disclosure such as "You will earn a 6.17% APY, based on monthly compounding and quarterly checks. The annual percentage yield assumes you immediately reinvest your interest payment at the account interest rate." The Board also proposes to amend paragraph (e) of this section, which exempts certain types of advertisements from some disclosure requirements.

### Appendix A to Part 230—Annual Percentage Yield Calculation

The proposed amendment that would factor the time value of interest payments into the APY calculation using the current formula (the modified version of the May 1994 proposal) is discussed below as "Alternative 1." The alternative approach that would use an internal rate of return formula to calculate the APY (proposed in December 1993) is discussed as "Alternative 2."

Both approaches would incorporate two assumptions to provide greater flexibility and to ease compliance. First, institutions could calculate the APY by assuming an initial deposit amount of \$1,000. Or, institutions could factor in the actual dollar amount of a deposit, although the Board notes that the effects of rounding interest paid on a very small deposit amount such as \$25 can produce a skewed APY.

Second, if interest is paid out monthly, quarterly, or semi-annually, institutions could base the number of days either on the actual number of days for those intervals or on an assumed number of days (30 days for monthly distributions, 91 days for quarterly distributions, and 182 days for semiannual distributions). Appendix A permits institutions to use a similar assumption for determining the number of days in the term of a "three-month" or "six-month" time account, for example. (Of course, if the institution chooses to use 91 days as the number of days for each quarter, it must also use 91 days to compute interest for those quarters. And see §230.7, which requires institutions to pay interest on the full principal balance in the account each day.) To illustrate, assume the institution sends interest payments at the end of each calendar month to consumers with six-month CDs. If the institution bases its APY calculation on an assumed term of 183 days, the institution could calculate the effect of monthly interest payments by using the actual days in each calendar month or assuming five 30-day intervals and one 33-day interval.

Also, footnote 3 would be deleted as unnecessary, since both alternatives

specifically factor in when interest payments are made on an account.

The following illustrates the differences in the two calculation methods under Alternative 1 and Alternative 2. If an institution offers a noncompounding two-year stepped-rate CD that pays a 5.00% interest rate in the first year and a 10.00% interest rate the second year and sends annual interest checks of \$50 and \$100 on a \$1,000 deposit, the APY would be 7.47% under Alternative 1 (the proposed amendment using the current formula), and 7.41% using the internal rate of return formula (Alternative 2). If a noncompounding two-year stepped-rate CD paid a 10.00% interest rate in the first year and a 5.00% interest rate the second year and the institution sends annual interest checks of \$100 and \$50 on a \$1,000 deposit, the APY would be 7.47% under Alternative 1 and 7.59% under Alternative 2.

## Alternative 1: Modifying the Current APY Formula

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

#### A. General Rules

Under Alternative 1, the Board would amend the definition of "interest" in the APY formula to provide that institutions must factor in the timing of interest payments, if interest payments occur more frequently than any compounding. In effect, the interest payment would be treated as if the interest were compounded. For example, if an institution offers a two-year CD with a 6.00% interest rate and annual compounding and offers interest payments semi-annually to the consumer by check or transfer to another account, the "Interest" figure used in the APY formula would be \$125.51 on a \$1,000 deposit for the consumer who chooses semi-annual interest payments. This is the dollar amount of interest earned for a two-year CD with a 6.00% interest rate that compounds semi-annually. The APY for the account with semi-annual interest payments would be 6.09%. For the consumer who leaves interest in the account for annual compounding, the "interest" figure would be \$123.60 and the APY 6.00%. On the other hand, if the same CD offered daily compounding and monthly interest checks (with daily compounding), the imputed interest figure would be \$127.49, which reflects daily compounding and the assumption that the monthly interest checks are reinvested at the daily compounding rate. The APY would be 6.18% for consumers who leave interest in the

account and for those who receive monthly interest checks. In this case (when interest compounds more frequently than interest is distributed), the APY would be based on the compounding frequency. On the other hand, if the institution offers daily compounding to those consumers who leave interest in the account and does not compound interest if consumers choose to receive monthly interest checks, the APY would be 6.17% for the "monthly check" account. In another example, if an institution compounds monthly but offers consumers the option of receiving interest checks quarterly or semi-annually, the APY would be based on monthly compounding. The APY would be 6.17%. Two examples would be added to illustrate the new rule.

# Alternative 2: Adding an Internal Rate of Return Formula

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

### A. General Rules

### 2. Formula for all Accounts

Under Alternative 2, the Board would add a standard internal rate of return formula which produces an APY that reflects the timing of interest payments. The new formula could be used for all accounts. It would have to be used for accounts that pay interest prior to the maturity of the account. For example, institutions would use the formula to calculate the APY for a one-year time account that compounds semi-annually and for which the consumer receives interest payments during the year.

The APY is determined directly from the proposed formula. For an internal rate of return program that is standard for most calculators and software, calculations would consider the amount and days at which payments are made in relation to the amount and day of the deposit. Using standard programs, the calculation will result in a daily yield, which is annualized to produce the APY.<sup>1</sup>

# 3. Formula for Certain Accounts

Institutions could continue to use the APY formulas currently in Appendix A for accounts with a single interest payment made at maturity (whether or not compounding occurs prior to maturity).

<sup>&</sup>lt;sup>1</sup>Annual percentage yield = ((daily yield/100 + 1)<sup>365</sup> - 1)×100.