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in writing and subject to the Board's Regulation Z (12 CFR part 226);

(ii) A communication by an institution about the payment of overdrafts in response to a consumer-initiated inquiry about deposit accounts or overdrafts. Providing information about the payment of overdrafts in response to a balance inquiry made through an automated system, such as a telephone response machine, ATM, or an institution's Internet site, is not a response to a consumer-initiated inquiry for purposes of this paragraph;

(iii) An advertisement made through broadcast or electronic media, such as television or radio;

(iv) An advertisement made on outdoor media, such as billboards;

(v) An ATM receipt;

(vi) An in-person discussion with a consumer;

(vii) Disclosures required by federal or other applicable law;

(viii) Information included on a periodic statement or a notice informing a consumer about a specific overdrawn item or the amount the account is overdrawn;

(ix) A term in a deposit account agreement discussing the institution's right to pay overdrafts;

(x) A notice provided to a consumer, such as at an ATM, that completing a requested transaction may trigger a fee for overdrawing an account, or a general notice that items overdrawing an account may trigger a fee; or

(xi) Informational or educational materials concerning the payment of overdrafts if the materials do not specifically describe the institution's overdraft service.

(3) *Exception for ATM screens and telephone response machines.* The disclosures described in paragraphs (b)(1)(ii) and (b)(1)(iv) of this section are not required in connection with any advertisement made on an ATM screen or using a telephone response machine.

(4) *Exception for indoor signs.* Paragraph (b)(1) of this section does not apply to advertisements for the payment of overdrafts on indoor signs as described by §230.8(e)(2) of this part, provided that the sign contains a clear and conspicuous statement that fees may apply and that consumers should contact an employee for further information about applicable fees and terms. For purposes of this paragraph (b)(4), an indoor sign does not include an ATM screen.

[70 FR 29593, May 24, 2005]

APPENDIX A TO PART 230—ANNUAL PERCENTAGE YIELD CALCULATION

The annual percentage yield measures the total amount of interest paid on an account based on the interest rate and the frequency of compounding.[1] The annual percentage yield is expressed as an annualized rate, based on a 365-day year.[2] Part I of this appendix discusses the annual percentage yield calculations for account disclosures and advertisements, while Part II discusses annual percentage yield earned calculations for periodic statements.

Part I. Annual Percentage Yield for Account Disclosures and Advertising Purposes

In general, the annual percentage yield for account disclosures under §§230.4 and 230.5 and for advertising under §230.8 is an annualized rate that reflects the relationship between the amount of interest that would be earned by the consumer for the term of the account and the amount of principal used to calculate that interest. Special rules apply to accounts with tiered and stepped interest rates, and to certain time accounts with a stated maturity greater than one year.

A. GENERAL RULES

Except as provided in Part I.E. of this appendix, the annual percentage yield shall be calculated by the formula shown below. Institutions shall calculate the annual percentage yield based on the actual number of days in the term of the account. For accounts without a stated maturity date (such as a typical savings or transaction account), the calculation shall be based on an assumed term of 365 days. In determining the total interest figure to be used in the formula, institutions shall assume that all principal and interest remain on deposit for the entire

[1] The annual percentage yield reflects only interest and does not include the value of any bonus (or other consideration worth $10 or less) that may be provided to the consumer to open, maintain, increase or renew an account. Interest or other earnings are not to be included in the annual percentage yield if such amounts are determined by circumstances that may or may not occur in the future.

[2] Institutions may calculate the annual percentage yield based on a 365–day or a 366–day year in a leap year.

term and that no other transactions (deposits or withdrawals) occur during the term.[3] For time accounts that are offered in multiples of months, institutions may base the number of days on either the actual number of days during the applicable period, or the number of days that would occur for any actual sequence of that many calendar months. If institutions choose to use the latter rule, they must use the same number of days to calculate the dollar amount of interest earned on the account that is used in the annual percentage yield formula (where ''Interest'' is divided by ''Principal'').

The annual percentage yield is calculated by use of the following general formula (''APY'' is used for convenience in the formulas):

$$APY=100\ [(1+Interest/Principal)^{(365/Daysinterm)}-1]$$

''Principal'' is the amount of funds assumed to have been deposited at the beginning of the account.

''Interest'' is the total dollar amount of interest earned on the Principal for the term of the account.

''Days in term'' is the actual number of days in the term of the account. When the ''days in term'' is 365 (that is, where the stated maturity is 365 days or where the account does not have a stated maturity), the annual percentage yield can be calculated by use of the following simple formula:

$$APY=100\ (Interest/Principal)$$

Examples

(1) If an institution pays $61.68 in interest for a 365-day year on $1,000 deposited into a NOW account, using the general formula above, the annual percentage yield is 6.17%:

$$APY=100[(1+61.68/1,000)^{(365/365)}-1]$$
$$APY=6.17\%$$

Or, using the simple formula above (since, as an account without a stated term, the term is deemed to be 365 days):

$$APY=100(61.68/1,000)$$
$$APY=6.17\%$$

(2) If an institution pays $30.37 in interest on a $1,000 six-month certificate of deposit (where the six-month period used by the institution contains 182 days), using the general formula above, the annual percentage yield is 6.18%:

$$APY=100[(1+30.37/1,000)^{(365/182)}-1]$$
$$APY=6.18\%$$

[3] This assumption shall not be used if an institution requires, as a condition of the account, that consumers withdraw interest during the term. In such a case, the interest (and annual percentage yield calculation) shall reflect that requirement.

B. STEPPED-RATE ACCOUNTS (DIFFERENT RATES APPLY IN SUCCEEDING PERIODS)

For accounts with two or more interest rates applied in succeeding periods (where the rates are known at the time the account is opened), an institution shall assume each interest rate is in effect for the length of time provided for in the deposit contract.

Examples

(1) If an institution offers a $1,000 6-month certificate of deposit on which it pays a 5% interest rate, compounded daily, for the first three months (which contain 91 days), and a 5.5% interest rate, compounded daily, for the next three months (which contain 92 days), the total interest for six months is $26.68 and, using the general formula above, the annual percentage yield is 5.39%:

$$APY=100[(1+26.68/1,000)^{(365/183)}-1]$$
$$APY=5.39\%$$

(2) If an institution offers a $1,000 two-year certificate of deposit on which it pays a 6% interest rate, compounded daily, for the first year, and a 6.5% interest rate, compounded daily, for the next year, the total interest for two years is $133.13, and, using the general formula above, the annual percentage yield is 6.45%:

$$APY=100[(1+133.13/1,000)^{(365/730)}-1]$$
$$APY=6.45\%$$

C. VARIABLE-RATE ACCOUNTS

For variable-rate accounts without an introductory premium or discounted rate, an institution must base the calculation only on the initial interest rate in effect when the account is opened (or advertised), and assume that this rate will not change during the year.

Variable-rate accounts with an introductory premium (or discount) rate must be calculated like a stepped-rate account. Thus, an institution shall assume that: (1) The introductory interest rate is in effect for the length of time provided for in the deposit contract; and (2) the variable interest rate that would have been in effect when the account is opened or advertised (but for the introductory rate) is in effect for the remainder of the year. If the variable rate is tied to an index, the index-based rate in effect at the time of disclosure must be used for the remainder of the year. If the rate is not tied to an index, the rate in effect for existing consumers holding the same account (who are not receiving the introductory interest rate) must be used for the remainder of the year.

For example, if an institution offers an account on which it pays a 7% interest rate, compounded daily, for the first three months (which, for example, contain 91 days), while the variable interest rate that would have been in effect when the account was opened

was 5%, the total interest for a 365-day year for a $1,000 deposit is $56.52 (based on 91 days at 7% followed by 274 days at 5%). Using the simple formula, the annual percentage yield is 5.65%:

APY=100(56.52/1,000)
APY=5.65%

D. TIERED-RATE ACCOUNTS (DIFFERENT RATES APPLY TO SPECIFIED BALANCE LEVELS)

For accounts in which two or more interest rates paid on the account are applicable to specified balance levels, the institution must calculate the annual percentage yield in accordance with the method described below that it uses to calculate interest. In all cases, an annual percentage yield (or a range of annual percentage yields, if appropriate) must be disclosed for each balance tier.

For purposes of the examples discussed below, assume the following:

Interest rate (percent)	Deposit balance required to earn rate
5.25	Up to but not exceeding $2,500.
5.50	Above $2,500 but not exceeding $15,000.
5.75	Above $15,000.

Tiering Method A. Under this method, an institution pays on the full balance in the account the stated interest rate that corresponds to the applicable deposit tier. For example, if a consumer deposits $8,000, the institution pays the 5.50% interest rate on the entire $8,000.

When this method is used to determine interest, only one annual percentage yield will apply to each tier. Within each tier, the annual percentage yield will not vary with the amount of principal assumed to have been deposited.

For the interest rates and deposit balances assumed above, the institution will state three annual percentage yields—one corresponding to each balance tier. Calculation of each annual percentage yield is similar for this type of account as for accounts with a single interest rate. Thus, the calculation is based on the total amount of interest that would be received by the consumer for each tier of the account for a year and the principal assumed to have been deposited to earn that amount of interest.

First tier. Assuming daily compounding, the institution will pay $53.90 in interest on a $1,000 deposit. Using the general formula, for the first tier, the annual percentage yield is 5.39%:

$$APY=100[(1+53.90/1,000)^{(365/365)}-1]$$
APY=5.39%

Using the simple formula:

APY=100(53.90/1,000)
APY=5.39%

Second tier. The institution will pay $452.29 in interest on an $8,000 deposit. Thus, using the simple formula, the annual percentage yield for the second tier is 5.65%:

APY=100(452.29/8,000)
APY=5.65%

Third tier. The institution will pay $1,183.61 in interest on a $20,000 deposit. Thus, using the simple formula, the annual percentage yield for the third tier is 5.92%:

APY=100(1,183.61/20,000)
APY=5.92%

Tiering Method B. Under this method, an institution pays the stated interest rate only on that portion of the balance within the specified tier. For example, if a consumer deposits $8,000, the institution pays 5.25% on $2,500 and 5.50% on $5,500 (the difference between $8,000 and the first tier cut-off of $2,500).

The institution that computes interest in this manner must provide a range that shows the lowest and the highest annual percentage yields for each tier (other than for the first tier, which, like the tiers in Method A, has the same annual percentage yield throughout). The low figure for an annual percentage yield range is calculated based on the total amount of interest earned for a year assuming the minimum principal required to earn the interest rate for that tier. The high figure for an annual percentage yield range is based on the amount of interest the institution would pay on the highest principal that could be deposited to earn that same interest rate. If the account does not have a limit on the maximum amount that can be deposited, the institution may assume any amount.

For the tiering structure assumed above, the institution would state a total of five annual percentage yields—one figure for the first tier and two figures stated as a range for the other two tiers.

First tier. Assuming daily compounding, the institution would pay $53.90 in interest on a $1,000 deposit. For this first tier, using the simple formula, the annual percentage yield is 5.39%:

APY=100(53.90/1,000)
APY=5.39%

Second tier. For the second tier, the institution would pay between $134.75 and $841.45 in interest, based on assumed balances of $2,500.01 and $15,000, respectively. For $2,500.01, interest would be figured on $2,500 at 5.25% interest rate plus interest on $.01 at 5.50%. For the low end of the second tier, therefore, the annual percentage yield is 5.39%, using the simple formula:

APY=100(134.75/2,500)
APY=5.39%

For $15,000, interest is figured on $2,500 at 5.25% interest rate plus interest on $12,500 at 5.50% interest rate. For the high end of the

second tier, the annual percentage yield, using the simple formula, is 5.61%:

APY=100(841.45/15,000)
APY=5.61%

Thus, the annual percentage yield range for the second tier is 5.39% to 5.61%.

Third tier. For the third tier, the institution would pay $841.45 in interest on the low end of the third tier (a balance of $15,000.01). For $15,000.01, interest would be figured on $2,500 at 5.25% interest rate, plus interest on $12,500 at 5.50% interest rate, plus interest on $.01 at 5.75% interest rate. For the low end of the third tier, therefore, the annual percentage yield (using the simple formula) is 5.61%:

APY=100 (841.45/15,000)
APY=5.61%

Since the institution does not limit the account balance, it may assume any maximum amount for the purposes of computing the annual percentage yield for the high end of the third tier. For an assumed maximum balance amount of $100,000, interest would be figured on $2,500 at 5.25% interest rate, plus interest on $12,500 at 5.50% interest rate, plus interest on $85,000 at 5.75% interest rate. For the high end of the third tier, therefore, the annual percentage yield, using the simple formula, is 5.87%.

APY=100 (5,871.79/100,000)
APY=5.87%

Thus, the annual percentage yield range that would be stated for the third tier is 5.61% to 5.87%.

If the assumed maximum balance amount is $1,000,000 instead of $100,000, the institution would use $985,000 rather than $85,000 in the last calculation. In that case, for the high end of the third tier the annual percentage yield, using the simple formula, is 5.91%:

APY=100 (59134.22/1,000,000)
APY=5.91%

Thus, the annual percentage yield range that would be stated for the third tier is 5.61% to 5.91%.

E. Time Accounts with a Stated Maturity Greater than One Year that Pay Interest At Least Annually

1. For time accounts with a stated maturity greater than one year that do not compound interest on an annual or more frequent basis, and that require the consumer to withdraw interest at least annually, the annual percentage yield may be disclosed as equal to the interest rate.

Example

(1) If an institution offers a $1,000 two-year certificate of deposit that does not compound and that pays out interest semi-annually by check or transfer at a 6.00% interest rate, the annual percentage yield may be disclosed as 6.00%.

(2) For time accounts covered by this paragraph that are also stepped-rate accounts, the annual percentage yield may be disclosed as equal to the composite interest rate.

Example

(1) If an institution offers a $1,000 three-year certificate of deposit that does not compound and that pays out interest annually by check or transfer at a 5.00% interest rate for the first year, 6.00% interest rate for the second year, and 7.00% interest rate for the third year, the institution may compute the composite interest rate and APY as follows:

(a) Multiply each interest rate by the number of days it will be in effect;

(b) Add these figures together; and

(c) Divide by the total number of days in the term.

(2) Applied to the example, the products of the interest rates and days the rates are in effect are (5.00%×365 days) 1825, (6.00%×365 days) 2190, and (7.00%×365 days) 2555, respectively. The sum of these products, 6570, is divided by 1095, the total number of days in the term. The composite interest rate and APY are both 6.00%.

Part II. Annual Percentage Yield Earned for Periodic Statements

The annual percentage yield earned for periodic statements under §230.6(a) is an annualized rate that reflects the relationship between the amount of interest actually earned on the consumer's account during the statement period and the average daily balance in the account for the statement period. Pursuant to §230.6(b), however, if an institution uses the average daily balance method and calculates interest for a period other than the statement period, the annual percentage yield earned shall reflect the relationship between the amount of interest earned and the average daily balance in the account for that other period.

The annual percentage yield earned shall be calculated by using the following formulas (''APY Earned'' is used for convenience in the formulas):

A. *General formula.*

$$\text{APY Earned} = 100\ [(1+\text{Interest earned}/\text{Balance})^{(365/\text{Daysinperiod})} - 1]$$

''Balance'' is the average daily balance in the account for the period.

''Interest earned'' is the actual amount of interest earned on the account for the period.

''Days in period'' is the actual number of days for the period.

Examples

(1) Assume an institution calculates interest for the statement period (and uses either the daily balance or the average daily balance method), and the account has a balance of $1,500 for 15 days and a balance of $500 for the remaining 15 days of a 30-day statement

period. The average daily balance for the period is $1,000. The interest earned (under either balance computation method) is $5.25 during the period. The annual percentage yield earned (using the formula above) is 6.58%:

APY Earned=100 [(1+5.25/1,000)$^{(365/30)}$ − 1]
APY Earned=6.58%

(2) Assume an institution calculates interest on the average daily balance for the calendar month and provides periodic statements that cover the period from the 16th of one month to the 15th of the next month. The account has a balance of $2,000 September 1 through September 15 and a balance of $1,000 for the remaining 15 days of September. The average daily balance for the month of September is $1,500, which results in $6.50 in interest earned for the month. The annual percentage yield earned for the month of September would be shown on the periodic statement covering September 16 through October 15. The annual percentage yield earned (using the formula above) is 5.40%:

APY Earned=100 [(6.50/1,500)$^{(365/30)}$ − 1]
APY Earned=5.40%

(3) Assume an institution calculates interest on the average daily balance for a quarter (for example, the calendar months of September through November), and provides monthly periodic statements covering calendar months. The account has a balance of $1,000 throughout the 30 days of September, a balance of $2,000 throughout the 31 days of October, and a balance of $3,000 throughout the 30 days of November. The average daily balance for the quarter is $2,000, which results in $21 in interest earned for the quarter. The annual percentage yield earned would be shown on the periodic statement for November. The annual percentage yield earned (using the formula above) is 4.28%:

APY Earned=100 [(1+21/2,000)$^{(365/91)}$ − 1]
APY Earned=4.28%

B. *Special formula for use where periodic statement is sent more often than the period for which interest is compounded.*

Institutions that use the daily balance method to accrue interest and that issue periodic statements more often than the period for which interest is compounded shall use the following special formula:

$$\text{APY Earned} = 100\left\{\left[1+\frac{(\text{Interest earned/Balance})}{\text{Days in period}}(\text{Compounding})\right]^{(365/\text{Compounding})}-1\right\}$$

The following definition applies for use in this formula (all other terms are defined under Part II):

''Compounding'' is the number of days in each compounding period.

Assume an institution calculates interest for the statement period using the daily balance method, pays a 5.00% interest rate, compounded annually, and provides periodic statements for each monthly cycle. The account has a daily balance of $1,000 for a 30-day statement period. The interest earned is $4.11 for the period, and the annual percentage yield earned (using the special formula above) is 5.00%:

$$\text{APY Earned} = 100\left\{\left[1+\frac{(4.11/1{,}000)}{30}(365)\right]^{(365/365)}-1\right\}$$

APY Earned=5.00%

[57 FR 43376, Sept. 21, 1992, as amended at 57 FR 46480, Oct. 9, 1992; 58 FR 15082, Mar. 19, 1993; 60 FR 5130, Jan. 26, 1995; Reg. DD, 63 FR 40638, July 30, 1998]

APPENDIX B TO PART 230—MODEL CLAUSES AND SAMPLE FORMS

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