Pursuant to Article 35, paragraph 1.1 of the Law No. 03/L-209 on Central Bank of the Republic of Kosovo (Official Gazette of the Republic of Kosovo, No.77 / 16 August 2010) and Article 114 of the Law No. 04/L-093 on Banks, Microfinance Institutions and Non-Bank Financial Institutions (Official Gazette of the Republic of Kosovo, No.11 / 11 May 2012), the Board of the Central Bank of Republic of Kosovo at the meeting held on August 29, 2013 approved the following:

REGULATION
ON EFFECTIVE INTEREST RATE
AND DISCLOSURE REQUIREMENTS

Article 1
Purpose and Scope

1. The purpose of this Regulation is to determine the unified methodology for calculation and disclosure of the effective interest rate on credits granted and the requirements to provide full and accurate information disclosure on Microfinance Institutions (hereafter: *MFIs*) products and services for customers.

2. A unified methodology of calculation and disclosure of effective interest rates and disclosure of other data on products and services, aims to enable customers to make meaningful comparisons among financial institutions regarding the costs and benefits of their products and services and the actual cost of credits, by increasing the transparency in the market.

3. CBK requires that charges for the MFIs products and services should bear a direct relationship to the cost of providing those services, therefore MFIs may be asked by the CBK to justify the charges they impose. The CBK expects that MFIs will determine prices for their products and services as fair and as affordable as possible.

4. This Regulation applies to all MFIs and foreign branches of MFIs, registered by the CBK to operate in the Republic of Kosovo.

Article 2
Definitions

1. All terms used in this Regulation have the same meaning with the following definitions for the purposes of this Regulation:

   a. *Branch of a foreign MFI or branch of other foreign Financial Institution* (hereafter: *branch of foreign MFI*) means a legal person that is organized to operate microfinance activities within the Republic of Kosovo but its parent MFI or *parent Financial Institution* has its head office and holds a license to engage in the activities of microfinance in a jurisdiction other than the Republic of Kosovo;

b. *Credit* means any loan or direct legal commitment to disburse money in exchange for a right to repayment of the amount disbursed and outstanding and to the payment of interest or other charges on such amount;

c. *Interest rate* means the interest rate expressed as a fixed or variable percentage applied on an annual basis to the amount of credit drawn dawn by the MFI.

d. *Effective Interest Rate (*hereafter *EIR)* means the total cost of credit stated as an annual rate of credit's total value, and calculated according to the methodology presented in Article 4 and Annex 1 of this Regulation, by means of which discounted cash inflows are balanced against discounted cash outflows, which refer to credits granted by the MFI. In discounting, the actual (calendar) number of days in a month and a 365/366-day year are used.

e. *Total cost of credit to the customer* means all costs, including interest, commissions, taxes and any other kind of fees which the customer is required to pay for the MFI in connection with the credit agreement/contract; other compulsory expenses in respect of ancillary services relating to the credit agreement, in particular,

f. insurance premiums are also included if, in addition, the conclusion of a service contract is compulsory in order to obtain the credit or to obtain it on the terms and conditions marketed and if that service is paid by the MFI and charged to the customer or if it is not possible for the client to choose the provider of that specific required service;

g. *Advertisement* means every form of advertising, whether in a publication, by television or radio, by display of notices, signs, labels, brochures, circulars, catalogues, price lists, internet or other material, or in any other way, and references to the publishing of advertisements of interest rates shall be construed accordingly.

Article 3
Disclosure Requirements

1. Data on credits advertised by MFIs at their premises or in the media, which directly or indirectly show interest rate or some other information considered as a part of a credit cost shall also contain the EIR.

2. An advertisement shall not be misleading or inaccurate and shall not misrepresent a credit contract. It shall not refer to a product or service as "free" or "no cost" (or contain a similar term) if any activity fee may be imposed on it.

3. EIR shall not be less conspicuous than other data and MFIs, when disclosing it shall use the term "*Effective Interest Rate*". If the term is repeated more than once, the abbreviation EIR may be used thereafter. EIR shall be reported by rounding it to 2 decimal places.

4. Prior to the selection of a product or service, and before the conclusion of a contract, MFIs shall provide to their customers complete information about terms and conditions, deadlines, interest rate and EIR, and other fees that the customer is required to pay to the third parties in order to obtain the credit. MFIs shall also inform their customers prior to the conclusion of contracts, about customer's rights and responsibilities, including any possible future arising costs and penalties, as well as the accompanying risks in getting such a product or service. This information shall be available for the customer in writing and prior to signing the contract.

5. Before concluding a credit contract, MFIs shall inform their customers about their rights to obtain the draft of contract free of charge. MFIs shall provide the customer with a draft of a contract for the product or service he is interested in, on his request.

6. MFIs shall not change the contents of any agreement/contract, for products or services, signed by their customers, without the prior written notification of every individual customer that is subject to such a change. The notification shall be delivered at least one (1) month before the change becomes effective and it shall contain accurate and full information, expressed in an understandable way for the customer.

7. MFIs shall compile and approve the calculation methodology/policy used on setting their credits prices which shall determine with their internal regulations, the following:

   a. Interest rate applied on credits and EIR on credits calculated in accordance with the requirements of this regulation; and

   b. Commissions, fees and other expenses charged for their products and services at the time of conclusion of contract, and possible future arising costs in case certain conditions are fulfilled.

Article 4
The Methodology for Calculation of EIR on Credits

1. The EIR is calculated as specified in the mathematical formula presented in the Annex 1 of this Regulation.

2. For the purpose of calculating the EIR, the total cost of credit to the consumer provided with paragraph g, of Article 2 of this regulation, shall not include:

a. Expenses that are unknown on the calculation date, but which may occur during the loan disbursement;

b. Expenses payable from the customer in case of not meeting any of the commitments provided for in the credit agreement;

c. Expenses different from the purchasing price, the customer should pay for the purchasing of commodities and services, if the buying is performed in cash or by cash flow, on condition that MFI will not be the last beneficiary of these payments;

d. Expenses of the customer to pay other parties (for example: a public notary, tax authority, mortgage register) while drafting the credit agreement and any other

expenditure for registration and warranty. These expenses shall be clearly disclosed to the customer before the conclusion of contract;

e. Expenses for insurance premiums compulsory to obtain the credit or obtain it with the terms and condition offered, in cases when they are paid by the customer to the insurance company that he is able to choose himself, which in these cases shall be disclosed by MFIs in addition to the EIR, explaining that the insurance premium is not included in the calculation of the EIR.

f. Expenses for insurances which are not compulsory to obtain the credit or obtain it on the terms and conditions offered;

g. Each expense that customers have to pay to the MFI only when:

i. The credit granted is not totally or partially used;
ii. The customer applies for a change in the payments deadline and such an application is accepted by the MFI.

3. Expenses for maintaining an account records of both payment transactions and drawdowns, the costs of using a means of payment transaction and drawdowns, and other costs relating to credit payment transactions, shall be included in the total cost of credit to the customer, unless the opening of the account for these services is optional for the customer (which means that customers are not obliged to open an account with a specific financial institution for these services) and the costs of maintaining the account have been clearly and separately shown in the credit agreement or in any other agreement concluded with the consumer.

4. The EIR is calculated based on the assumption that the credit agreement/contract is valid over the agreed period and parties meet their liabilities in line with specifications and the timeline agreed therein.

5. When the credit agreements contain provisions, providing for changes to the interest rates, or other expenses included in the EIR, but immeasurable at the time this rate is calculated, the EIR is calculated upon the assumption that the interest rate and other expenses will remain unchanged (fixed) until the completion of the obligations.

6. The MFI shall set out in the credit contract the way it will notify the client each time the basic elements for the calculation of EIR are changed and this notification has to be disclosed beforehand.

7. When concluding a credit contract, an MFI shall present the repayment schedule (amortization plan), together with a clearly stated EIR, to the customer. In addition MFIs shall enclose a copy of a repayment schedule, signed by the customer, with the respective credit file.

8. Where necessary, the additional assumptions set out in Annex 1 if applicable may be used in calculating the EIR.

9. MFIs shall submit to the Central Bank of the Republic of Kosovo, on a quarterly basis, reports on the EIR on all products and services they offer to their customers, within 15 (fifteen) days after the end of each quarter.

Article 5
Elements of Credit Agreement (Contract)

1. Each credit agreement (contract) shall be drown up in a written form, endorsed by the contracting parties, and shall disclose at least the following elements:

   a. Type of credit (installment, margins etc);
   b. Purpose of credit usage;
   c. Identities and geographical addresses of the contracting parties;
   d. The credit specifications concerning the amount, monetary currency, issuing date, maturity date, interest rate and its type (fixed or variable), directing index, euribor, libor etc.) margin, EIR, the frequency of interest rate change or its comprising parts, periodical value of the credit repayment (installment) and the settlement date or period;
   e. The initial contribution of the borrower (if applicable) or different commissions when the loan is received and settled;
   f. In the case of a credit in the form of a deferred payment for a specific good or service or in the case of linked credit agreements, the respective good or service and its cash price;
   g. The total amount payable by the customer, calculated at the time the credit agreement is concluded;
   h. Where applicable, the charges for maintaining one or several accounts recording both payment transactions and drawdowns for the credit, unless opening of an account is optional, together with charges for using a means of payment for both payment transactions and drawdowns, and any other charges deriving from the credit agreement and the conditions under which those charges may be charged;
   i. The interest rate applicable in the case of late payments, as applicable at the time of the conclusion of the credit agreement and the arrangements for its adjustment and, where applicable, any charges or penalties payable for default;
   j. A warning regarding consequences of missing payments;
   k. Where applicable, a statement that notarial, registration or any other required fees for third parties, must be paid to obtain the credit;

   l. The type of collateral (if existent);
   m. The parties liabilities and penalties, and conditions when they are applied;
   n. The way the contract specifications might be changed and the way it is terminated;
   o. The number of endorsed original copies of the contract and the way they are possessed by the parties.

2. At the initial credit granting process or at the moment of credit restructuring, MFI's shall provide the customer with:

   a. The credit amortization plan, at the moment of concluding the credit agreement and in cases of restructuring, which shall indicate the payments owing and the periods and conditions relating to the payment of such amounts, the table shall contain a breakdown of each repayment showing principal amortization, the interest calculated on the basis of the interest rate and, where applicable any additional costs;
   b. The schedule of all pre-defined and known payments which the customer shall pay during the process of receiving the credit and during the period of its duration, fixed or variable. MFIs shall disclose here both the expenses that are included in the calculation of the EIR and those that are not included;

c. Possible future arising costs and penalties and conditions when they apply;
d. In cases of variable interest rate, a written warning of the risk from the increase of interest rate during the credit duration as the result of increase of orientating index.
e. Prepayment penalty. If a penalty may be imposed for paying all or part of the principal before the date on which the principal is due, this must be disclosed to the borrower including how the penalty will be computed.

Article 6
Other Disclosures

1. All MFIs shall prepare a price list of all charges for all products and services they render, disclosing them in conspicuous manner, and that list shall be made available to all inquiring customers.

2. For this purpose, MFIs shall ensure that each of its branch offices dealing with retail customers shall have printed price lists which contain the required information ready to be delivered to an inquiring customer. Such information should be conspicuous and published at the MFI's web page, as well.

3. MFI shall ensure that the price lists are regularly updated and shall not impose charges on customers in excess of the disclosed structure or compute such charges in a manner inconsistent with the disclosed basis.

Article 7
Infractions, Penalties and Remedial Measures

Any violation of the provisions of this Regulation shall be subject to the remedial measures and penalties provided for in Articles 105 and 106 of the Law no.04/L-093.

Article 8
Transitional Provisions

1. MFI-s shall meet the requirements of the above provisions within one-hundred-eighty (180) days after the effective date of this Regulation.

2. The provisions of this Regulation do not apply for credit agreements concluded between financial institutions and for credit agreements concluded before its entry into force.

Article 9
Entry into Force

This Regulation shall enter into force at after its approval by the Board of CBK.

The Chairman of the Board of Central Bank of the Republic of Kosovo

_____
Mejdi Bektashi

Annex No. 1

The Methodology for Calculation of the EIR for Credits

The basic equation for calculating the EIR equates, on yearly basis, on one hand the total present value of drawdowns, by subtracting every withhold expenditure (for example administrative and/or management expenditures etc.) placed under the customer's disposal according to the loan agreement and on the other hand the total present value of repayments and payments of charges:

$$\sum_{k=1}^{m} C_k (1+X)^{-t_k} = \sum_{l=1}^{m'} D_l (1+X)^{-S_l}$$

where:
- X   is the EIR which may be calculated (basing on algebra or on a computer program) when the other terms in the equation are known by the contract or differently. the EIR

- m   is the total number of installment credit if the credit is disbursed by installments (cash flow), paid from the MFI.

- k   is the proceeding number of installments credit, if the credit is disbursed by installments (cash flow) paid from the MFI,(drawn), therefore $1 < k < m$ and/or $1 = k = m$.

- C_k is the loans total present value (cash flow) on the client's disposal during k period.

- t_k is the interval stated in years and fractions of one year between the first cash flow put under the client's disposal (if the loan is flowed by installments) and the date of each ensuing installment credit put under the client's disposal, that is $t1 = 0$.

- m' is the total number of installments(cash flows) paid by the client for the loan settlement and/or expenditures payment.

- l   is the ensuing number of the installments paid by the client for the loan settlement (repayment or expenditure payment).

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- D_l is the value of the installment (cash flow) or payment expenses paid by the client during period l.

- S_l the interval expressed in years and fractions of one year between the date of the first cash flow put at the client's disposal (in case the loan is flowed by installments) or the date of credit flow, if the credit flow is complete and the date of each installment for settlement and/or the ensuing expenses paid by the client.

I.   Remarks:

1. The amounts paid by both parties at different times shall not necessarily be equal and shall not necessarily be paid at equal intervals.

2. The original date must be the date when the MFI pays the first installment of credit flow if the loan is flowed by unsettlements or the date when the loan is disbursed if the loan under the client's disposal is disbursed completely.

3. Intervals between dates used in the calculations shall be expressed in years or in fractions of a year. A year is presumed to have 365 days (or 366 days for leap years), 52 weeks or 12 equal months. An equal month is presumed to have 30.41666 days (i.e. 365/12) regardless of whether or not it is a leap year.

4. The result of the calculation shall be expressed with an accuracy of at least one decimal place. If the figure at the following decimal place is greater than or equal to 5, the figure at that particular decimal place shall be increased by one.

5. The equation can be rewritten using a single sum and the concept of flows (A_k), which will be positive or negative, in other words either paid or received during periods 1 to k, expressed in years, i.e.:

$$S = \sum_{k=1}^{n} A_k (1 + X)^{-t_k},$$

S **-** is the present balance of flows. If the aim is to maintain the equivalence of flows, the value will be zero.

MFI shall give assurance that the applicable solution methods will produce an outcome equal to the results of examples presented in the Appendix II below.

II.   Additional assumptions for the calculation of the EIR:

1. If a credit agreement gives the consumer freedom of drawdown, the total amount of credit shall be deemed to be drawn down immediately and in full;

2. If a credit agreement provides different ways of drawdown with different charges or borrowing rates, the total amount of credit shall be deemed to be drawn down at the highest charge and borrowing rate applied to the most common drawdown mechanism for this type of credit agreement;

3. If a credit agreement gives the consumer freedom of drawdown in general but imposes, amongst the different ways of drawdown, a limitation with regard to the amount and period of time, the amount of credit shall be deemed to be drawn down on the earliest date provided for in the agreement and in accordance with those drawdown limits;

4. If there is no fixed timetable for repayment, it shall be assumed:

a. that the credit is provided for a period of one year; and

b. that the credit will be repaid in 12 equal installments and at monthly intervals;

5. If there is a fixed timetable for repayment but the amount of such repayments is flexible, the amount of each repayment shall be deemed to be the lowest for which the agreement provides;

6. Unless otherwise specified, where the credit agreement provides for more than one repayment date, the credit is to be made available and the repayments made on the earliest date provided for in the agreement;

7. In the case of an overdraft facility the total amount of credit shall be deemed to be drawn down in full and for the whole duration of the credit agreement. If the duration of the credit agreement is not known the EIR shall be calculated on the assumption that the duration of the credit is three months;

8. If different interest rates and charges are offered for a limited period or amount, the interest rate and the charges shall be deemed to be the highest rate for the whole duration of the credit agreement;

9. For consumer credit agreements for which a fixed borrowing rate is agreed in relation to the initial period, at the end of which a new borrowing rate is determined and subsequently periodically adjusted according to an agreed indicator, the calculation of the EIR shall be based on the assumption that, at the end of the fixed borrowing rate period, the borrowing rate is the same as at the time of calculating the effective interest rate, based on the value of the agreed indicator at that time.

Annex No. 2

Examples of Calculation of the EIR on Credits

The aim of the examples of the calculation of the EIR is to illustrate the application of the calculation of the EIR as regards the formula presented above with Annex No.1, and the

assumptions used for the calculation of this rate. Using the examples will also help MFI-s to implement this regulation.

The following examples are taken from the Study on the Calculation of the Annual Percentage Rate of Charge for Consumer Credit Agreements, the Final Report issued by the European Commission, Directorate – General Health and Consumer Protection in 2009 which is available at the website: http://ec.europa.eu/consumers/rights/docs/study_APR_en.pdf , with some additional changes by the CBK, for their adoption with the requirements of this Regulation.

The Table 1 below shows some of the common features used and the following examples of different credit products.

Table 1

Feature	Installment credits
Amount	€ 6000 (exceptions 11, 14, 15)
Duration	2 years (exceptions 1, 2, 15, 17)
Frequency of payments	Monthly (exceptions 1, 2, 14)
Interest rate	9% yearly (exceptions 14, 15)
Other charges and fees (when exist)	Administrative costs €60
Insurance costs (when exist)	5% of the initial amount of credit

The Table 2 below shows the following set of examples of this annex, including a brief description of them and their most distinguishing features.

Table 2

Number	Description	Feature
	Installment credits	
1	Installment credit with a single repayment	Duration and number of repayments
2	Installment credit with four annual installments	Duration and frequency of repayments
3	Installment credit with monthly installments	Monthly Installments
4	Installment credit with the first repayment in a specific number of days	First repayment period with different length
5	Installment credit with setup costs	Setup charges
6	Installment credit with regular charges	Regular charges
7	Installment credit with setup costs and regular insurance premiums	Regular insurance premiums

8	Installment credit with setup costs and single sum insurance premium which is financed	Single-sum insurance premium financed
9	Balloon\ type credit with setup costs and regular insurance premiums	Balloon payment
10	Installment credit with an advance payment and setup costs	Advance payment
11	Leasing agreement	Advance payment plus final payment
12	Installment credit with set-up costs and decreasing installments	Decreasing installments
13	Installment credit with set-up costs and increasing installments	Increasing installments
14	Installment credit with flexibility in the amount of the repayments	Flexibility in the amount of the repayments
15	Installment credit with a few number of repayments and high charges	Few number of repayments and high charges
16	Installment credit with increasing borrowing rate	Increasing borrowing rate
17	Credit agreement without a fixed timetable for repayment	No fixed timetable for repayment

EXAMPLES:

The following examples illustrate the calculation of the EIR on different products offered by MFI-s and cover a wide range of elements and characteristics they are distinguished with. The examples should be interpreted as notional examples in the sense that the amounts, charges or interest rates assumed are only illustrative of the market, and market products might combine the elements of different examples:

EXAMPLE 1

Credit agreement for a total amount of credit of €6000 repayable in a single installment of € 6270 in six months.

The equation becomes:

$$6000 = 6270 \frac{1}{(1 + X)^{0.5}}$$

giving X=9.202500%, i.e. an EIR of 9.2%.

EXAMPLE 2

Credit agreement for a total amount of credit of €6000 repayable in 4 equal annual installments of €1852.01.

The equation becomes:

$$6000 = 1852.01 \frac{1}{(1 + X)^1} + 1825.01 \frac{1}{(1 + X)^2} + 1825.01 \frac{1}{(1 + X)^3} + 1825.01 \frac{1}{(1 + X)^4}$$

or:

$$6000 = 1852.01 \frac{1 - \frac{1}{(1+X)^4}}{X}$$

giving X=8.999951%, i.e. an EIR of 9.0%.

EXAMPLE 3

Credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments of €274.11.

The equation becomes:

$$6000 = 274.11 \frac{1}{(1+X)^{1/12}} + 274.11 \frac{1}{(1+X)^{2/12}} + \cdots + 274.11 \frac{1}{(1+X)^{24/12}}$$

or:

$$6000 = 274.11 \frac{1 - \frac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 9.381299%, i.e. an EIR of 9.4%.

EXAMPLE 4

The credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments, the first of which must be paid in a specific number of days from the conclusion of the agreement.

Let us first consider the case that the number of days to the first installment is 20 in a year with 365 days. Using a borrowing rate (nominal rate) of 9%, the monthly installment is €273.41, and the equation becomes:

$$6000 = 273.41 \frac{1}{(1+X)^{20/365}} + 273.41 \frac{1}{(1+X)^{20/365+1/12}} + \cdots + 273.41 \frac{1}{(1+X)^{20/365+23/12}} =$$

$$= (1+X)^{1/12-20/365} \left[273.41 \frac{1}{(1+X)^{1/12}} + 273.41 \frac{1}{(1+X)^{2/12}} + \cdots \right.$$

$$\left. + 273.41 \frac{1}{(1+X)^{24/12}} \right]$$

or:

$$6000 = 273.41 \; x \; (1+X)^{1/12-20/365} \frac{1 - \frac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 9.381531%, i.e. an EIR of 9.4%.

If the period of 20 days belongs to a leap year, using the same borrowing rate of 9% the monthly installment remains the same as before to a precision of two decimals. The new equation becomes:

$$6000 = 273.41 \frac{1}{(1+X)^{20/366}} + 273.41 \frac{1}{(1+X)^{20/366+1/12}} + \cdots + 273.41 \frac{1}{(1+X)^{20/366+23/12}} =$$

$$= (1+X)^{1/12-20/366}\left[273.41\frac{1}{(1+X)^{1/12}} + 273.41 \frac{1}{(1+X)^{2/12}} + \cdots\right.$$

$$\left. + 273.41 \frac{1}{(1+X)^{24/12}}\right]$$

or:

$$6000 = 273.41 \; x \; (1+X)^{1/12-20/366} \frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 9.383024%, i.e. an EIR of 9.4%.

Now consider the case that the number of days to the first repayment is one month plus a period of 20 days in a year with 365 days. For the borrowing rate of 9%, the monthly installment is significantly higher, reflecting the longer duration of the credit, and amounts to €275.45. The equation becomes:

$$6000 = 275.45 \frac{1}{(1+X)^{20/365}} + 275.45 \frac{1}{(1+X)^{20/365+1/12}} + \cdots + 275.45 \frac{1}{(1+X)^{20/365+24/12}} =$$

$$= (1+X)^{-20/365}\left[275.45 \frac{1}{(1+X)^{1/12}} + 275.45 \frac{1}{(1+X)^{2/12}} + \cdots + 275.45 \frac{1}{(1+X)^{24/12}}\right]$$

or:

$$6000 = 275.45 \; x \; (1+X)^{-20/365} \frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 9.377528%, i.e. an EIR of 9.4%.

Finally, if the number of days to the first repayment is one month plus a period of 20 days in leap year, the monthly installments remains the same as before to a precision of two decimals and the equation becomes:

$$6000 = 275.45 \frac{1}{(1+X)^{20/366+1/12}} + 275.45 \frac{1}{(1+X)^{20/366+2/12}} + \cdots + 275.45 \frac{1}{(1+X)^{20/366+24/12}} =$$

$$= (1+X)^{-20/366}\left[275.45 \frac{1}{(1+X)^{1/12}} + 275.45 \frac{1}{(1+X)^{2/12}} + \cdots + 275.45 \frac{1}{(1+X)^{24/12}}\right]$$

or:

$$6000 = 275.45 \; x \; (1+X)^{-20/366} \frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 9.378904%, i.e. an EIR of 9.4%.

EXAMPLE 5

The credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments of €274.11. Administrative charges of €60 payable on conclusion of the agreement.

The equation becomes:

$$6000 = 60 + 274.11\frac{1}{(1+X)^{1/12}} + 274.11\frac{1}{(1+X)^{2/12}} + \cdots + 274.11\frac{1}{(1+X)^{24/12}}$$

or:

$$6000 = 60 + 274.11\frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 10.474957%, i.e. an EIR of 10.5%.

Compared to example 3, the EIR increases as a result of the additional costs.

EXAMPLE 6

The credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments of €274.11. Administrative charges of €60 spread over the repayments.

The monthly payment becomes:

$$A = 274.11 + \frac{60}{24} = €\, 276.61$$

and the equation becomes:

$$6000 = 276.61\frac{1}{(1+X)^{1/12}} + 276.61\frac{1}{(1+X)^{2/12}} + \cdots + 276.61\frac{1}{(1+X)^{24/12}}$$

or:

$$6000 = 276.61\frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 10.368635%, i.e. an EIR of 10.4%.

Compared to example 5, the EIR decreases as a result of the distribution of the payment of the costs over time.

EXAMPLE 7

The credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments of €274.11. Administrative charges of €60 payable on conclusion of the agreement plus insurance costs of 5% of the credit limit spread over the repayments.

The costs associated with insurance premiums must be included in the total cost of the credit if insurance is compulsory in order to obtain the credit or to obtain it on the terms and conditions marketed and this service is done by the MFI. It is assumed this is the case.

The monthly payment becomes:

$$A = 274.11 + \frac{5\% \; x \; 6000}{24} = €\, 286.61$$

and the equation becomes:

$$6000 = 60 + 286.61\frac{1}{(1+X)^{1/12}} + 286.61\frac{1}{(1+X)^{2/12}} + \cdots + 286.61\frac{1}{(1+X)^{24/12}}$$

or:

$$6000 = 60 + 286.61\frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 15.506941%, i.e. an EIR of 15.5%.

EXAMPLE 8

The credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments. Administrative charges of €60 payable on conclusion of the agreement plus single-sum insurance costs of 5% of the credit limit which are financed.

The costs associated with insurance premiums must be included in the total cost of the credit if insurance is compulsory in order to obtain the credit or to obtain it on the terms and conditions marketed and if this service is done by the MFI. It is assumed this is the case.

The amount financed is given by the sum of the amount of the credit and the insurance costs:

$$6000 + 5\% \; x \; 6000 = €\, 6300$$

and the monthly installment which provides full repayment of this amount is €287.81.

The equation becomes:

$$6000 = 60 + 287.81\frac{1}{(1+X)^{1/12}} + 287.81\frac{1}{(1+X)^{2/12}} + \cdots + 287.81\frac{1}{(1+X)^{24/12}}$$

or:

$$6000 = 60 + 287.81\frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 15.993938%, i.e. an EIR of 16.0%.

Compared to example 7, both the installments and the EIR are higher reflecting the financing costs of insurance.

EXAMPLE 9

Balloon-type credit agreement for a total amount of credit of €6000 repayable in 23 equal monthly installments plus a final payment in month 24th representing 25% of the initial amount of the credit. Administrative charges of €60 payable on conclusion of the agreement plus insurance costs of 5% of the credit limit spread over the repayments.

The costs associated with insurance premiums must be included in the total cost of the credit if insurance is compulsory in order to obtain the credit or to obtain it on the terms and conditions marketed and if this service is done by the MFI. It is assumed this is the case.
.
Using a borrowing rate (nominal rate) of 9%, the monthly installment which provides full repayment of the credit is €225.44. The monthly payment for the first 23 months then becomes:

$$A_{1-23} = 225.44 + \frac{5\% \times 6000}{24} = €\ 237.94$$

and the payment in month 24 is:

$$A_{24} = 25\% \times 6000 + \frac{5\% \times 6000}{24} = €\ 1512.50$$

The equation becomes:

$$6000 = 60 + 237.94\frac{1}{(1+X)^{1/12}} + 237.94\frac{1}{(1+X)^{2/12}} + \cdots + 237.94\frac{1}{(1+X)^{23/12}} + 1512.50\frac{1}{(1+X)^{24/12}}$$

or:

$$6000 = 60 + 237.94\frac{1 - \dfrac{1}{(1+X)^{23/12}}}{(1+X)^{1/12} - 1} + 1512.50\frac{1}{(1+X)^{24/12}}$$

giving X= 14.610574%, i.e. an EIR of 14.6%.

This example illustrates the case of credits which offer the postponement of the repayment of a large part of the credit to the end of the agreement. The higher credit risk due to the huge last payment can justify the requirement of insurance.

EXAMPLE 10

The credit agreement for a total amount of credit of €6000 repayable in 24 equal monthly installments plus an advance payment representing 25% of the initial amount of the credit. Administrative charges of €60 payable on conclusion of the agreement.

The advance payment is never a part of the financing operation. The amount of the credit is then:

$$6000 - 25\% \times 6000 = €\ 4500$$

Using a borrowing rate (nominal rate) of 9%, the monthly installment which provides full repayment of the credit is €205.58.

The equation becomes:

$$4500 = 60 + 205.58 \frac{1}{(1+X)^{1/12}} + 205.58 \frac{1}{(1+X)^{2/12}} + \cdots + 205.58 \frac{1}{(1+X)^{24/12}}$$

or:

$$4500 = 60 + 205.58 \frac{1 - \dfrac{1}{(1+X)^{24/12}}}{(1+X)^{1/12} - 1}$$

giving X= 10.843883%, i.e. an EIR of 10.8%.

This example illustrates hire-purchases agreements without a special final payment and also practices used by certain specialist "vendor-credit" establishments.

EXAMPLE 11

The credit agreement of the hire purchase type for goods with a price of €20000 over a period of 2 years. The agreement stipulates an advance payment of 50% of the price, 23 monthly installments plus a final payment of 10% of the price. Administrative charges of €60 payable on conclusion of the agreement.

The advance payment is never a part of the financing operation. The amount of the credit is then:

$$20000 - 50\% \; x \; 20000 = \; €\,10000$$

The payment in month 24 is:

$$A_{24} = 10\% \; x \; 20000 = €\,2000$$

Using a borrowing rate (nominal rate) of 9%, the monthly installment which provides full repayment of the credit is €395.58.

The equation becomes:

$$10000 = 60 + 395.58 \frac{1}{(1+X)^{1/12}} + 395.58 \frac{1}{(1+X)^{2/12}} + \cdots + 395.58 + 2000 \frac{1}{(1+X)^{24/12}}$$

or:

$$10000 = 60 + 395.94 \frac{1 - \dfrac{1}{(1+X)^{23/12}}}{(1+X)^{1/12} - 1} + 2000 \frac{1}{(1+X)^{24/12}}$$

giving X= 9.957314%, i.e. an EIR of 10.0%.

This example combines the two special payments from the two previous examples

EXAMPLE 12

The credit agreement for a total amount of credit of €6000 with two payment periods of 11 and 3 months respectively. The second period installment corresponds to 60% of the first-period installment. Administrative charges of €60 payable on conclusion of the agreement.

Using the borrowing rate (nominal rate) of 9%, the respective monthly installments are € 345.99 and € 207.59.

The equation becomes:

$$
\begin{aligned}
6000 = {} & 60 + 345.99\,\frac{1}{(1+X)^{1/12}} + \cdots + 345.99\,\frac{1}{(1+X)^{11/12}} + 207.59\,\frac{1}{(1+X)^{12/12}} + \cdots \\
& + 207.59\,\frac{1}{(1+X)^{24/12}} = 60 + 345.99\,\frac{1}{(1+X)^{1/12}} + \cdots + 345.99\,\frac{1}{(1+X)^{11/12}} + \\
& + \frac{1}{(1+X)^{11/12}}\left[207.59\,\frac{1}{(1+X)^{1/12}} + \cdots + 207.59\,\frac{1}{(1+X)^{13/12}}\right]
\end{aligned}
$$

or:

$$
6000 = 60 + 345.99\,\frac{1 - \dfrac{1}{(1+X)^{11/12}}}{(1+X)^{1/12} - 1} + 207.59\,\frac{1}{(1+X)^{11/12}} \times \frac{1 - \dfrac{1}{(1+X)^{13/12}}}{(1+X)^{1/12} - 1}
$$

giving X= 10.631509 %, i.e. an EIR of 10.6%.

EXAMPLE 13

The credit agreement for a total amount of credit of €6000 with two payment periods of 11 and 13 months respectively. The first period installment corresponds to 60% of the second-period installment. Administrative charges of €60 payable on conclusion of the agreement.

Using the borrowing rate (nominal rate) of 9%, the respective monthly installments are € 203.61 and € 339.35. The second installment is 1/0.6-1=66.666667% higher than the first installment.

The equation becomes:

$$
\begin{aligned}
6000 = {} & 60 + 203.61\,\frac{1}{(1+X)^{1/12}} + \cdots + 203.61\,\frac{1}{(1+X)^{11/12}} + 339.35\,\frac{1}{(1+X)^{12/12}} + \cdots \\
& + 339.35\,\frac{1}{(1+X)^{24/12}} = 60 + 203.61\,\frac{1}{(1+X)^{1/12}} + \cdots + 203.61\,\frac{1}{(1+X)^{11/12}} \\
& + \frac{1}{(1+X)^{11/12}}\left[339.35\,\frac{1}{(1+X)^{1/12}} + \cdots + 339.35\,\frac{1}{(1+X)^{13/12}}\right]
\end{aligned}
$$

or:

$$
6000 = 60 + 203.61\,\frac{1 - \dfrac{1}{(1+X)^{11/12}}}{(1+X)^{1/12} - 1} + 339.35\,\frac{1}{(1+X)^{11/12}} \times \frac{1 - \dfrac{1}{(1+X)^{13/12}}}{(1+X)^{1/12} - 1}
$$

giving X= 10.354709 %, i.e. an EIR of 10.4%.

EXAMPLE 14

The credit agreement for a total amount of credit of €1000 repayable in two installments of either €700 after one year and €500 after two years, or €500 after one year and €700 after two years.

The borrowing rates (nominal rate) are 13.90% and 12.32% for the first and the second case respectively.

In the first case the equation becomes:

$$1000 = 700 \frac{1}{(1+X)^1} + 500 \frac{1}{(1+X)^2}$$

giving X = 13.898667%.

In the second case the equation becomes:

$$1000 = 500 \frac{1}{(1+X)^1} + 700 \frac{1}{(1+X)^2}$$

giving X = 12.321246%.

According to assumption (e), in those cases where there is a fixed timetable for repayment but the amount of such repayments is flexible, the amount of each repayment shall be deemed to be the lowest for which the agreement provides. Hence, we should choose 500 as the first repayment, meaning that the regulatory EIR is that of the second case, i.e. an EIR of 12.3%.

This example shows that the annual percentage rate of charge depends on the payment scheme and that stating the total cost of the credit in the prior information or in the credit agreement is of no benefit to the consumer. Despite the total cost of credit being € 200 in both cases, the rates are different.

EXAMPLE 15

The credit agreement for a total amount of credit of €1000 repayable in four equal monthly installments calculated by applying a borrowing rate (nominal rate) of 18%, plus administrative charges of €60 spread over the payments.

The monthly installment which provides full repayment of the credit is € 259.44, and the monthly payment becomes:

$$A = 259.44 + \frac{60}{4} = € 274.44$$

The equation becomes:

$$1000 = 274 \frac{1}{(1+X)^{1/12}} + 274.44 \frac{1}{(1+X)^{2/12}} + 274.44 \frac{1}{(1+X)^{3/12}} + 274.44 \frac{1}{(1+X)^{4/12}}$$

or:

$$1000 = 274.44 \frac{1 - \dfrac{1}{(1+X)^{4/12}}}{(1+X)^{1/12} - 1}$$

giving X= 57.138738%, i.e. an EIR of 57.1%.

EXAMPLE 16

The credit agreement for a total amount of credit of €6000 repayable in 24 monthly installments. The borrowing rate (nominal rate) increases from 5% to 9% after the first year and remains in this new level until the end of the agreement. Administrative charges of €60 payable on conclusion of the agreement.

According to assumption (i), if different interest rates and charges are offered for a limited period or amount, the interest rate and the charges shall be deemed to be the highest rate for the whole duration of the credit agreement. Therefore, the EIR of this agreement should be calculated assuming a borrowing rate of 9% for the 4 years. The calculations coincide with example 5, which provided an EIR of 10.5%.

EXAMPLE 17

The credit agreement for a total amount of credit of €6000 and administrative charges of €60.

The credit agreement does not stipulate a fixed timetable for repayments and thus, assumption (d) should be applied. Accordingly, it is assumed: (i) that the credit is provided for a period of one year, and (ii) that the credit will be repaid in 12 equal installments and at monthly intervals.

The monthly payment which provides full repayment of the credit and interest charges in 12 months is €524.71.

If the agreement stipulates that administrative charges are payable on conclusion of the agreement, the equation becomes:

$$6000 = 60 + 524.71 \frac{1}{(1+X)^{1/12}} + 524.71 \frac{1}{(1+X)^{2/12}} + \cdots + 524.71 \frac{1}{(1+X)^{12/12}}$$

or:

$$6000 = 60 + 524.71 \frac{1 - \dfrac{1}{(1+X)^{12/12}}}{(1+X)^{1/12} - 1}$$

giving X= 11.461367%, i.e. an EIR of 11.5%.

If the agreement does not stipulate a fixed timetable for the payment of the administrative charges, the charges are included in the equal monthly installment. The monthly payment then becomes:

$$A = 524.71 + \frac{60}{12} = € 529.71$$

and the equation becomes:

$$6000 = 529.71 \frac{1}{(1+X)^{1/12}} + 529.71 \frac{1}{(1+X)^{2/12}} + \cdots + 529.71 \frac{1}{(1+X)^{12/12}}$$

or:

$$6000 = 529.71 \frac{1 - \dfrac{1}{(1+X)^{12/12}}}{(1+X)^{1/12} - 1}$$

giving X= 11.342929 %, i.e. an EIR of 11.3%.