to households

These non-profit institutions include institutional units which are legal persons and which offer services to households. Their basic is sources of income, except for that obtained from occasional sale, mainly arises from voluntary contributions in money or in kind by households as consumers, from the funds obtained from the Government and income from their own property. This category includes, *for example*: unions, professional associations and academic associations, consumer associations, political parties, churches, religious associations, cultural, recreational and sports clubs, charity organizations and organizations for offering help.

b) Loans/deposits related to the sector of non-financial corporations

Non-financial corporations mean corporations engaged primarily in the production of goods and non-financial services:

1) Public non-financial corporations

Public non-financial corporations are corporations established and controlled by the state with minimum 50% share in ownership, and they perform the activity of general interest.

2) Private non-financial corporations

Private non-financial corporations are in major private ownership of legal or physical persons, they are engaged in production and sale of goods and services for the needs of the market with purpose of acquiring profit.

16.2. The previously mentioned sectors apply only to residents, while non-residents are not included in interest rate statistics.

17.1. Type of business

Interest rate statistics according to the type of business includes: new business and outstanding amounts

17.1. New business

a) New business is the following:
1) All new contracts on loan or deposit concluded between the bank and the customer during the reporting month (except for loans for debt restructuring at the interest rates significantly below market conditions).
2) All the financial arrangements for which conditions are agreed for the first time during the reporting month, and all the existing contracts for which new conditions have been agreed with the active participation of the customer (if the customer took active participation in the repeated agreement, even if the contract conditions remained the same, such contracts on loans or deposit are presented as new business).

Date of conclusion of the contract is considered a decisive factor in classification and including of a new credit or deposit business in the report on the amount of interest rates of the bank for the reporting month (unlike the previous interest rate statistics, where the base for registration of a new business was the moment of actual realization of a new business in the amount actually realized in that month).

New business, in respect of this methodology, does not include:

1) Automatic prolongations the existing contracts on loan and deposit, without active participation of the customer, which does not require that conditions and modalities of the contract should be again agreed (interest rate, maturity, indexation etc...). The term „without active participation of the customer "means that the interest rate is automatically adjusted according to the conditions in the contract, without a possibility for the customer having any impact (*for example*: if the interest rate is adjusted to EURIBOR rate of various maturities without a possibility for the customer to negotiate or to repay a loan),

2) any change of conditions from the contract (*for example*: interest rate, maturity, indexation) if it is defined by the contract,

3) if, during new negotiations, only the means of security of the claim has been changed, that having no impact on the amount of interest rate or loan amount).

Example:
In the reporting month:
-Loan 1 with the amount of KM 10,000 at the interest rate of 5.25% newly agreed,
- Loan 2 with KM 8,000 at the new interest rate of 5.5% agreed,
- Loan 3 with KM 10,000 at the interest rate of 5%, newly agreed
In new business, the following is reported: interest rate of 5.232% [(5.25%*10,000 + 5.5%*8,000 + 5%*10,000)/28,000= 5.232 %] and the amount of new business of KM 28,000.

b) Bad loans

Problem loans represent the balance of the total remaining debt of individual loan (including also the delayed amount):

1) On the basis of which debtor is late with the repayment of principal or interest for 90 or more days from the initial maturity deadline,

2) For which the interest rates in the three month amount (or higher) is accrued to debt, capitalized, refinanced or its payment has been delayed.

3) On the basis of which debtor is late less than 90 days, but the bank has estimated that the debtor's ability to repay the debt has declined and that debt repayment in the full amount is in question.

In case the customer temporarily ceases to repay the loan and starts the repayment again after some time, the new beginning of repayment after a moratorium does not represent a new business, if there was no change of conditions from the contract with the active participation of the customer. If such a loan is related to revolving loans or loans based on credit cards, it is again included in the existing business when the customer continues to repay a loan.

c) Loans for debt restructuring significantly below market conditions

The interest rates significantly lower than those at the market apply to the loans where the bank makes possible for the customer to restructure the unsettled debt at the interest rate lower than the market one in order to prevent the complete failure in meeting liabilities related to that loan in case the customer has financial problems. As used in this methodology, debt restructuring at the interest rates significantly lower that the market ones means interest rates which are not the result of supply and demand on the credit market, but they are determined by the bank at a lower level than usual interest rates approved for the same type of product.

17.2. Outstanding amounts is the following:

a) Credit card debts of households or non-financial corporations

Credit card debt is related to the credit card loans for the household sector or non-financial corporations. The used part of the extended loan, i.e. debit balance can be entirely repaid in a certain time period (convenience credit card credit) or it can be paid in instalments, where the unsettled debt is transformed into a extended credit card credit.

b) Convenience credit card credit

Convenience credit card credit is a postponed payment of credit card debt at the interest rate of 0% in the period from the date when payment was made by credit card in one settlement period until the end of that settlement period or the deadline determined by the bank itself (grace period), after that, the debit balance become a debt, i.e. the extended credit card credit.

c) Extended credit card credit

The extended credit card credit occurs after the maturity date of the initial settlement period with 0% interest rate or period without interest, determined by the bank, has ended, i.e. when interest rates is calculated on the debit balance in credit card account which was not settled when it was first possible. Also, the extended credit card credit occurs in the case when the bank calculates the interest rates starting from the date when the customer performed the payment by credit card.

d) Current account overdraft

Current account overdraft is a debit balance in the current account of household sector and non-financial sector. All current account overdrafts are subject of reporting regardless of the fact whether the current account overdraft is within or above the limit agreed between the bank and the customer. The bank makes a difference between the allowed and non-allowed current account overdraft. Current account overdraft does not include the credit card loans.

e) Revolving loan

Revolving loan is a contract between the bank and the customer which makes possible for the customer to take a loan during a certain period and up to the certain limit, and to repay the loan at his/her own wish until the agreed deadline.

Revolving loan has the following features: the customer may use or withdraw funds up to the amount of the previously approved credit limit without the obligation of previously announcing it to the bank, the amount of the approved loan can be increased or decreased as the funds are used or repaid, the loan can be used several times and there is no obligation of regular loan repayment.

Revolving loan excludes credit card loans. The total amount which the customer owes is a subject of reporting on the amount of interest rates of banks regardless whether the amount is within or outside the limit previously agreed between the bank and the customer in respect of the amount or period of loan repayment.

17.3. Differences between the new and existing business

The change of interest rate during the contract duration which was included in the contract on loan or deposit at the time of contract conclusion t_0 does not represent a new business, but a part of conditions specified by contract. So, the change of interest rate or other conditions from the contract which is included by the contract is not shown in interest rate statistics as new business. However, the change of interest rate represents a new business if it was not included in the initial contract, but it appeared as a result of negotiations between the bank and the customer.

Example: The way of presenting interest rate in existing and new business

The bank received a deposit in the amount of KM 1,000 made a term deposit on two year period. Nominal (agreed) interest rate amounts to 7% annually. In the end of the contract, the customer has the following possibilities:

1) To withdraw the deposited funds,
2) To inform the bank that s/he wishes to renew the contract under the same conditions,
3) To do nothing, and in that case, the bank can prolonged the contract automatically under the same conditions,
4) To negotiate terms of contract and in that case the customer has a possibility to change the conditions from the contract or not to change them.

The possibilities mentioned in this *example from 1) to 4)* will be presented in interest rate statistics in the existing and new business in the following way, where t_0 is a time of contract conclusion, and times t_1 and t_2 are the following periods in years. For the needs of interest rate statistics compiled by the Central Bank, it is necessary to pay attention only to the part related to new business, and the part related to the existing business can be applied only in the fourth case, if the customer negotiated that the mentioned deposit could be further placed as a sight deposit or transferrable deposit which only on such basis should be classified in the existing business:

1) *Withdrawal of deposited money:*

	t_0	t_1	t_2
INTEREST RATES ON OUTSTANDING AMOUNTS	**7%**	**7%**	**-**
PONDER	1000	1000	-
INTEREST RATES ON NEW BUSINESS	**7%**	**-**	**-**
PONDER	1000	-	-

2) *The customer informs the bank that s/he wishes to renew the contract under the same conditions:*

	t_0	t_1	t_2
INTEREST RATES ON OUTSTANDING AMOUNTS	7%	7%	7%
PONDER	1000	1000	1000
INTEREST RATES ON NEW BUSINESS	7%	-	7%
PONDER	1000	-	1000

3) *Automatic prolongations of contract under the same conditions:*

	t_0	t_1	t_2
INTEREST RATES ON OUTSTANDING AMOUNTS	7%	7%	7%
PONDER	1000	1000	1000
INTEREST RATES ON NEW BUSINESS	7%	-	-
PONDER	1000	-	-

4) *Negotiating contract conditions:*

		t_0	t_1	t_2
CLINET HAS CHANGED CONTRACT CONDITIONS	INTEREST RATES ON OUTSTANDING AMOUNTS	7%	7%	10%
	PONDER	1000	1000	1000
	INTEREST RATES ON NEW BUSINESS	7%	-	10%
	PONDER	1000	-	1000
CLINET HAS NOT CHANGED CONTRACT CONDITIONS	INTEREST RATES ON OUTSTANDING AMOUNTS	7%	7%	7%
	PONDER	1000	1000	1000
	INTEREST RATES ON NEW BUSINESS	7%	-	7%
	PONDER	1000	-	1000

18. Loans

The bank will, for the reporting needs, divide the loans to household sector, according to their purpose, to: Loans for consumption, loans for house purchases. Loans to non-financial corporations are divided according to the amounts of newly agreed loans.

18.1. Loans to household sector

18.1.1. Loans for consumption

Loans for consumption are loans extended for purchase of goods and services for personal spending, (*for example*: loans for purchase of motor vehicles, furniture, household appliances, TV sets or computers, loans for financing holidays etc..). Loans to sole proprietors/associations of persons without legal capacity are included in this category of loans only if the loan provider knows that the loan would be used mainly for purposes of personal spending. Consumer loan which is refinanced through a new consumer loan is classified as a consumer loan. Consumer loan which is refinanced through a cash loan is classified as Loans for other purposes. In loans for consumption/new business, all the newly agreed loans for consumption except for loans based on credit cards, revolving loans and account overdrafts are reported.

18.1.2. Loans for house purchases

Loans for house purchases are loans approved with purpose of investing in housing units for personal use or renting, including construction, adaptation, reconstruction or repair. Purchase of construction land without a built facility and with partly built construction project, loans for installing central heating system and improvement of energy efficiency are considered loans for house purchases. The housing loan refinanced through a new housing loan is classified as a housing loan. Loans for house purchases for sole proprietors/associations of persons without legal capacity are included in this category, except in cases when the loan provider knows that the living space is mainly used for business purposes. In that case they are presented as „Loans for other purposes“ For interest rates and appropriate amounts of new business, the division of loans for house purchases, according to the agreed initial rate fixation, is divided into the following categories:

a) Up to one year,
b) Over one and up to five years,
c) Over five and up to 10 years,
d) Over 10 years.

18.1.3. Loans for other purposes

Loans for other purposes include loans which do not belong in the previous two categories, in consumer or loans for house purchases. *Examples* of Loans for other purposes are: business loans, loans for education, debt consolidation, cash loans, loans to free-lance professions and sole proprietors, i.e. private non-profit organizations, if the purpose cannot be identified. All newly agreed loans for other purposes except for credit card loans, revolving loans and overdrafts are reported in the category „Loans for other purposes" – new business.

For interest rates and amounts of new business, category Loans for other purposes, according to the initial rate fixations, is divided into the following categories:

a) Up to one year,

b) Over one and up to five years,

c) Over five years.

18.2. Loans to non-financial corporations

Loans to non-financial corporations in KM, in KM indexed to foreign currency and in foreign currency in new business are classified in three loan categories, depending on the amount of each individual loan:

a) Up to and including EUR 250,000,
b) Over EUR 250,000 up to and including EUR 1,000,000,
c) Over EUR 1,000,000.

The loan amount is related to individual loans, it means it does not apply to the total amount of the loans approved by the bank to a non-financial corporations.

For interest rates and amounts of new business, the category Loans to non-financial corporations, according to the initial rate fixations, is divided into the following categories:

a) Up to one year,

b) Over one and up to five years,

c) Over five years.

19 . Deposits

Deposits of households and non-financial corporations for the needs of interest rate statistics are divided into overnight or (transferrable) and deposits with agreed maturity (according to the originally agreed maturity).

19.1. Overnight, demand (transferrable) deposits

Overnight deposits (transferrable deposits) are deposits which on demand can be immediately converted into cash and/or are transferrable by payment order to the bank, by recording debts or by similar instruments, without significant delays, restrictions or sanctions. Those are deposits without the agreed maturity period (*examples of overnight deposits are*: current accounts with the credit balance, saving demand deposits and accounts with purposes). Interest rates on overnight deposits include deposits with interest rates and interest rates bearing and non- interest rates bearing deposits. Overnight deposits include also loans repayable by the end of the next working day from the day when the loan was approved.

19.2. Deposits with agreed maturity

Deposits with agreed maturity are non-negotiable deposits with the fixed maturity where the client cannot dispose with funds before the expiry of the agreed period or can dispose prior to the agreed period with the payment of some kind of penalties (reduction of interest rate or payment of penalties). Deposits with agreed maturity are term savings deposits and deposits with agreed maturity on a defined period. If the contract includes the possibility for a term deposit to be, after a prior announcement, withdrawn earlier or withdrawn on demand with the payment of some penalties, in the initial classification such deposit is classified as a term deposit, and if the client has submitted a request to withdrawn a term deposit according to the provisions from the contract which are related to the period of the previous announcement, such a term deposit after submission of request to withdrawn a term deposit, if it is included in the bookkeeping balance at the end of the reporting month becomes a deposit with the notice period. Deposits with the notice period are non-negotiable deposits without agreed maturity which the customer cannot dispose with, without a previous announcement. Depending on the contract provisions, disposal of deposits before the expiry of the announcement period is not possible or it is possible only with the payment of penalties.

Term-deposits with new business for the household sector and the sector of non-financial corporations are divided according to the original (initially) agreed maturity. Original (initial) agreed maturity of deposits with agreed maturity with new business, for the household sector and sector of non-financial corporations, is divided into periods:

a) up to one year,
b) over one and up to two years,
c) over two years.

20. Calculation of interest rate on loans and deposits

20.1. Initial rate fixation

Loans in new business for household sector and sector of non-financial corporations, except for the loans in existing business (which currently include only revolving loans, current account overdrafts and credit cards debts) are divided according to the initial rate fixation (hereinafter: IRF).

IRF is a pre-defined, i.e. defined period of time in the beginning of loan contract during which the interest rate cannot be changed. IRF can be shorter or equal to the original loan maturity. Loan classification in new business is done according to the type of interest rate (fixed or variable). If interest rate is fixed, further classification is carried out according to the initial rate fixation and it is included in the appropriate rows which include the indications IRF up to one year, IRF over one and up to five years, IRF over five years or IRF over 10 years.

The following text gives an explanation for all the types of interest rates on new loans which are defined in the Form:

-floating interest rate and IRF up to one year, includes:

Floating interest rates on new short-term loans with original maturity up to one year and floating interest rates on new long-term loans with original maturity over one year, so all the loans with floating interest rate. This also includes interest rates on new short-term loans with original maturity up to one year and IRF up to one year, and also interest rates on new long-term loans with original maturities over one year but with IRF up to one year, so interest rates on both short –term and long-term loans with IRF up to one year. Most of the loans are extended by banks at the floating interest rates so most of the data will be filled in there,

-with original maturity *over one year* (this indented line in Report MFS2 –New is used as additional information for the previous line and it includes floating interest rates on new long-term loans with original maturity over one year and interest rates on new long-term loans with original maturity over one year but with IRF up to one year;

-*IRF over one and up to five years* includes interest rates on new loans with IRF over one year and up to five years with original maturity over one year (floating interest rates are not classified here),

-*IRF over five years* includes interest rates on new loans with IRF over five years with original maturity over 5years (floating interest rates are not classified here).

-*IRF over 10 years* includes interest rates on new loans with IRF over 10 years with original maturity over 10 years (floating interest rates are not classified here).

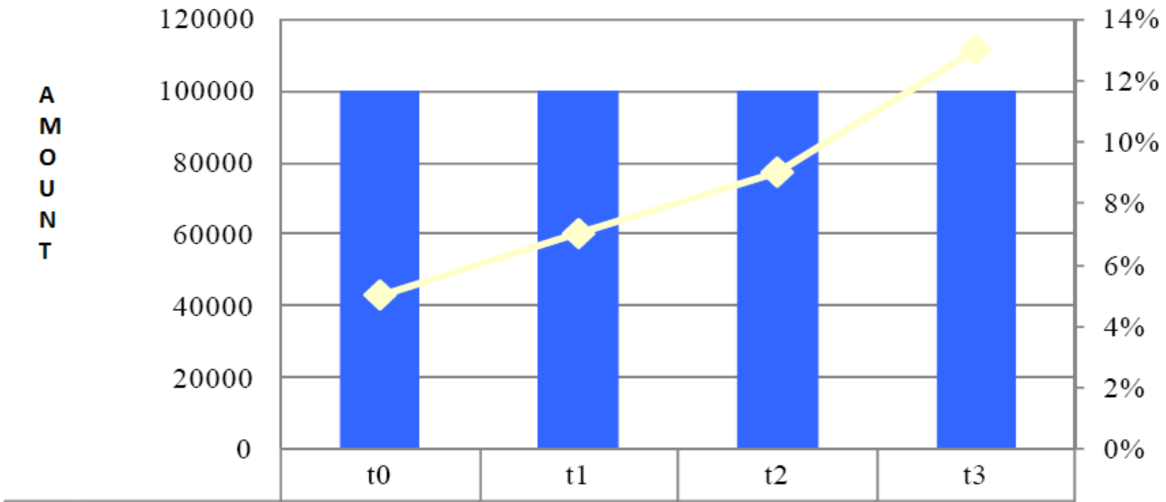
20.2. IRF with loans with growing or declining interest rate

With loans with growing or declining interest rate (step up or step down interest rate) initial rate fixation is equal to loan maturity, as the fixed interest rate has been agreed for the total loan maturity in the time t0 when the contract was concluded.

Loans and deposits with growing or declining fixed interest rate, i.e. step up or step down interest rate are loans and deposits with fixed maturity where the interest rate is applied which grows or declines year after year, by the pre-determined number of percentage points. With these loans, initial rate fixation is equal to loan maturity, as the fixed interest rate is agreed for the total loan maturity in the timet_0 when the contract was concluded.

Example and table show the way of recording interest rate on the loan with the growing interest rate. Each rate which consists of fixed and floating part which is connected to the value of an index at money market (EURIBOR, LIBOR etc...) or is connected to the growth of retail prices, index of costs of living etc... is treated as floating interest rate and accordingly, it is classified within each individual category of instrument within indicator “floating interest rate and IRF up to one year”.

Example: Loan with the step up (step down) interest rate
The bank has extended a consumer loan in the amount of KM 100,000 for four years. In the first year, the interest rate is 5%, in the second it is 7% in the third it is 9% and in the fourth it is 13%. The calculated interest rate NDER is 8.4951%. The interest is charged quarterly, and principal is charged upon the maturity.



	t0	t1	t2	t3
CREDIT AMOUNT	100000	100000	100000	100000
INTEREST RATE	5%	7%	9%	13%

	t_0	t_1	t_2	t_3
INTEREST RATES ON OUTSTENDING AMOUNTS	5%	7%	9%	13%
PONDER	100000	100000	100000	100000
INTEREST RATES ON NEW BUSINESS	8,4951%	-	-	-
PONDER	100000	-	-	-

In the statistics of new business, in time t_0 the interest rate of 8.4951% is presented, and loan is classified as a consumer loan, „from one and up to five years IRF“.

20.3. IRF with loans for the household sector and sector of non-financial corporations

Loans for consumption, for house and other purposes in new business for the household sector and sector of non-financial corporations according to the period of initial fixed interest rate are divided in the following way:

20.3.1. Loans for consumption and Loans for other purposes in new business, for the household sector, we distinguish the following initial periods of fixed interest rate:

-floating rate and IRF up to one year,

-IRF over one and up to five years,

-IRF over five years.

20.3.2. With loans for house purchases in new business, for the household sector, we distinguish the following initial periods of fixed interest rate:

-floating rate and IRF up to one year,

-IRF over one and up to five years,

-IRF over five and up to 10 years,

-IRF over 10 years.

20.3.3. Loans in new business for non-financial corporations according to the initial rate fixation are divided to:

-IRF up to one year.

-IRF over one and up to five years,

-IRF over five years.

Example: Interest rate for loans with IRF

Five year loan with floating interest rate which is adjusted once in six months is classified within indicator „floating interest rate and IRF up to one year.

Fifteen year loan with floating interest rate which is adjusted once a year is also classified within indicator „floating interest rate and IRF up to one year".

Example: Interest rate for loans with IRF

A consumer loan has been approved to a household in duration of 10 years. In the time t_0 the bank and customer have agreed that the interest rate is fixed and amounts to 10% at the annual level in the first four years. After this initial rate fixation, a new interest rate will be defined later in period t_4. The new interest rate for the remaining period of loan duration may be fixed or variable, but in any case it is not known in the time t_0. In the statistics of new business, in the time $t_{0,}$ the loan is shown within indicator "IRF over one and up to five years". The result of negotiations (with the active involvement of the customer) in the time t_4 is a fixed interest rate which amounts to 8% at the annual level in the remaining six years of loan duration and in time t_4 it will be shown in statistics of new business within indicator "IRF over five years".

20.4. Calculation of annualized agreed interest rate /AAR

Annualized agreed interest rate (AAR) is agreed interest rate between the bank and the customer on loans and deposits which is converted on annual basis and expressed in percentages at the annual level.

The bank which for the calculation of interest on loans and deposits uses a proportional method calculates AAR if the collection, accrual or capitalization of interest rates on loan, i.e payment, accrual or capitalization of interest rates on deposit is performed in regular time interval during one year or more frequently or equally to the repayment of the loan principal or payment of deposits in cases when:

a) The contract does not include the change of interest rate and
b) The contract includes the change of interest rate, and the amount of the future interest rate is not known at the moment of contract conclusion.

Regular time interval is daily, monthly, two month, three month, four month, semi-annual and annual collection, accrual or capitalization of interest rates on loan, i.e. payment, accrual or capitalization of interest rates on deposit within one year.

Mathematical formula for calculating AAR

$$x = \left(1 + \frac{r_{ag}}{n}\right)^{n} - 1$$

Where:

- x is annualized interest rate (AAR)
- r_{ag} is annual nominal interest rate agreed between the bank and the customer for the loan or deposit, where the collection or capitalization of interest rates on loan, i..e. payment or capitalization of interest rates on deposit is carried out in regular time periods within one year,
- - n is a number of time periods in which collection/payment/capitalization of interest rates is performed (n = 1 for annual payment, n=2 for semi-annual payment, n=4 for quarterly, n =12 for monthly and n=365 only if interest rates is actually paid on daily basis, and not if it is calculated on daily basis).
-

Example: Calculation of annualized agreed interest rate

The loan is extended for a time period of five years. Agreed interest rate amounts to 10% annually, interest is paid on quarterly basis, and repayment of principal upon maturity deadline. AAR is calculated as it follows:

$X = (1 + 0,1/4)^{4} – 1 = 0,103813 = 10,3813\%$

Example:

The deposit has been placed with three month maturity. Agreed interest rate on deposit is 3% annually, and interest capitalization is done upon maturity deadline. AAR is calculated as it follows:

$X = (1 + 0,03/4)^{4} – 1 = 0,03033 = 3,033\%$

20.5. Calculation of narrowly defined effective interest rate (NDER)

Narrowly defined effective interest rate (NDER) is interest rate which at the annual level equalizes the current value of all the future or existing obligations (loan or deposit, principal repayment, payment of interest), except for other costs agreed between the bank and customer. NDER is calculated by the bank which for the calculation of interest on loans and deposits uses a conform method. The bank, which for the calculation of interest on loans and deposits uses a proportional method, calculates narrowly defined effective interest rate (NDER) in the following cases:

a) If the collection or capitalization of interest on loan, i.e. payment or capitalization of interest on deposit is performed in irregular time intervals.
b) If the repayment/payment of principal is carried out more frequently that the interest payment.

If the bank decides, it can calculate all the interest rates on loans and deposits as NDER. If the bank uses a proportional method for calculating interest rates, and if the payment or capitalization of interest rates on loan or deposit is performed in regular time intervals during one year or more frequently or equally as the repayment of the loan principal or payment of deposit, AAR is equal to NDER.

The mathematical formula used for calculating NDER is:

$$K = \sum_{n=1}^{N} \left(CF_n \times DF_n \right) = \sum_{n=1}^{N} \left(CF_n \times \left(\frac{1}{1+i} \right)^{\frac{D_n}{365}} \right)$$

Where:

K – is the loan amount,

N – total number of payments,

CFn – money flow n, from the view of the bank in case of loan or from the view of the customer in case of deposit,

DFn – discount factor for n payment,

i – interest rate (NDER)

Dn – number of days until n payment

		Frequency of interest payments		
		Monthly (.M)	Quarterly (.Q)	Yearly (.Y)
Frequency of repayment of principal	Monthly (M.)	AAR	NDER	NDER
	Quarterly (Q.)	AAR	AAR	NDER
	Yearly (Y.)	AAR	AAR	AAR
	End of contract (E.)	AAR	AAR	AAR

Matrix of frequency of collection of interest and repayment of principal

20.6. Calculation of the average weighted interest rate

After calculating AAR/NDER for each individual loan or deposit, the average weighted interest rate is calculated for a certain category of loan or deposit which is included in the Report MFS2 – New.

The way of calculating the average weighted interest rate on loans and deposits has remained the same and the banks can use the method or way which they used by now .

20.6.1. Average weighted interest rate on loans

Average weighted interest rates on loans are calculated for two categories of loans:

loans to households and loans to non-financial corporations, using one of the two ways for calculating average weighted interest rates from paragraph (2) of this item.

Calculating the average interest rate can be performed in two ways:

a) On the basis of the total loans at a certain interest rate
b) On the basis of the recorded revenue on the basis of interest.

a) <u>Calculating average weighted interest rate on the basis of the total loans at a certain interest rate</u>

$$\text{Average weighted interest rate on loans} = \frac{\text{Total loans at a certain interest rate}}{\text{Total loans at various interest rates}} \times \text{Used interest rate}$$

Formula for calculating average weighted interest rate is the following:

$$p = \frac{(G1 \times p1)+(G2 \times p2)+(G3 \times p3)+...+(Gn \times pn)}{G1+G2+G3+.....+Gn}$$

Where:

p   is average weighted interest rate,

G1 is the amount of loans at a certain interest rate p1,

p1 is   interest rate on loans G1,

G1 +.... Gn   is the loan amount.

Example: Bank has agreed the following loans

KM 8,000 of loan at the rate 12.25%
KM 5,000 of loan at the rate 10.36%
KM 18,000 of loan at the rate 8.18 %
KM 31,000 of loan is the total amount agreed during the month.

What is the average weighted interest rate on newly agreed loans?

The average weighted interest rate is obtained when the above mentioned formula is applied.

$$p = \frac{(8000\times12.25)+(5000\times10.36)+(18000\times8.18)}{8000+5000+18000}$$

$$p = \frac{98000+51800+147240}{31000}$$

$$p = \frac{297040}{31000} = 9.58\%$$

or

$$\frac{8000\times12.25}{31000} = 3.16\%$$

$$\frac{5000\times10.36}{31000} = 1.67\%$$

$$\frac{18000\times8.18}{31000} = 4.75\%$$

$= 3.16+1.67+4.75=9.58\%$

b) Calculating the average weighted interest rate on the basis of the recorded revenue on the basis of interest on loans

The average weighted interest rate can be calculated on the basis of the recorded revenue on the basis of interest on loans according to the following formula:

$$P = \frac{G \times p}{100}$$

P represents the total revenue from interest,

G is the principal, on which the interest was calculated,

P is average weighted interest rate.

Example:

If a bank in a certain month agreed the total of KM 31,000 of loan to non-financial corporations at various interest rates and achieved the total revenue on the basis of interest on these loans in the amount of KM 2,969.80, what is the average interest rate?

According to the mentioned formula, we calculate the average achieved interest rate:

$$= \frac{G \times p}{100} \quad 2969{,}8 = \frac{31000 \times p}{100} \quad 2969{,}8 = 310p \quad p = 2969{,}8 : 310 \quad p = 9{,}58\%$$

20.6.2. Average weighted interest rate on deposits

Average weighted interest rates on deposits are calculated for two categories of deposits: deposits of households and deposits of non-financial corporations using one of the two ways for calculating the average weighted interest rates from item 20.6.1. under a) or b) of this methodology.

$$\text{Average weighted interest rate on deposits} = \frac{\text{Total deposits at a certain interest rate}}{\text{Total deposits at various interest rates}} \times \text{The used interest rate}$$

21. Calculating interest rates on outstanding amounts

The existing business includes bookkeeping balances of revolving loans, debts based on credit cards and bookkeeping balances of overnight deposits on the last day of the reporting month. The characteristic of the mentioned instruments is volatility so they are often called volatile instruments.

21.1. Interest rates with overnight deposits, deposits redeemable at notices, debt based on credit card, revolving loan and current account overdrafts

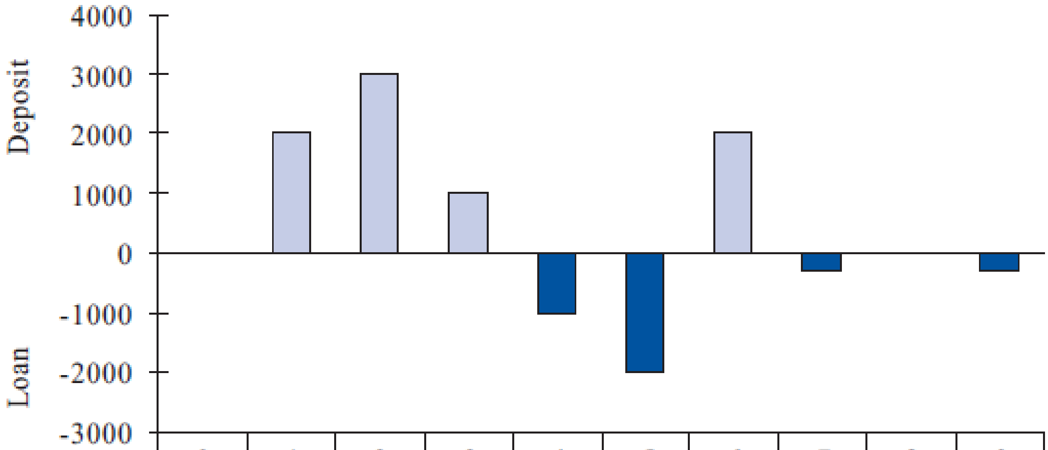
When calculating interest rate with overnight deposits, deposits redeemable at notice, credit card debts, revolving loans and current account overdrafts (hereinafter: volatile instruments), the concept of new business is not related only to new business, but it is expanded and includes the total outstanding amounts of these instruments. As with volatile instruments, the data are submitted which are related to the total balance, there is no distinguishing between existing and new business. Interest rates with these instruments are calculated as weighted average values of interest rates applied on the outstanding amounts of these instruments on the last calendar day in the reporting month.

In addition to the average weighted interest rates calculated on the basis of AAR or NDER, average weighted nominal (agreed) interest rates are calculated. With parties which, depending on the account balance, can be credit (current account overdrafts) or deposit (overnight deposits), the balance on the last calendar day in the reporting month determines whether it is a credit or deposit account.

21.2. Treatment of combined deposit and credit account

With parties which, depending on the account balance, can be credit (current account overdrafts) or deposit (overnight deposits), the balance on the last calendar day in the reporting month determines whether it is a credit or deposit account.

Example: combined credit and deposit account



	t0	t1	t2	t3	t4	t5	t6	t7	t8	t9
Amount	0	2000	3000	1000	-1000	-2000	2000	-300	0	-300

The balance on the last day in the month is taken with purpose of defining whether the account is credit or deposit in the reporting month, i.e. if it is a current account overdraft or overnight deposit. If individual times from t0 to t9 represent one month, then balances in times t1, t2, t3 and t6 – represent an overnight deposit, and in times t4, t5, t7 and t9 – current account overdraft. If each of the times from t0 to t9 represents one day, and the time t9 represents a reporting day, in this example the account is credit, i.e. current account overdraft is in question because only the account balance on the last day in the reporting calendar month is taken into account.

21.3. Treatment of credit cards

The bank only shows interest rates and amounts related to debt (credit) resulting from using a credit card. The debt amount and interest rate applied on debt incurred by using the revolving credit card is included by the bank in the debt based on credit card. If the customer uses a debit card, and overdraft is recorded in the current account, the bank shows the interest rate within the current account overdraft.

The bank, when reporting within existing business related to credit card debt, includes the debt based on credit cards extended as a extended credit card credit (interest rate >0%) and debt approved as a convenience credit card credit (delayed payment with 0% of interest rates). Interest rate is calculated as average weighted interest rate.

Example: Presenting interest rate with debt based on credit card

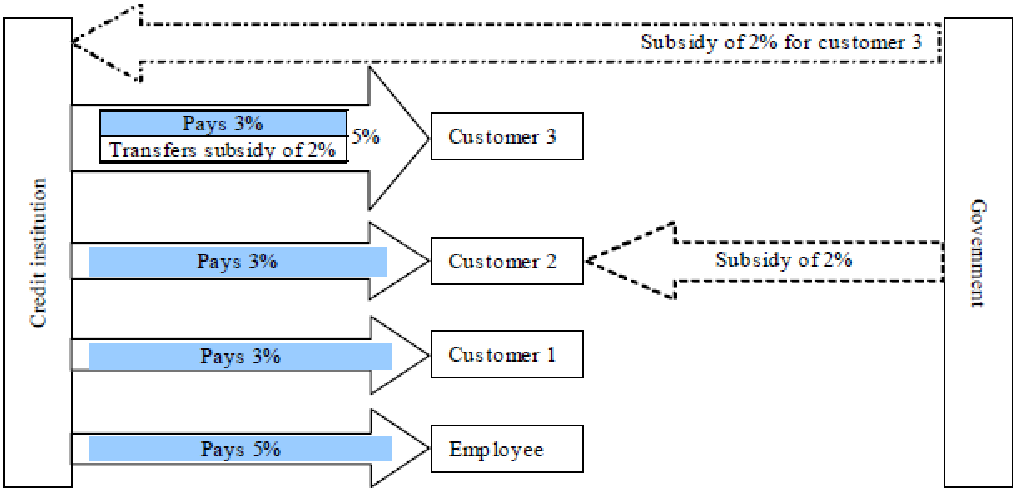
On the last day in the month, the balance of the total debt based on credit card amounts to KM 12,000. Out of that amount, KM 8,000 represents a convenience credit card credit (delayed payment at 0% interest rate) and KM 4,000 is an extended credit card credit at the interest rate of 24% (interest rate > 0%).
Within the bank interest rates, in the existing business the amount of KM 12,000 is shown and the average weighted interest rate which in the example amounts to 8.0%.

If a customer does not repay the agreed minimal debt repayment amount based on credit card in the deadline defined by contract, the bank calculates some penalties which can be in the form of interest rate, i.e. higher interest rate and as such they are included in the interest rate statistics. If the penalties are shown in the form of additional costs or compensations, they are not included in the calculation of AAR or NDER. The approved credit limit within which the customer can incur debt is not new business.

22. Treatment of subsidies loans

For the needs of reporting on bank interest rates, with subsidies loans, the bank always shows interest rates from the view of the bank, so those on the basis of which it creates income.

<u>Example: Interest rates with subsidized deposits</u>

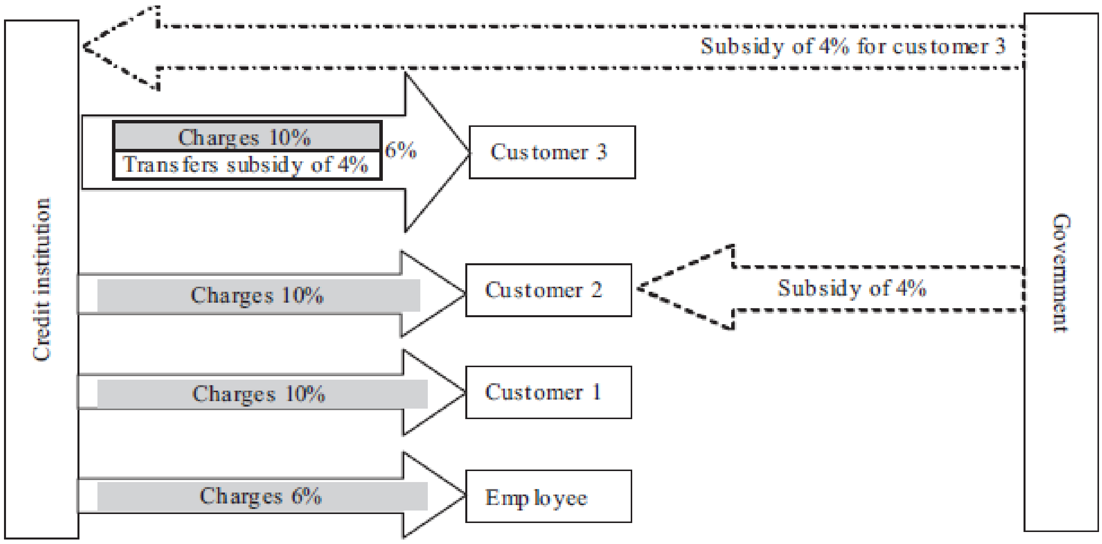


If the customer receives interest rate of 5% at the annual level on the placed deposit, where s/he obtains 3% from the bank, and 2% is subsidized by a third person, <u>which the customer received through the bank,</u> then only 3% is included in the bank interest rate statistics.

For customers 1, 2 and 3, interest rate of 3% is reported, while for employees who have special conditions, interest rate of 5% is reported.

This principle is applied only if a third person receives a subsidy through the bank.

Example: Interest rates with subsidized loans



Also, if the bank calculates interest rates at the rate of 10% annually on loan, and the customer himself/herself pays 6%, and 4% is paid by a third party as a subsidy directly to the bank, the interest rate of 10% annually is shown in the bank interest rate statistics for customers 1,2 and 3. For the employee with special conditions, the interest rate of 6% is reported.

This principle is applied regardless if the third person gives a subsidy directly to the customer or does it through the bank.

Dissemination of interest rate statistics

23. Dissemination of interest rate statistics is performed in accordance with the mentioned overview of deposit and lending interest rates, including data series formed beginning from January 2012, as it follows:

a) Interest rates on loans

1) Interest rates on loans to households in KM,
2) Interest rates on loans to households in KM indexed to foreign currency,
3) Interest rates on revolving loans to households, overdrafts and credit cards,
4) Interest rates on loans to non-financial corporations in KM,
5) Interest rates on loans to non-financial corporations in KM indexed to foreign currency,
6) Interest rates on revolving loans to non-financial corporations, overdrafts and credit cards.

b) Interest rates on deposits

1) Interest rates on deposits of households in KM and in KM indexed to foreign currency,
2) Interest rates on deposits of households in foreign currency (except for euro currency),
3) Interest rates on household deposits in euro currency,
4) Interest rates on deposits of non-financial corporations in KM and in KM indexed to foreign currency,
5) Interest rates on deposits of non-financial corporations in foreign currency (except for euro currency),
6) Interest rates on deposits of non-financial corporations in euro currency.

24. Other lending interest rates on loans in foreign currency are not published currently, due to insufficient presentation of these loans in bank reports, so they cannot be considered a relevant data on the average value for BH.

Transitional and final provisions

25. Data on interest rate statistics of the Central Bank are published monthly, on the web site of the Central Bank of Bosnia and Herzegovina www.cbbh.ba, 4-5 weeks after the expiry of the reporting month, according to the advance realized calendar of publishing data of Financial Sector of BH http://cbbh.ba/index.php?id=29&lang=bs . The data of interest rate

statistics are published within the statistics of Financial Sector in BH http://cbbh.ba/index.php?id=33&lang=sr&sub=mon . Some indicators of interest rate statistics are also published in the IMF monthly publication – International Financial Statistics – IFS.

26. Monthly data on the average weighted interest rates are also available to users by occasional press releases, monthly economic survey and quarterly bulletins and annual report which are published on web site of the Central Bank within the folder Publications http://cbbh.ba/index.php?id=35&lang=bs.

27. The previous interest rate statistics published by the Central Bank for the period from January 2002 until December 2012 is available within folder Archives on the web site of the Central Bank http://cbbh.ba/index.php?id=33&lang=hr&sub=mon_archive.

28. This methodology shall take effect on the date of its delivery.

29. When this methodology takes effect, Additional explanations for filling in the Report 2SR – expanded version and other reports for compiling data for the needs of statistics of monetary and financial sector (MSF), 02/3-192/06 dated 28 November 2006 and, in accordance with additional explanations, also Instruction for calculating average interest rates on loans and deposits of private corporations and households realized in the reporting month, dated from November 2006, cease to be effective.

GOVERNOR

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