already issued a replacement check, you must return the original check to us.

§ 355.10 What happens if I present my check to the payor Reserve Bank more than six months after the issue date of the check?

If the payor Reserve Bank refuses payment on a fiscal agency check solely because it is presented more than six (6) months after the issue date of the check, a replacement check will be issued if you:

(a) Surrender the original check; and

(b) Executive the required indemnification agreement.

§ 355.11 What should I do if the endorsement on my check is forged or unauthorized?

If we verify the existence or a forged or unauthorized endorsement on a paid fiscal agency check, the payor Reserve Bank will issue a replacement check to the person entitled. The payee or endorsee must execute an affidavit that there has been a forged or unauthorized endorsement. We may also require an indemnification agreement.

§ 355.12 What requirements apply if the check is payable to two or more persons?

If the fiscal agency check is payable to two or more persons, the requirements of this part apply to all designated payees.

§ 355.13 Are there any additional requirements related to fiscal agency checks?

We may require an indemnification agreement, with or without surety. You must provide any additional evidence we consider necessary. We will require any information necessary for the protection of the interests of the United States.

§ 355.14 Can these regulations be waived?

We reserve the right, in our discretion, to waive any provision of the regulations in this part in any case or class of cases for the convenience of the United States, or to relieve any person of unnecessary hardship, if the waiver is not inconsistent with law and will not subject the United States to substantial expense or liability.

§ 355.15 Can these regulations be amended?

We may, at any time, supplement, amend, or revise the regulations in this part.

PART 356—SALE AND ISSUE OF MARKETABLE BOOK-ENTRY TREASURY BILLS, NOTES, AND BONDS (DEPARTMENT OF THE TREASURY CIRCULAR, FISCAL SERVICE SERIES NO. 1–93)

Subpart A—General Information

Sec.

Subpart B—Bidding, Certifications, and Payment

Subpart C—Determination of Auction Awards; Settlement

Subpart D—Miscellaneous Provisions

AUTHORITY: 5 U.S.C. 301; 31 U.S.C. 3102, *et seq.;* 12 U.S.C. 391.

SOURCE: 69 FR 45202, July 28, 2004, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 356 appear at 70 FR 57439, Sept. 30, 2005.

Subpart A—General Information

§ 356.0 What authority does the Treasury have to sell and issue securities?

Chapter 31 of Title 31 of the United States Code authorizes the Secretary of the Treasury to issue United States obligations, and to offer them for sale with the terms and conditions that the Secretary prescribes.

§ 356.1 To which securities does this circular apply?

The provisions in this part, including the appendices, and each individual auction announcement govern the sale and issuance of marketable Treasury securities issued on or after March 1, 1993. This part also governs all securities eligible for the STRIPS (Separate Trading of Registered Interest and Principal of Securities) Program (See §356.31.). In addition, these provisions and the auction announcements govern any other types of securities we may issue under this part.

§ 356.2 What definitions do I need to know to understand this part?

13-week bill means a Treasury bill where the security description is ''13-Week Bill'' as referenced on the Treasury auction announcement.

Accrued interest means an amount that bidders must pay to us for interest income as part of the settlement amount. Accrued interest compensates us up front for interest that bidders will be paid but did not earn because it is attributable to a period of time prior to the issue date. (See appendix B, section I, paragraph D of this part for additional explanation and examples.)

Adjusted value means, for an interest component stripped from an inflation-protected security, an amount derived by:

(1) Multiplying the semiannual interest rate by the par amount, and then

(2) Multiplying this value by: 100 divided by the Reference CPI of the original issue date (or dated date, when the dated date is different from the original issue date). (See appendix B, section V of this part for an example of how to calculate the adjusted value.)

Auction means a bidding process by which we sell marketable Treasury securities to the public.

Autocharge agreement means an agreement in a format acceptable to Treasury between a submitter or clearing corporation and a depository institution that authorizes us to:

(1) Deliver awarded securities to the book-entry securities account of a designated depository institution in the commercial book-entry system, and

(2) Charge a funds account of a designated depository institution for the settlement amount of the securities.

Bid means an offer to purchase a stated par amount of securities, either competitively or noncompetitively, in an auction.

Bid-to-cover ratio means the total par amount of securities bid for in an auction divided by the total par amount of securities awarded. It excludes bids by, and awards to, the Federal Reserve for its own account.

Bidder, as further defined in appendix A, means a person or an entity that offers to purchase Treasury securities in an auction either directly or through a depository institution or dealer. We may consider two or more persons or entities to be one bidder based on their relationship or their actions in participating in an auction. We consider a controlled account to be a bidder when an investment adviser bids in the name of the controlled account (See § 356.15.).

Bidder Identification Number means a number we assign to each institutional submitter and to certain other bidders. We assign such numbers either to identify certain bidders or to grant separate bidder status to different parts of the same corporate or partnership structure.

Book-entry security means a security that is issued or maintained as an accounting entry or electronic record. (*See* § 356.4.)

Business day means any day on which the Federal Reserve Banks are open for business.

Call means the redemption of a security prior to maturity under the terms specified in its auction announcement.

Certificate of indebtedness means a one-day non-interest-bearing security that may be held in TreasuryDirect and that automatically matures and is rolled over each day until its owner requests that it be redeemed.

Clearing corporation means a clearing agency as defined in section 3 of the Securities Exchange Act of 1934 (15 U.S.C. 78c(a)(23)). A clearing corporation must be registered with the Securities and Exchange Commission under section 17A of the Securities Exchange Act of 1934 and its rules.

Competitive bid means a bid to purchase a stated par amount of securities at a specified yield, discount rate, or discount margin.

Consumer Price Index (CPI) means the monthly non-seasonally adjusted U.S. City Average All Items Consumer Price Index for All Urban Consumers, published by the Bureau of Labor Statistics of the Department of Labor. We use the CPI as the basis for adjusting the principal amounts of inflation-protected securities. (See appendix D.)

Corpus means the principal component of a security that has been stripped of its interest components.

CUSIP number means the unique identifying number assigned to each separate security issue and each separate STRIPS component. CUSIP numbers are provided by the CUSIP Service Bureau of Standard & Poor's Corporation. CUSIP is an acronym for Committee on Uniform Securities Identification Procedures.

Customer means a bidder that directs a depository institution or dealer to submit or forward a bid for a specific amount of securities in a specific auction on the bidder's behalf. Only depository institutions and dealers may submit bids for customers directly to us, or forward them to another depository institution or dealer.

Dated date means the date from which interest accrues for notes and bonds. The dated date and issue date are usually the same. In those cases where interest begins accruing prior to the issue date, however, the dated date will be prior to the issue date. An example is when the dated date is a Saturday and the issue date is the following Monday.

Dealer means an entity that is registered or has given notice of its status as a government securities broker or government securities dealer under Section 15C(a)(1) of the Securities Exchange Act of 1934.

Delivery and payment agreement means a written agreement between a clearing corporation and a submitter, acknowledged by a Federal Reserve Bank, regarding securities awarded to the submitter for its own account. It authorizes us to deliver such securities to, and accept payment from, a depository institution acting on behalf of the clearing corporation under an acknowledged autocharge agreement.

Depository institution means:

(1) An entity described in Section 19(b)(1)(A), excluding subparagraph (vii), of the Federal Reserve Act (12 U.S.C. 461(b)(1)(A)).

(2) Any agency or branch of a foreign bank as defined by the International Banking Act of 1978, as amended (12 U.S.C. 3101).

Discount means the difference between par and the price of the security, when the price is less than par. (See appendix B for formulas and examples.)

Discount amount means the discount divided by 100 and multiplied by the par amount. (See appendix B for formulas and examples.)

Discount margin means the margin over the index that equates the present values of the assumed cash flows on a floating rate note to the sum of the price of and accrued interest on the floating rate note. The assumed cash flows are calculated based upon the index rate applicable to the dated date. Bidders in floating rate note auctions bid on the basis of discount margin. (See appendix B.)

Discount rate means a rate of return, on an annual basis, on bills held until they mature. The discount rate is expressed in percentage terms and based on a 360-day year. It is also referred to as the "bank discount rate." (See appendix B for formulas and examples.)

Funds account means a cash account maintained by a depository institution at a Federal Reserve Bank.

Index means the Consumer Price Index for inflation-protected securities. For floating rate notes, the index is the highest accepted discount rate on 13-week bills determined by Treasury auctions of those securities.

Index rate means the simple-interest money market yield, computed on an actual/360 basis and rounded to nine decimal places, from the highest accepted discount rate of a 13-week bill auction as announced in the Treasury auction results. (*See* appendix B for methods and examples for computing the index rate.)

Index ratio means, for an inflation-protected security, the Reference CPI of a particular date divided by the Reference CPI of the original issue date. (When the dated date is different from the original issue date, the denominator of the index ratio is the Reference CPI of the dated date rather than that of the original issue date.)

Inflation-adjusted principal means, for an inflation-protected security, the value of the security derived by multiplying the par amount by the applicable index ratio as described in appendix B, section I, paragraph B.

Interest rate means the annual percentage rate of interest paid on the par amount (or the inflation-adjusted principal) of a specific issue of notes or bonds. (See appendix B for methods and examples of interest calculations on notes and bonds.)

Intermediary means a depository institution or dealer that forwards bids for customers to another depository institution or dealer. An intermediary does not submit bids directly to us.

Issue date means the date specified in the auction announcement on which we issue a security as an obligation of the United States. Interest normally begins to accrue on a security's issue date.

Marketable security means a security that may be bought, sold and transferred in the secondary market.

Maturity date means the date on which a security becomes due and payable, and ceases to earn interest. The maturity date is specified in the auction announcement.

Minimum to bid means the smallest amount of a security that may be bid for in an auction as stated in the auction announcement.

Multiple to bid means the smallest additional amount of a security that may be bid for in an auction as stated in the auction announcement.

Multiple-price auction means an auction in which each successful competitive bidder pays the price equivalent to the yield, discount rate, or discount margin that it bid.

Noncompetitive bid means, for a single-price auction, a bid to purchase a stated par amount of securities at the highest yield, discount rate, or discount margin awarded to competitive bidders. For a multiple-price auction, a noncompetitive bid means a bid to purchase securities at the weighted average yield, discount rate, or discount margin of awards to competitive bidders.

Offering amount means the par amount of securities we are offering to the public for purchase in an auction, as specified in the auction announcement.

Par means a price of 100. (See appendix B.)

Par amount means the stated value of a security at original issuance.

Person means a natural person.

Premium means the difference between par and the price of the security, when the price is greater than par.

Premium amount means the premium divided by 100 and multiplied by the par amount.

Price means the price of a security per 100 dollars of its stated value as calculated using the formulas in appendix B.

Real yield means, for an inflation-protected security, the yield based on the payment stream in constant dollars. In other words, the real yield is the yield in the absence of inflation.

Reference CPI (Ref CPI) means, for an inflation-protected security, the index number applicable to a given date. (See appendix B, section I, paragraph B.)

Reopening means the auction of an additional amount of an outstanding security.

Security means a Treasury bill, note, or bond, each as described in this part. Security also means any other obligation we issue that is subject to this part according to its auction announcement. Security includes an interest or principal component under the STRIPS program, as well as a certificate of indebtedness.

Settlement means final and complete payment for securities awarded in an auction and delivery of those securities.

Settlement amount means the total of the par amount of securities awarded, less any discount amount or plus any premium amount, and plus any accrued interest. For inflation-protected securities, the settlement amount also includes any inflation adjustment when such securities are reopened or when the dated date is different from the issue date.

Single-price auction means an auction in which all successful bidders pay the same price regardless of the yields, discount rates, or discount margins they each bid.

Spread means the fixed amount over the life of a floating rate note that is added to the index rate in order to determine the interest rate of the floating rate note. The spread will be determined in the auction of a new floating rate note and is expressed in tenths of a basis point (*i.e.*, to three decimals). Additionally, the spread will be equal to the high discount margin at the time a new floating rate note is auctioned.

STRIPS (Separate Trading of Registered Interest and Principal of Securities) means our program under which eligible securities are authorized to be separated into principal and interest components, and transferred separately. These components are maintained and transferred in the commercial book-entry system.

Submitter means a person or entity submitting bids directly to us for its own account, for customer accounts, or both. Only depository institutions and dealers are permitted to submit bids for customer accounts. We permit investment advisers to submit bids on behalf of controlled accounts.

TINT means an interest component from a stripped security.

We (or ''us'') means the Secretary of the Treasury and his or her delegates, including the Department of the Treasury, Bureau of the Fiscal Service, and their representatives. The term also includes Federal Reserve Banks acting as fiscal agents of the United States.

Weighted-average means the average of the yields, discount rates, or discount margins at which we award securities to competitive bidders in multiple-price auctions weighted by the par amount of securities allotted at each yield, discount rate, or discount margin.

Yield means the annualized rate of return to maturity on a non-indexed security. Yield is expressed as a percentage. For an inflation-protected security, yield means the real yield. Yield is also referred to as ''yield to maturity.'' (See appendix B.)

You means a prospective bidder in an auction.

[69 FR 45202, July 28, 2004, as amended at 70 FR 57439, Sept. 30, 2005; 73 FR 14938, Mar. 20, 2008; 76 FR 18063, Apr. 1, 2011; 78 FR 46428, July 31, 2013; 81 FR 43070, July 1, 2016; 87 FR 40439, July 7, 2022]

§ 356.3 What is the role of the Federal Reserve Banks in this process?

The Treasury Department authorizes Federal Reserve Banks, as fiscal agents of the United States, to perform all activities necessary to carry out the provisions of this part, any auction announcements, and applicable regulations.

§ 356.4 What are the book-entry systems in which auctioned Treasury securities may be issued or maintained?

We issue marketable Treasury securities into the commercial book-entry system and into accounts maintained directly on the records of the Department of the Treasury (''securities held directly with Treasury'').

(a) *The commercial book-entry system.* When depository institutions or dealers submit bids for Treasury securities in an auction, securities awarded as a result of those bids are generally held in the commercial book-entry system. Specifically, we maintain book-entry accounts in the National Book-Entry System® (''NBES'') for Federal Reserve Banks, depository institutions, and other authorized entities, such as government and international agencies and foreign central banks. In their accounts, depository institutions maintain securities held for their own account and for the accounts of others. The accounts held for others include those of other depository institutions and dealers, which may, in turn, maintain accounts for others.

(b) *Securities held directly with Treasury.* Account holders maintain accounts in a book-entry system directly on the records of the Department of the Treasury. Securities held directly with Treasury are subject to the terms and conditions in this part, the auction announcement, and the regulations governing the system in which the securities are held. (*See* subtitle B, chapter II of this title.)

[69 FR 45202, July 28, 2004, as amended at 70 FR 57439, Sept. 30, 2005; 72 FR 2193, Jan. 18, 2007; 71 FR 2928, Jan. 23, 2007; 73 FR 14938, Mar. 20, 2008; 76 FR 18063, Apr. 1, 2011; 87 FR 40439, July 7, 2022]

§ 356.5 What types of securities does the Treasury auction?

We offer securities under this part exclusively in book-entry form and as direct obligations of the United States issued under Chapter 31 of Title 31 of the United States Code. When we issue additional securities with the same CUSIP number as outstanding securities, we consider them to be the same securities as the outstanding securities.

(a) *Treasury bills.* (1) Are issued at a discount or at par, depending upon the auction results;

(2) Are redeemed at their par amount at maturity; and

(3) Have maturities of not more than one year.

(b) *Treasury notes*—(1) Treasury non-indexed[1] notes.

(i) Are issued with a stated rate of interest to be applied to the par amount;

(ii) Have interest payable semiannually;

(iii) Are redeemed at their par amount at maturity;

(iv) Are sold at discount, par, or premium, depending upon the auction results; and

(v) Have maturities of at least one year, but of not more than ten years.

(2) *Treasury inflation-protected notes.* (i) Are issued with a stated rate of interest to be applied to the inflation-adjusted principal on each interest payment date;

(ii) Have interest payable semiannually;

(iii) Are redeemed at maturity at their inflation-adjusted principal, or at their par amount, whichever is greater;

(iv) Are sold at discount, par, or premium, depending on the auction results (See appendix B for price and interest payment calculations and appendix C for Investment Considerations.); and

(v) Have maturities of at least one year, but not more than ten years.

(vi) Are only reopened as scheduled or announced.

(3) *Treasury floating rate notes.* (i) Are issued with a stated spread to be added

[1] We use the term ''non-indexed'' in this part to distinguish such notes and bonds from ''inflation-protected securities'' and ''floating rate notes.'' We refer to non-indexed notes and non-indexed bonds as ''notes'' and ''bonds'' in official Treasury publications, such as auction announcements and auction results, as well as in auction systems.

to the index rate for daily interest accrual throughout each interest payment period;

(ii) Have a zero-percent minimum daily interest accrual rate;

(iii) Have interest payable quarterly;

(iv) Are redeemed at their par amount at maturity;

(v) Are sold at discount, par, or premium depending on the auction results (See appendix B for price and interest payment calculations and appendix C for Investment Considerations.); and

(vi) Have maturities of at least one year, but not more than ten years.

(c) *Treasury bonds*—(1) Treasury nonindexed bonds. (i) Are issued with a stated rate of interest to be applied to the par amount;

(ii) Have interest payable semiannually;

(iii) Are redeemed at their par amount at maturity;

(iv) Are sold at discount, par, or premium, depending on the auction results; and

(v) Have maturities of more than ten years.

(2) *Treasury inflation-protected bonds.* (i) Are issued with a stated rate of interest to be applied to the inflation-adjusted principal on each interest payment date;

(ii) Have interest payable semiannually;

(iii) Are redeemed at maturity at their inflation-adjusted principal, or at their par amount, whichever is greater;

(iv) Are sold at discount, par, or premium, depending on the auction results; and

(v) Have maturities of more than ten years. (See appendix B for price and interest payment calculations and appendix C for Investment Considerations.)

(vi) Are only reopened as scheduled or announced.

[69 FR 45202, July 28, 2004, as amended at 70 FR 57439, Sept. 30, 2005; 74 FR 26086, June 1, 2009; 78 FR 46428, 46429, July 31, 2013; 87 FR 40439, July 7, 2022]

Subpart B—Bidding, Certifications, and Payment

§ 356.10 What is the purpose of an auction announcement?

By issuing an auction announcement, we provide public notice of the sale of bills, notes, and bonds. The auction announcement lists the specifics of each auction, e.g., offering amount, term and type of security, CUSIP number, and issue and maturity dates. The auction announcement and this part, including the Appendices, specify the terms and conditions of sale. If anything in the auction announcement differs from this part, the auction announcement will control. If you intend to bid, you should read the applicable auction announcement along with this part.

§ 356.11 How are bids submitted in an auction?

(a) *General.* (1) All bids must be submitted using an approved method, which depends on the system into which the awarded securities will be issued. (*See* § 356.4.) The approved submission methods for these respective systems are explained in this section. A bidder must provide its assigned bidder identification numbers if it has been assigned one. We have the option of accepting or rejecting incomplete bids.

(2) We must receive competitive and noncompetitive bids prior to their respective closing times, which are stated in the auction announcement. We will not include late bids in the auction. For bids other than those submitted on paper forms, our computer time stamp will establish the receipt time. You are bound by your bids after the closing time.

(3) We are not responsible for any delays, errors, or omissions. We are not responsible for any failures or disruptions of equipment or communications facilities used for participating in Treasury auctions.

(4) Submitters are responsible for bids submitted using computer equipment on their premises, whether or not such bids are authorized.

(b) *Commercial book-entry system.* (1) If you are a submitter and the awarded securities are to be issued in the commercial book-entry system, you must submit bids using one of our approved electronic methods except for contingency situations.

(2) You must have an agreement on file with us under which you agree to our terms and conditions for access to

our system for participating in our auctions.

(3) In contingency situations, such as a power outage, we may accept bids by a telephone call to designated Treasury employees if you submit them prior to the relevant bidding deadline.

(c) *Securities held directly with Treasury.* You must submit your bids in accordance with the regulations governing the system in which the security will be held. You may reinvest the proceeds of a maturing security held directly with Treasury as permitted by the system in which it is held.

[69 FR 45202, July 28, 2004, as amended at 70 FR 57440, Sept. 30, 2005; 87 FR 40439, July 7, 2022]

§ 356.12 What are the different types of bids and do they have specific requirements or restrictions?

(a) *General.* All bids must state the par amount of securities bid for and must equal or exceed the minimum to bid amount stated in the auction announcement. Bids in larger amounts must be in the multiple stated in the auction announcement.

(b) *Noncompetitive bids*—(1) *Maximum bid.* You may not bid noncompetitively for more than $10 million. The maximum bid limitation does not apply if you are bidding solely through a request to reinvest the proceeds of a maturing security held directly with Treasury, which is a noncompetitive bid.

(2) *Additional restrictions.* You may not bid noncompetitively in an auction in which you are bidding competitively. You may not bid noncompetitively if, in the security being auctioned, you hold a position in when-issued trading or in futures or forward contracts at any time between the date of the auction announcement and the time we announce the auction results. During this same timeframe, a noncompetitive bidder may not enter into any agreement to purchase or sell or otherwise dispose of the securities it is acquiring in the auction. For this paragraph, futures contracts include those:

(i) That require delivery of the specific security being auctioned;

(ii) For which the security being auctioned is one of several securities that may be delivered; or

(iii) That are cash-settled.

(c) *Competitive bids*—(1) *Bid format*—(i) *Treasury bills.* A competitive bid must show the discount rate bid, expressed with three decimals in .005 increments. The third decimal must be either a zero or a five, for example, 5.320 or 5.325. We will treat any missing decimals as zero, for example, a bid of 5.32 will be treated as 5.320. The rate bid may be a positive number or zero.

(ii) *Treasury non-indexed securities.* A competitive bid must show the yield bid, expressed with three decimals, for example, 4.170. We will treat any missing decimals as zero, for example, a bid of 4.1 will be treated as 4.100. The yield bid may be a positive number or zero.

(iii) *Treasury inflation-protected securities.* A competitive bid must show the real yield bid, expressed with three decimals, for example, 3.070. We will treat any missing decimals as zero, for example, a bid of 3 will be treated as 3.000. The real yield may be a positive number, a negative number, or zero.

(iv) *Treasury floating rate notes.* A competitive bid must show the discount margin bid, expressed as a percentage with three decimals, for example, 0.290 percent. We will treat any missing decimals as zero, for example, a bid of 0.29 will be treated as 0.290. The discount margin bid may be positive, negative, or zero.

(2) *Maximum recognized bid.* There is no limit on the maximum dollar amount that you may bid for competitively, either at a single yield, discount rate, or discount margin, or at different yields, discount rates, or discount margins. However, a competitive bid at a single yield, discount rate, or discount margin that exceeds 35 percent of the offering amount will be reduced to that amount. For example, if the offering amount is $10 billion, the maximum bid amount we will recognize at any one yield, discount rate, or discount margin from any bidder is $3.5 billion. (See § 356.22 for award limitations.)

(3) *Additional restrictions.* You may not bid competitively in an auction in which you are bidding noncompetitively. You may not bid competitively

for securities to be held directly with Treasury.

[69 FR 45202, July 28, 2004, as amended at 69 FR 53621, Sept. 2, 2004; 70 FR 57440, Sept. 30, 2005; 74 FR 26086, June 1, 2009; 78 FR 46428, 46429, July 31, 2013; 87 FR 40439, July 7, 2022]

§ 356.13 When must I report my net long position and how do I calculate it?

(a) *Net long position reporting threshold.* (1) If you are bidding competitively in an auction, you must report your net long position when the total of your bids plus your net long position in the security being auctioned equals or exceeds the net long position reporting threshold (*See* table.). We will specify this threshold in the auction announcement for each security (See § 356.10.). The threshold is typically 35 percent of the offering amount, but we may state a different threshold in the auction announcement. To see whether you must report your net long position, follow this table:

If . . .	And if . . .	Then . . .
(i) the total of your bids and your net long position in the security being auctioned equals or exceeds the reporting threshold.		you must report your net long position (which does not include your bids).
(ii) the total of your bids in the auction equals or exceeds the reporting threshold.	you have no position or a net short position in the security being auctioned.	you must report a zero.
(iii) the total of your bids and your net long position in the security being auctioned is less than the reporting threshold.		you may either report nothing (leave the field blank) or report your net long position.

(2) Also, if you have more than one bid in an auction and you must report either your net long position or a zero, you must report that figure only once. Finally, if you are a customer and must report either your net long position or a zero, you must report that figure through only one depository institution or dealer. (See § 356.14(d).)

(b) *"As of" time for calculating net long position.* You must calculate your net long position as of one half-hour prior to the closing time for receipt of competitive bids.

(c) *Components of the net long position.* Except as modified in paragragh (d) of this section, your net long position is the sum total of the par amounts of:

(1) Your holdings of outstanding securities with the same CUSIP number as the security being auctioned;

(2) Your holdings of STRIPS principal components of the security being auctioned, and;

(3) Your positions, in the security being auctioned, in:

(i) When-issued trading, including when-issued trading positions of the STRIPS principal components;

(ii) Futures contracts that require delivery of the specific security being auctioned (but not futures contracts for which the security being auctioned is one of several securities that may be delivered, and not futures contracts that are cash-settled); and

(iii) Forward contracts that require delivery of the specific security being auctioned or of the STRIPS principal component of that security.

(d) *Calculating the net long position in a reopening.* In a reopening (additional issue) of an outstanding security, you may subtract the exclusion amount stated in the auction announcement from:

(1) Your holdings of the outstanding securities (paragraph (c)(1) of this section) combined with

(2) Your holdings of STRIPS principal components of the security being auctioned (paragraph (c)(2) of this section). We will specify the amount of holdings that you may exclude from the net long position calculation in the auction announcement. You may not take the exclusion if your combined holdings are zero or less. The exclusion is optional, but if you take the exclusion, you must include any holdings that exceed the exclusion amount in calculating your net long position. If the exclusion amount is greater than your combined holdings (paragraphs (c)(1) and (2) of this section), you may calculate the combined holdings as

zero, but they cannot be included in the calculation as a negative number.

§ 356.14 What are the requirements for submitting bids for customers?

(a) *Institutions that may submit bids for customers.* Only depository institutions or dealers may submit bids for customers (*see* definitions at § 356.2), or for customers of intermediaries, under the requirements set out in this section. If a bid fulfills a guarantee to sell to a customer a specified amount of securities at the price determined in the auction, then the bid is a bid of that customer.

(b) *Payment.* Submitters must remit payment for bids they submit on behalf of customers, including customers of intermediaries, that result in awards of securities in the auction.

(c) *Identifying customers.* Submitters must provide the names of customers whenever they submit bids for them. Submitters must provide the names of their direct customers as well as customers of any intermediaries who are forwarding customer bids. For individuals, submitters must provide the customer's full name (first and last). For institutional customers, submitters must provide the name of the institution, and the bidder identification number if the customer provides it. For trusts or other fiduciary estates (See appendix A.), submitters must provide on the customer list:

(1) The full name or title of the trustee or fiduciary;

(2) A reference to the document creating the trust or fiduciary estate with date of execution; and

(3) The employer identification number (not social security number) of the trust or fiduciary estate. We do not consider trusts to be a separate bidder that have not been assigned, or that do not provide, an employer identification number.

(d) *Competitive customer bids.* For each customer competitive bid, the submitter must provide the customer's name, the amount bid, and the yield, discount rate, or discount margin. The submitter or intermediary must also report the net long position amount if the customer provides it. The submitter must inform a customer of the net long position reporting requirement (See § 356.13.) if the customer is bidding for $100 million or more of securities. If the submitter's or intermediary's personnel know that the customer's position information is not correct, the submitter or intermediary may not submit the customer's bid.

(e) *Noncompetitive customer bids.* For each noncompetitive bid, the submitter must provide the customer's name and the amount bid. Submitters may either provide the customer's name with the bid or, if the list of customers is lengthy, the submitter may provide a summary bid amount covering all noncompetitive customers. If it provides a summary bid amount, the submitter must transmit the list of individual customers and their bid amounts by close of business on the auction day. However, the submitter must be able to provide the customer list details by the noncompetitive bidding deadline if requested.

[69 FR 45202, July 28, 2004, as amended at 74 FR 26086, June 1, 2009; 78 FR 46429, July 31, 2013; 87 FR 40440, July 7, 2022]

§ 356.15 What rules apply to bids submitted by investment advisers?

(a) *General.* The auction rules that apply to investment advisers are determined by the relationship between "investment advisers" and "controlled accounts." An investment adviser means any person or entity that has investment discretion for the bids or positions of a different person or entity (a controlled account). A person or entity has investment discretion if it determines what, how many, and when securities will be purchased or sold on behalf of another person or entity. We consider a person that is employed or supervised by an investment adviser to be part of that investment adviser. We also consider the bids or positions of controlled accounts to be separate from the bids or positions of the person or entity with which they would otherwise be associated under the bidder categories in appendix A of this part.

(b) *Bidding options.* (1) An investment adviser has two options for whose name to use when bidding on behalf of controlled accounts.

An investment adviser may bid for a controlled account . . .	In such cases, we consider the bidder to be . . .
(i) in the investment adviser's own name	the investment adviser.
(ii) in the name of the controlled account	the controlled account.

(2) Using the first option (paragraph (b)(1)(i)), an investment advisor could bid noncompetitively up to the noncompetitive bidding limit only for itself, as a single bidder. Using the second option (paragraph (b)(1)(ii)), an investment adviser could bid noncompetitively for each separately named controlled account up to the noncompetitive bidding limit. The investment adviser could also bid noncompetitively in its own name in the same auction up to the noncompetitive bidding limit. An investment adviser may not bid for a controlled account both noncompetitively and competitively in the same auction. If an investment adviser is bidding competitively in the name of a controlled account, the controlled account is subject to the award limitations of §356.22(b).

(c) *Reporting net long positions.* If it is bidding competitively, an investment adviser must calculate the amount of its bids and positions for purposes of the net long position reporting requirement found in §356.13(a). In addition to its own competitive bids and positions, the investment adviser must also include in the calculation all other competitive bids and positions that it controls. If the net long position is reportable, the investment adviser must report it as a total in connection with only one bid as stated in §356.13(a). This requirement applies regardless of whether the investment adviser bids in its own name or in the name of its controlled accounts. The following table shows which positions an investment adviser must include to determine whether it meets the net long position reporting threshold in §356.13(a). If an investment adviser does meet the reporting threshold, the table also shows which positions must be included in, and which may be excluded from, the net long position calculation.

If an investment adviser is bidding competitively, and . . .	Then . . .
(1) the investment adviser has a net long position for its own account.	that position must be included in the investment adviser's net long position calculation.
(2) the investment adviser's competitive bid is for a controlled account.	any net long position of that account must be included in the investment adviser's net long position calculation.
(3) the investment adviser is not bidding competitively for a controlled account and	
(i) the controlled account has a net long position of $100 million or more.	that position must be included in the investment adviser's net long position calculation.
(ii) the controlled account has a net long position that is less than $100 million.	that position may be excluded from the investment adviser's net long position calculation.
(iii) any net long position is excluded under paragraph (b)(3)(ii) of this table.	all net short positions of controlled accounts under $100 million must also be excluded.

(d) *Certifications.* When an investment adviser bids for a controlled account, we deem the investment adviser to have certified that it is complying with this part and the auction announcement for the security. Further, we deem the investment adviser to have certified that the information it provided about bids for controlled accounts is accurate and complete.

(e) *Proration of awards.* Investment advisers that submit competitive bids in the names of controlled accounts are responsible for prorating any awards at the highest accepted yield, discount rate, or discount margin using the same percentage that we announce.See §356.21 for examples of how to prorate.

[69 FR 45202, July 28, 2004, as amended at 78 FR 46429, July 31, 2013]

§356.16 Do I have to make any certifications?

(a) *Submitters.* If you submit bids or other information in an auction, we deem you to have certified that:

(1) You are in compliance with this part and the auction announcement;

(2) The information provided with regard to any bids for your own account is accurate and complete; and

(3) The information provided with regard to any bids for customers accurately and completely reflects information provided by your customers or intermediaries.

(b) *Intermediaries.* If you forward bids in an auction, we deem you to have certified that:

(1) You are in compliance with this part and the applicable auction announcement; and

(2) That the information you provided to a submitter or other intermediary with regard to bids for customers accurately and completely reflects information provided by those customers or intermediaries.

(c) *Customers.* By bidding for a security as a customer we deem you to have certified that:

(1) You are in compliance with this part and the auction announcement and;

(2) The information you provided to the submitter or intermediary in connection with the bid is accurate and complete.

[69 FR 45202, July 28, 2004, as amended at 72 FR 14938, Mar. 20, 2008]

§ 356.17 How and when do I pay for securities awarded in an auction?

(a) *General.* By bidding in an auction, you agree to pay the settlement amount for any securities awarded to you. (See § 356.25.) For notes and bonds, the settlement amount may include a premium amount, accrued interest, and, for inflation-protected securities, an inflation adjustment.

(b) *Securities held directly with Treasury.* You must pay for your awarded securities by a debit entry to a deposit account that you are authorized to debit or by using the redemption proceeds of your certificate of indebtedness. Payment by debit entry occurs on the settlement date for the actual settlement amount due. (*See* § 356.25.)

(c) *Commercial book-entry system.* Unless you make other provisions, payment of the settlement amount must be by charge to the funds account of a depository institution at a Federal Reserve Bank.

(1) A submitter that does not have a funds account at a Federal Reserve Bank or that chooses not to pay by charge to its own funds account must have an approved autocharge agreement on file with us before submitting any bids. Any depository institution whose funds account will be charged under an autocharge agreement will receive advance notice from us of the total par amount of, and price to be charged for, securities awarded as a result of the submitter's bids.

(2) A submitter that is a member of a clearing corporation may instruct that delivery and payment be made through the clearing corporation for securities awarded to the submitter for its own account. To do this, the following requirements must be met prior to submitting any bids:

(i) We must have acknowledged and have on file an autocharge agreement between the clearing corporation and a depository institution. By entering into such an agreement, the clearing corporation authorizes us to provide aggregate par and price information to the depository institution whose funds account will be charged under the agreement. The clearing corporation is responsible for remitting payment for auction awards of the clearing corporation member.

(ii) We must have acknowledged and have on file a delivery and payment agreement between the submitter and the clearing corporation. By entering into such an agreement, the submitter authorizes us to provide award and payment information to the clearing corporation.

[69 FR 45202, July 28, 2004, as amended at 70 FR 57440, Sept. 30, 2005; 70 FR 71401, Nov. 29, 2005; 73 FR 14938, Mar. 20, 2008; 87 FR 40440, July 7, 2022]

Subpart C—Determination of Auction Awards; Settlement

§ 356.20 How does the Treasury determine auction awards?

(a) *Determining the range and amount of accepted competitive bids*—(1) *Accepting bids.* First we accept in full all noncompetitive bids that were submitted by the noncompetitive bidding deadline. After the closing time for receipt of competitive bids we start accepting those at the lowest yields, discount rates, or discount margins, through successively higher yields, discount rates, or discount margins, up to the amount required to meet the offering amount. When necessary, we prorate bids at the highest accepted yield, discount rate, or discount margin as described below. If the amount of noncompetitive bids would absorb all or most of the offering amount, we will accept competitive bids in an amount sufficient to provide a fair determination of the yield, discount rate, or discount margin for the securities we are auctioning.

(2) *Accepting bids at the high yield, discount rate, or discount margin.* Generally, the total amount of bids at the highest accepted yield, discount rate, or discount margin exceeds the offering amount remaining after we accept the noncompetitive bids and the competitive bids at the lower yields, discount rates, or discount margins. In order to keep the total amount of awards as close as possible to the announced offering amount, we award a percentage of the bids at the highest accepted yield, discount rate, or discount margin. We derive the percentage by dividing the remaining par amount needed to fill the offering amount by the par amount of the bids at the high yield, discount rate, or discount margin and rounding up to the next hundredth of a whole percentage point, for example, 17.13%.

(b) *Determining the interest rate for new non-indexed and inflation-protected note and bond issues.* If a Treasury non-indexed or inflation-protected note or bond auction results in a yield lower than 0.125 percent, the interest rate will be set at ⅛ of one percent, and successful bidders' award prices will be calculated accordingly. (*See* appendix B to this part for formulas.)

(1) *Single-price auctions.* The interest rate we establish produces the price closest to, but not above, par when evaluated at the yield of awards to successful competitive bidders.

(2) *Multiple-price auctions.* The interest rate we establish produces the price closest to, but not above, par when evaluated at the weighted-average yield of awards to successful competitive bidders.

(c) *Determining the interest rate for floating rate notes.* The interest rate will be the spread plus the index rate (as it may be adjusted on the calendar day following each auction of 13-week bills) subject to a minimum daily interest accrual rate of zero percent.

(d) *Determining purchase prices for awarded securities.* We round price calculations to six decimal places on the basis of price per hundred, for example, 99.954321 (See appendix B to this part).

(1) *Single-price auctions.* We award securities to both noncompetitive and competitive bidders at the price equivalent to the highest accepted yield, discount rate, or discount margin at which bids were accepted. For inflation-protected securities, the price for awarded securities is the price equivalent to the highest accepted real yield.

(2) *Multiple-price auctions*—(i) *Competitive bids.* We award securities to competitive bidders at the price equivalent to each yield, discount rate, or discount margin at which their bids were accepted.

(ii) *Noncompetitive bids.* We award securities to noncompetitive bidders at the price equivalent to the weighted average yield, discount rate, or discount margin of accepted competitive bids.

[69 FR 45202, July 28, 2004, as amended at 69 FR 53621, Sept. 2, 2004; 76 FR 11080, Mar. 1, 2011; 78 FR 46429, July 31, 2013; 87 FR 40440, July 7, 2022]

§ 356.21 How are awards at the high yield, discount rate, or discount margin calculated?

(a) *Awards to submitters.* We generally prorate bids at the highest accepted yield, discount rate, or discount margin under § 356.20(a)(2) of this part. For example, if 80.15% is the announced percentage at the highest yield, discount rate, or discount margin, we award 80.15% of the amount of each bid at that yield, discount rate, or discount margin. A bid for $100 million at the highest accepted yield, discount rate, or discount margin would be awarded $80,150,000 in this example. We always make awards for at least the minimum to bid, and above that amount we make awards in the appropriate multiple to bid. For example, Treasury bills may be issued with a minimum to bid of $100 and multiples to bid of $100. Say we accept an $18,000 bid at the high discount rate, and the percent awarded at the high discount rate is 88.27%. We would award $15,900 to that bidder, which is an upward adjustment from $15,888.60 ($18,000 × .8827) to the nearest multiple of $100. If we were to award 4.65% of bids at the highest accepted rate, for example, the award for a $100 bid at that rate would be $100, rather than $4.65, in order to meet the minimum to bid for a bill issue.

(b) *Awards to customers.* The same prorating rules apply to customers as apply to submitters. Depository institutions and dealers, whether submitters or intermediaries, are responsible for prorating awards for their customers at the same percentage that we announce. For example, if 80.15% is the announced percentage at the highest yield, discount rate, or discount margin, then each customer bid at that yield, discount rate, or discount margin must be awarded 80.15%.

[69 FR 45202, July 28, 2004, as amended at 74 FR 26086, June 1, 2009; 78 FR 46430, July 31, 2013]

§ 356.22 Does the Treasury have any limitations on auction awards?

(a) *Awards to noncompetitive bidders.* The maximum award to any noncompetitive bidder is $10 million. This limit does not apply to bidders bidding solely through a request to reinvest the proceeds of a maturing security held directly with Treasury.

(b) *Awards to competitive bidders.* The maximum award is 35 percent of the offering amount less the bidder's net long position as reportable under § 356.13. For example, in a note auction with a $10 billion offering amount, and therefore a maximum award of $3.5 billion, a bidder with a reported net long position of $1 billion could receive a maximum auction award of $2.5 billion. When the bids and net long positions of more than one person or entity must be combined, as is the case with investment advisers and controlled accounts (See § 356.15(c).), we will use this combined amount for the purpose of this 35 percent award limit.

[69 FR 45202, July 28, 2004, as amended at 69 FR 53622, Sept. 2, 2004; 70 FR 57440, Sept. 30, 2005; 87 FR 40440, July 7, 2022]

§ 356.23 How are the auction results announced?

(a) After the conclusion of the auction, we will make the auction results available on our website at *http://www.treasurydirect.gov.*

(b) The auction results will include such information as:

(1) The amounts of bids we accepted and the amount of securities we awarded;

(2) The range of accepted yields, discount rates, or discount margins.

(3) The proration percentage;

(4) The interest rate for a note or bond;

(5) A breakdown of the amounts of noncompetitive and competitive bids we accepted from, and awarded to, the public;

(6) The amounts of bids tendered and accepted from the Federal Reserve Banks for their own accounts;

(7) The bid-to-cover ratio; and

(8) Other information that we may decide to include.

[69 FR 45202, July 28, 2004, as amended at 74 FR 26086, June 1, 2009; 78 FR 46430, July 31, 2013; 87 FR 40440, July 7, 2022]

§ 356.24 Will I be notified directly of my awards and, if I am submitting bids for others, do I have to provide confirmations?

(a) *Notice of awards*—(1) *Notice to submitters.* We will provide notice to all submitters letting them know whether their bids were successful or not.

(2) *Notice to clearing corporations.* If we are to deliver awarded securities under a delivery and payment agreement, we will provide notice of the awards to the clearing corporation that is a party to the agreement.

(b) *Notification of awards to customers.* If you are a submitter for customers, you are responsible for notifying them of their awards. You are also responsible for notifying any intermediaries that forwarded successful bids to you. Similarly, an intermediary is responsible for providing notification of any awards to its customers and any intermediaries from whom it received bids.

(c) *Notification of awards and settlement amounts to a depository institution having an autocharge agreement with a submitter or a clearing corporation.* We will provide notice to each depository institution that has entered into an autocharge agreement with a submitter or a clearing corporation of the amount to be charged, on the issue date, to the institution's funds account at the Federal Reserve Bank servicing the institution. We will provide this notification no later than the day after the auction.

(d) *Customer confirmation*—(1) *Customer requirements*—(i) *When and how must a customer confirm its awards?* Any customer awarded a par amount of $2 billion or more in an auction must send us a confirmation in written form or via e-mail containing the information in paragraph (d)(1)(ii) of this section. The confirmation must be sent no later than 10 a.m. Eastern Time on the next business day following the auction. If sent in written form, the confirmation must be signed by the customer or authorized representative. Confirmations sent by e-mail must be sent by the customer or authorized representative. Confirmations signed or sent by an authorized representative must include the capacity in which the representative is acting.

(ii) *What must the customer include in its confirmation?* The information the customer must provide is:

(A) A confirmation of the awarded bid(s), including the name of each submitter that submitted the bid(s) on the customer's behalf, and

(B) A statement indicating whether the customer had a reportable net long position as defined in § 356.13. If a position had to be reported, the statement must provide the amount of the position and the name of the submitter that the customer requested to report the position.

(2) *Submitter or intermediary requirements.* A submitter or intermediary submitting or forwarding bids for a customer must notify the customer of the customer confirmation reporting requirement if we award the customer $2 billion or more as a result of those bids.

[69 FR 45202, July 28, 2004, as amended at 71 FR 76151, Dec. 20, 2006; 74 FR 26086, June 1, 2009; 74 FR 47100, Sept. 15, 2009]

§ 356.25 How does the settlement process work?

Securities bought in the auction must be paid for by the issue date. The payment amount for awarded securities will be the settlement amount as defined in § 356.2. (See formulas in appendix B.) There are several ways to pay for securities:

(a) *Payment by debit entry to a deposit account.* If you are paying by debit entry to a deposit account as provided for in § 356.17(b), we will charge the settlement amount to the specified account on the issue date.

(b) *Payment by authorized charge to a funds account.* Where the submitter's method of payment is an authorized charge to the funds account of a depository institution as provided for in § 356.17(c), we will charge the settlement amount to the specified funds account on the issue date.

(c) *Payment through a certificate of indebtedness.* If you are paying with the redemption proceeds of your certificate of indebtedness as provided for in § 356.17(b), we will redeem the certificate of indebtedness for the settlement amount of the security and apply the proceeds on the issue date.

[69 FR 45202, July 28, 2004, as amended at 70 FR 57440, Sept. 30, 2005; 73 FR 14938, Mar. 20, 2008; 87 FR 40440, July 7, 2022]

Subpart D—Miscellaneous Provisions

§ 356.30 When does the Treasury pay principal and interest on securities?

(a) *General.* We will pay principal on bills, notes, and bonds on the maturity date as specified in the auction announcement. Interest on bills consists of the difference between the discounted amount paid by the investor at original issue and the par value we pay to the investor at maturity. Interest on notes and bonds accrues from the dated date. Interest is payable on a semiannual or quarterly basis on the interest payment dates specified in the auction announcement through the maturity date. If any principal or interest payment date is a Saturday, Sunday, or other day on which the Federal Reserve System is not open for business, we will make the payment (without additional interest) on the next business day. If a bond is callable, we will pay the principal prior to maturity if we call it under its terms, which include providing appropriate public notice.

(b) *Treasury inflation-protected securities.* (1) This table explains the amount that we will pay to holders of inflation-protected securities at maturity.

At maturity, if . . .	then . . .
(i) the inflation-adjusted principal is equal to or more than the par amount of the security..	we will pay the inflation-adjusted principal.
(ii) the inflation-adjusted principal is less than the par amount of the security, and the security has not been stripped..	we will pay an additional amount so that the additional amount plus the inflation-adjusted principal equals the par amount.
(iii) the inflation-adjusted principal is less than the par amount of the security, and the security has been stripped..	to holders of principal components only we will pay an additional amount so that the additional amount plus the inflation-adjusted principal equals the par amount.

(2) Regardless of whether or not we pay an additional amount, we will base the final interest payment on the inflation-adjusted principal at maturity.

(c) *Discharge of payment obligations*—(1) *The commercial book-entry system.* We discharge our payment obligations when we credit payment to the account maintained at a Federal Reserve Bank for a depository institution or other authorized entity, or when we make payment according to the instructions of the person or entity maintaining the account. Further, we do not have any obligations to any person or entity that does not have an account with a Federal Reserve Bank. We also will not recognize the claims of any person or entity:

(i) That does not have an account at a Federal Reserve Bank, or

(ii) With respect to any accounts not maintained at a Federal Reserve Bank.

(2) *Securities held directly with Treasury.* We discharge our payment obligations when we make payment to a depository institution for credit to the account specified by the owner of the security, when we make payment for a certificate of indebtedness to be issued and held in the owner's account, or when we make payment according to the instructions of the security's owner or the owner's legal representative.

[69 FR 45202, July 28, 2004, as amended at 70 FR 57441, Sept. 30, 2005; 78 FR 46430, July 31, 2013; 87 FR 40440, July 7, 2022]

§ 356.31 How does the STRIPS program work?

(a) *General.* Notes or bonds (other than Treasury floating rate notes) may be ''stripped''—divided into separate principal and interest components. These components must be maintained in the commercial book-entry system. Stripping is done at the option of the holder, and may occur at any time from issuance until maturity. We provide the CUSIP numbers and payment dates for the principal and interest components in auction announcements and on our Web site at *http://www.treasurydirect.gov.*

(b) *Treasury non-indexed securities (notes and bonds other than Treasury inflation-protected securities or Treasury floating rate notes)*—(1) *Minimum par amounts required for STRIPS.* The minimum par amount of a non-indexed security that may be stripped is $100. Any par amount to be stripped above $100 must be in a multiple of $100.

(2) *Principal components.* Principal components stripped from non-indexed securities are maintained in accounts, and transferred, at their par amount. They have a CUSIP number that is different from the CUSIP number of the fully constituted (unstripped) security.

(3) *Interest components.* Interest components stripped from non-indexed securities have the following features:

(i) They are maintained in accounts, and transferred, at their original payment value, which is derived by multiplying the semiannual interest rate and the par amount;

(ii) Their interest payment date becomes the maturity date for the component;

(iii) All interest components with the same maturity date have the same CUSIP number, regardless of the underlying security from which the interest payments were stripped, and therefore are fungible (interchangeable).

(iv) the CUSIP numbers of interest components are different from the CUSIP numbers of principal components and fully constituted securities, even if they have the same maturity date, and therefore are not fungible.

(c) *Treasury inflation-protected securities*—(1) *Minimum par amounts required for STRIPS.* The minimum par amount of an inflation-protected security that may be stripped is $100. Any par amount to be stripped above $100 must be in a multiple of $100.

(2) *Principal components.* Principal components stripped from inflation-protected securities are maintained in accounts, and transferred, at their par amount. At maturity, the holder will receive the inflation-adjusted principal or the par amount, whichever is greater. (See § 356.30.) A principal component has a CUSIP number that is different from the CUSIP number of the fully constituted (unstripped) security.

(3) *Interest components*—(i) *Adjusted value.* Interest components stripped from inflation-protected securities are maintained in accounts, and transferred, at their adjusted value. This value is derived by multiplying the semiannual interest rate by the par amount and then multiplying this value by: 100 divided by the Reference CPI of the original issue date. (The dated date is used instead of the original issue date when the dates are different.) See appendix B, section V of this part for an example of how to do this calculation.

(ii) *CUSIP numbers.* When an interest payment is stripped from an inflation-protected security, the interest payment date becomes the maturity date for the component. All interest components with the same maturity date have the same CUSIP number, regardless of the underlying security from which the interest payments were stripped. Such interest components are fungible (interchangeable). The CUSIP numbers of interest components are different from the CUSIP numbers of principal components and fully constituted securities, even if they have the same maturity date.

(iii) *Payment at maturity.* At maturity, the payment to the holder will be derived by multiplying the adjusted value of the interest component by the Reference CPI of the maturity date, divided by 100. See appendix B, section V of this part for an example of how to do this calculation.

(iv) *Rebasing of the CPI.* If the CPI is rebased to a different time base reference period (See appendix D.), the adjusted values of all outstanding inflation-protected interest components will be converted to adjusted values based on the new base reference period. At that time, we will publish information that describes how this conversion will occur. After rebasing, any interest components created from a security that was issued during a prior base reference period will be issued with adjusted values calculated using reference CPIs under the most-recent base reference period.

(d) *Reconstituting a security.* Stripped interest and principal components may be reconstituted, that is, put back together into their fully constituted form. A principal component and all related unmatured interest components, in the appropriate minimum or multiple amounts or adjusted values, must be submitted together for reconstitution. Because inflation-protected interest components are different from non-indexed interest components, they are not interchangeable for reconstitution purposes.

(e) *Applicable regulations.* Subparts A, B, and D of part 357 of this chapter govern notes and bonds stripped into their STRIPS components, unless we state differently in this part.

[69 FR 45202, July 28, 2004, as amended at 73 FR 14939, Mar. 20, 2008; 74 FR 26086, June 1, 2009; 78 FR 46428, 46430, July 31, 2013; 81 FR 43070, July 1, 2016]

§ 356.32 What tax rules apply?

(a) *General.* Securities issued under this part are subject to all applicable taxes imposed under the Internal Revenue Code of 1986, or its successor. Under section 3124 of title 31, United

States Code, the securities are exempt from taxation by a State or political subdivision of a State, except for State estate or inheritance taxes and other exceptions as provided in that section.

(b) *Treasury inflation-protected securities.* Special federal income tax rules for inflation-protected securities, including stripped inflation-protected principal and interest components, are set forth in Internal Revenue Service regulations.

(c) *Treasury floating rate notes.* Special federal income tax rules for floating rate notes are set forth in Internal Revenue Service regulations.

[69 FR 45202, July 28, 2004, as amended at 78 FR 46430, July 31, 2013]

§ 356.33 Does the Treasury have any discretion in the auction process?

(a) We have the discretion to:

(1) Accept, reject, or refuse to recognize any bids submitted in an auction;

(2) Award more or less than the amount of securities specified in the auction announcement;

(3) Waive any provision of this part for any bidder or submitter; and

(4) Change the terms and conditions of an auction.

(b) Our decisions under this part are final. We will provide a public notice if we change any auction provision, term, or condition.

(c) We reserve the right to modify the terms and conditions of new securities and to depart from the customary pattern of securities offerings at any time.

§ 356.34 What could happen if someone does not fully comply with the auction rules or fails to pay for securities?

(a) *General.* If a person or entity fails to comply with any of the auction rules in this part, we will consider the circumstances and take what we deem to be appropriate action. This could include barring the person or entity from participating in future auctions under this part. We also may refer the matter to an appropriate regulatory agency.

(b) *Liquidated damages.* If you fail to pay for awarded securities in a timely manner, we may require you to pay liquidated damages of up to one percent of the par amount of securities we awarded to you. Our use of this liquidated damages remedy does not preclude us from using any other appropriate remedy.

§ 356.35 Who approved the information collections?

The Office of Management and Budget approved the collections of information contained in §§ 356.11, 356.12, 356.13, 356.14, and 356.15 and in appendix A of this part under control number 1535–0112.

APPENDIX A TO PART 356—BIDDER CATEGORIES

I. CATEGORIES OF ELIGIBLE BIDDERS

We describe below various categories of bidders eligible to bid in Treasury auctions. You may use them to determine whether we consider you and other persons or entities to be one bidder or more than one bidder for auction bidding and compliance purposes. For example, we use these definitions to apply the competitive and noncompetitive award limitations and for other requirements. Notwithstanding these definitions, we consider any persons or entities that intentionally act together with respect to bidding in a Treasury auction to collectively be one bidder. Even if an auction participant does not fall under any of the categories listed below, it is our intent that no auction participant receives a larger auction award by acquiring securities through others than it could have received had it been considered one of these types of bidders.

(a) *Corporation*—We consider a corporation to be one bidder. A corporation includes all of its affiliates, which may be persons, partnerships, or other entities. We consider a business trust, such as a Massachusetts or Delaware business trust, to be a corporation. We use the term ''corporate structure'' to refer to the collection of affiliates that we consider collectively to be one bidder. An affiliate is any:

• Entity that is more than 50-percent owned, directly or indirectly, by the corporation;

• Entity that is more than 50-percent owned, directly or indirectly, by any other affiliate of the corporation;

• Person or entity that owns, directly or indirectly, more than 50 percent of the corporation;

• Person or entity that owns, directly or indirectly, more than 50 percent of any other affiliate of the corporation; or

• Entity, a majority of whose board of directors or a majority of whose general partners are directors or officers of the corporation, or of any affiliate of the corporation.

An entity that is more than 50-percent owned as described in this definition is not an affiliate, however, if:

• The purpose of such ownership is to seek a return on investment and not to engage in the business of the entity;

• The owner does not routinely exercise operational or management control over the entity;

• The owner does not exercise any control over investment decisions of the entity regarding U.S. Treasury securities;

• The corporation has written policies or procedures, including ongoing compliance monitoring processes, that are designed to prevent it from acting together with the entity regarding participation in Treasury auctions or investment strategies regarding Treasury securities being auctioned; and

• The corporation submits notice and certification to us, as provided in this appendix A.

A corporation that plans to make use of this exception to the definition of ''affiliate'' must inform us of this fact in writing and provide the following certification:

[Name of corporation] hereby certifies that, with regard to any entity of which it owns more than 50 percent as defined in appendix A to 31 CFR part 356, but for which the purpose of such ownership is to seek a return on investment and not to engage in the business of the entity:

• We do not routinely exercise operational or management control over the entity;

• We do not exercise any control over investment decisions of the entity regarding U.S. Treasury securities;

• We have written policies or procedures, including ongoing compliance monitoring processes, that are designed to prevent the corporation from acting together with the entity regarding participation in Treasury auctions or investment strategies regarding Treasury securities being auctioned; and

• We will continue to meet the terms of this certification until we notify the Treasury of a change.

(b) *Partnership*—We consider a partnership to be one bidder if it is a partnership for which the Internal Revenue Service has assigned a tax-identification number. A partnership includes all of its affiliates, which may be persons, corporations, general partners acting on behalf of the partnership, or other entities. We use the term ''partnership structure'' to refer to the collection of affiliates that we consider collectively to be one bidder. We may consider a partnership structure that contains one or more corporations as a ''partnership'' or a ''corporation,'' but not both.

An affiliate is any:

• Entity that is more than 50-percent owned, directly or indirectly, by the partnership;

• Entity that is more than 50-percent owned, directly or indirectly, by any other affiliate of the partnership;

• Person or entity that owns, directly or indirectly, more than 50 percent of the partnership;

• Person or entity that owns, directly or indirectly, more than 50 percent of any other affiliate of the partnership; or

• Entity, a majority of whose general partners or a majority of whose board of directors are general partners or directors of the partnership or of any affiliate of the partnership.

An entity that is more than 50-percent owned as described in this definition is not an affiliate, however, if:

• The purpose of such ownership is to seek a return on investment and not to engage in the business of the entity;

• The owner does not routinely exercise operational or management control over the entity;

• The owner does not exercise any control over investment decisions of the entity regarding U.S. Treasury securities;

• The partnership has written policies or procedures, including ongoing compliance monitoring processes, that are designed to prevent it from acting together with the entity regarding participation in Treasury auctions or investment strategies regarding Treasury securities being auctioned; and

• The partnership submits notice and certification to us, as provided in this appendix A.

A partnership that plans to make use of this exception to the definition of ''affiliate'' must inform us of this fact in writing and provide the following certification:

[Name of partnership] hereby certifies that, with regard to any entity of which it owns more than 50 percent as defined in appendix A to 31 CFR part 356, but for which the purpose of such ownership is to seek a return on investment and not to engage in the business of the entity:

• We do not routinely exercise operational or management control over the entity;

• We do not exercise any control over investment decisions of the entity regarding U.S. Treasury securities;

• We have written policies or procedures, including ongoing compliance monitoring processes, that are designed to prevent the partnership from acting together with the entity regarding participation in Treasury auctions or investment strategies regarding Treasury securities being auctioned; and

• We will continue to meet the terms of this certification until we notify the Treasury of a change.

(c) *Government-related entity*—We consider each of the following entities to be one bidder:

(1) A state government or the government of the District of Columbia

(2) A unit of local government, including any county, city, municipality, or township, or other unit of general government as defined by the Bureau of the Census for statistical purposes.

(3) A commonwealth, territory, or possession of the United States.

(4) A governmental entity, body, or corporation established under Federal, State, or local law.

(5) A foreign central bank, the government of a foreign state, or an international organization in which the United States holds membership. This type of entity applies only when such entity is not using an account at the Federal Reserve Bank of New York (See paragraph (f).).

We generally consider an investment, reserve, or other fund of one of the above government-related entities as part of that entity and not a separate bidder. We will consider a government-related entity's fund to be a separate bidder if it meets the definition of the ''trust or other fiduciary estate'' category, or if applicable law requires that the investments of such fund be made separately.

(d) *Trust or other fiduciary estate*—We consider a legal entity created under a valid trust instrument, court order, or other legal authority that designates a trustee or fiduciary to act for the benefit of a named beneficiary to be one bidder. The following conditions must also be met for us to consider a trust entity to be one bidder:

- The legal entity must be able to be identified by:

1. The name or title of the trustee or fiduciary;

2. Specific reference to the trust instrument, court order, or legal authority under which the trustee or fiduciary is acting; and

3. The unique IRS-assigned employer identification number (not social security number) for the entity.

- The trustee or fiduciary must make the decisions on participating in auctions on behalf of the trust or fiduciary estate.

(e) *Individual*—We consider a person to be one bidder, regardless of whether he or she is acting as an individual, a sole proprietor, or for any entity not otherwise defined as a bidder. If a person meets the definition of an affiliate within a corporate or partnership structure, we will consider him or her to be a bidder in this ''individual'' category if the corporation or partnership is not bidding in the same auction. We do not consider a person acting in an official capacity as an employee or other representative of a bidder defined in any other category to be an ''individual'' bidder. We consider a person, his or her spouse, and any children under the age of 21 having a common household to be one ''individual'' bidder.

(f) *Foreign and International Monetary Authority (''FIMA'')*—We consider one or more parties making up a foreign or international monetary organization that is not private in nature to be a bidder called a FIMA entity if at least one of the parties is a foreign or international entity that is (i) financial in nature, or (ii) not financial in nature but is authorized to open an account at the Federal Reserve Bank of New York. We consider each of the following entities to be a single FIMA entity:

(1) A foreign central bank or regional central bank.

(2) A foreign governmental monetary or finance entity.

(3) A non-governmental international financial organization that is not private in nature (for example, the International Monetary Fund, the World Bank, the Inter-American Development Bank, and the Asian Development Bank).

(4) A non-financial international organization that the United States participates in (for example, the United Nations).

(5) A multi-party arrangement of a governmental ministry and/or a foreign central bank or monetary authority with a United States Government Department and/or the Federal Reserve Bank of New York.

(6) A foreign or international monetary entity or an entity authorized by statute or by us to open accounts at the Federal Reserve Bank of New York.

(g) *Other Bidder*—We do not consider a bidder defined by any of the above categories to be a bidder in this category. For purposes of this definition, ''other bidder'' means an institution or organization with a unique IRS-assigned employer identification number. This definition includes such entities as an association, church, university, union, or club. This category does not include any person or entity acting in a fiduciary or investment management capacity, a sole proprietorship, an investment account, an investment fund, a form of registration, or investment ownership designation.

II. How To Obtain Separate Bidder Recognition

Under certain circumstances, we may recognize a major organizational component (e.g., the parent or a subsidiary) in a corporate or partnership structure as a bidder separate from the larger corporate or partnership structure. We also may recognize two or more major organizational components collectively as one bidder. All of the following criteria must be met for such component(s) to qualify for recognition as a separate bidder:

(a) Such component(s) must be prohibited by law or regulation from exchanging, or must have established written internal procedures designed to prevent the exchange of, information related to bidding in Treasury auctions with any other component in the corporate or partnership structure;

(b) Such component(s) must not be created for the purpose of circumventing our bidding and award limitations;

(c) Decisions related to purchasing Treasury securities at auction and participation in specific auctions must be made by employees of such component(s). Employees of such component(s) that make decisions to purchase or dispose of Treasury securities must not perform the same function for other components within the corporate or partnership structure; and

(d) The records of such component(s) related to the bidding for, acquisition of, and disposition of Treasury securities must be maintained by such component(s). Those records must be identifiable—separate and apart from similar records for other components within the corporate or partnership structure. To obtain recognition as a separate bidder, each component or group of components must request such recognition from us, provide a description of the component or group and its position within the corporate or partnership structure, and provide the following certification:

[Name of the bidder] hereby certifies that to the best of its knowledge and belief it meets the criteria for a separate bidder as described in appendix A to 31 CFR part 356. The above-named bidder also certifies that it has established written policies or procedures, including ongoing compliance monitoring processes, that are designed to prevent the component or group of components from:

(1) Exchanging any of the following information with any other part of the corporate [partnership] structure: (a) Yields, discount rates, or discount margins at which it plans to bid; (b) amounts of securities for which it plans to bid; (c) positions that it holds or plans to acquire in a security being auctioned; and (d) investment strategies that it plans to follow regarding the security being auctioned, or

(2) In any way intentionally acting together with any other part of the corporate [partnership] structure with respect to formulating or entering bids in a Treasury auction.

The above-named bidder agrees that it will promptly notify the Department in writing when any of the information provided to obtain separate bidder status changes or when this certification is no longer valid.

[69 FR 45202, July 28, 2004, as amended at 70 FR 29456, May 23, 2005; 78 FR 46430, July 31, 2013]

APPENDIX B TO PART 356—FORMULAS AND TABLES

I. Computation of Interest on Treasury Bonds and Notes.
II. Formulas for Conversion of Non-indexed Security Yields to Equivalent Prices.
III. Formulas for Conversion of Inflation-Protected Security Yields to Equivalent Prices.
IV. Formulas for Conversion of Floating Rate Note Discount Margins to Equivalent Prices
V. Computation of Adjusted Values and Payment Amounts for Stripped Inflation-Protected Interest Components.
VI. Computation of Purchase Price, Discount Rate, and Investment Rate (Coupon-Equivalent Yield) for Treasury Bills.

The examples in this appendix are given for illustrative purposes only and are in no way a prediction of interest rates on any bills, notes, or bonds issued under this part. In some of the following examples, we use intermediate rounding for ease in following the calculations.

I. COMPUTATION OF INTEREST ON TREASURY BONDS AND NOTES

A. Treasury Non-indexed Securities

1. *Regular Half-Year Payment Period*. We pay interest on marketable Treasury non-indexed securities on a semiannual basis. The regular interest payment period is a full half-year of six calendar months. Examples of half-year periods are: (1) February 15 to August 15, (2) May 31 to November 30, and (3) February 29 to August 31 (in a leap year). Calculation of an interest payment for a non-indexed note with a par amount of $1,000 and an interest rate of 8% is made in this manner: ($1,000 × .08)/2 = $40. Specifically, a semiannual interest payment represents one half of one year's interest, and is computed on this basis regardless of the actual number of days in the half-year.

2. *Daily Interest Decimal*. We compute a daily interest decimal in cases where an interest payment period for a non-indexed security is shorter or longer than six months or where accrued interest is payable by an investor. We base the daily interest decimal on the actual number of calendar days in the half-year or half-years involved. The number of days in any half-year period is shown in Table 1.

TABLE 1

Interest period	Beginning and ending days are 1st or 15th of the months listed under interest period (number of days)		Beginning and ending days are the last days of the months listed under interest period (number of days)	
	Regular year	Leap year	Regular year	Leap year
January to July	181	182	181	182
February to August	181	182	184	184
March to September	184	184	183	183
April to October	183	183	184	184
May to November	184	184	183	183
June to December	183	183	184	184
July to January	184	184	184	184
August to February	184	184	181	182
September to March	181	182	182	183
October to April	182	183	181	182
November to May	181	182	182	183
December to June	182	183	181	182

Table 2 below shows the daily interest decimals covering interest from ⅛% to 20% on $1,000 for one day in increments of ⅛ of one percent. These decimals represent 1⁄181, 1⁄182, 1⁄183, or 1⁄184 of a full semiannual interest payment, depending on which half-year is applicable.

TABLE 2

[Decimal for one day's interest on $1,000 at various rates of interest, payable semiannually or on a semiannual basis, in regular years of 365 days and in years of 366 days (to determine applicable number of days, see table 1.)]

Rate per annum (percent)	Half-year of 184 days	Half-year of 183 days	Half-year of 182 days	Half-year of 181 days
⅛	0.003396739	0.003415301	0.003434066	0.003453039
¼	0.006793478	0.006830601	0.006868132	0.006906077
⅜	0.010190217	0.010245902	0.010302198	0.010359116
½	0.013586957	0.013661202	0.013736264	0.013812155
⅝	0.016983696	0.017076503	0.017170330	0.017265193
¾	0.020380435	0.020491803	0.020604396	0.020718232
⅞	0.023777174	0.023907104	0.024038462	0.024171271
1	0.027173913	0.027322404	0.027472527	0.027624309
1⅛	0.030570652	0.030737705	0.030906593	0.031077348
1¼	0.033967391	0.034153005	0.034340659	0.034530387
1⅜	0.037364130	0.037568306	0.037774725	0.037983425
1½	0.040760870	0.040983607	0.041208791	0.041436464
1⅝	0.044157609	0.044398907	0.044642857	0.044889503
1¾	0.047554348	0.047814208	0.048076923	0.048342541
1⅞	0.050951087	0.051229508	0.051510989	0.051795580
2	0.054347826	0.054644809	0.054945055	0.055248619
2⅛	0.057744565	0.058060109	0.058379121	0.058701657
2¼	0.061141304	0.061475410	0.061813187	0.062154696
2⅜	0.064538043	0.064890710	0.065247253	0.065607735
2½	0.067934783	0.068306011	0.068681319	0.069060773
2⅝	0.071331522	0.071721311	0.072115385	0.072513812
2¾	0.074728261	0.075136612	0.075549451	0.075966851
2⅞	0.078125000	0.078551913	0.078983516	0.079419890
3	0.081521739	0.081967213	0.082417582	0.082872928
3⅛	0.084918478	0.085382514	0.085851648	0.086325967
3¼	0.088315217	0.088797814	0.089285714	0.089779006
3⅜	0.091711957	0.092213115	0.092719780	0.093232044
3½	0.095108696	0.095628415	0.096153846	0.096685083
3⅝	0.098505435	0.099043716	0.099587912	0.100138122
3¾	0.101902174	0.102459016	0.103021978	0.103591160
3⅞	0.105298913	0.105874317	0.106456044	0.107044199
4	0.108695652	0.109289617	0.109890110	0.110497238
4⅛	0.112092391	0.112704918	0.113324176	0.113950276
4¼	0.115489130	0.116120219	0.116758242	0.117403315
4⅜	0.118885870	0.119535519	0.120192308	0.120856354
4½	0.122282609	0.122950820	0.123626374	0.124309392
4⅝	0.125679348	0.126366120	0.127060440	0.127762431
4¾	0.129076087	0.129781421	0.130494505	0.131215470
4⅞	0.132472826	0.133196721	0.133928571	0.134668508
5	0.135869565	0.136612022	0.137362637	0.138121547

TABLE 2—Continued

[Decimal for one day's interest on $1,000 at various rates of interest, payable semiannually or on a semiannual basis, in regular years of 365 days and in years of 366 days (to determine applicable number of days, see table 1.)]

Rate per annum (percent)	Half-year of 184 days	Half-year of 183 days	Half-year of 182 days	Half-year of 181 days
5⅛	0.139266304	0.140027322	0.140796703	0.141574586
5¼	0.142663043	0.143442623	0.144230769	0.145027624
5⅜	0.146059783	0.146857923	0.147664835	0.148480663
5½	0.149456522	0.150273224	0.151098901	0.151933702
5⅝	0.152853261	0.153688525	0.154532967	0.155386740
5¾	0.156250000	0.157103825	0.157967033	0.158839779
5⅞	0.159646739	0.160519126	0.161401099	0.162292818
6	0.163043478	0.163934426	0.164835165	0.165745856
6⅛	0.166440217	0.167349727	0.168269231	0.169198895
6¼	0.169836957	0.170765027	0.171703297	0.172651934
6⅜	0.173233696	0.174180328	0.175137363	0.176104972
6½	0.176630435	0.177595628	0.178571429	0.179558011
6⅝	0.180027174	0.181010929	0.182005495	0.183011050
6¾	0.183423913	0.184426230	0.185439560	0.186464088
6⅞	0.186820652	0.187841530	0.188873626	0.189917127
7	0.190217391	0.191256831	0.192307692	0.193370166
7⅛	0.193614130	0.194672131	0.195741758	0.196823204
7¼	0.197010870	0.198087432	0.199175824	0.200276243
7⅜	0.200407609	0.201502732	0.202609890	0.203729282
7½	0.203804348	0.204918033	0.206043956	0.207182320
7⅝	0.207201087	0.208333333	0.209478022	0.210635359
7¾	0.210597826	0.211748634	0.212912088	0.214088398
7⅞	0.213994565	0.215163934	0.216346154	0.217541436
8	0.217391304	0.218579235	0.219780220	0.220994475
8⅛	0.220788043	0.221994536	0.223214286	0.224447514
8¼	0.224184783	0.225409836	0.226648352	0.227900552
8⅜	0.227581522	0.228825137	0.230082418	0.231353591
8½	0.230978261	0.232240437	0.233516484	0.234806630
8⅝	0.234375000	0.235655738	0.236950549	0.238259669
8¾	0.237771739	0.239071038	0.240384615	0.241712707
8⅞	0.241168478	0.242486339	0.243818681	0.245165746
9	0.244565217	0.245901639	0.247252747	0.248618785
9⅛	0.247961957	0.249316940	0.250686813	0.252071823
9¼	0.251358696	0.252732240	0.254120879	0.255524862
9⅜	0.254755435	0.256147541	0.257554945	0.258977901
9½	0.258152174	0.259562842	0.260989011	0.262430939
9⅝	0.261548913	0.262978142	0.264423077	0.265883978
9¾	0.264945652	0.266393443	0.267857143	0.269337017
9⅞	0.268342391	0.269808743	0.271291209	0.272790055
10	0.271739130	0.273224044	0.274725275	0.276243094
10⅛	0.275135870	0.276639344	0.278159341	0.279696133
10¼	0.278532609	0.280054645	0.281593407	0.283149171
10⅜	0.281929348	0.283469945	0.285027473	0.286602210
10½	0.285326087	0.286885246	0.288461538	0.290055249
10⅝	0.288722826	0.290300546	0.291895604	0.293508287
10¾	0.292119565	0.293715847	0.295329670	0.296961326
10⅞	0.295516304	0.297131148	0.298763736	0.300414365
11	0.298913043	0.300546448	0.302197802	0.303867403
11⅛	0.302309783	0.303961749	0.305631868	0.307320442
11¼	0.305706522	0.307377049	0.309065934	0.310773481
11⅜	0.309103261	0.310792350	0.312500000	0.314226519
11½	0.312500000	0.314207650	0.315934066	0.317679558
11⅝	0.315896739	0.317622951	0.319368132	0.321132597
11¾	0.319293478	0.321038251	0.322802198	0.324585635
11⅞	0.322690217	0.324453552	0.326236264	0.328038674
12	0.326086957	0.327868852	0.329670330	0.331491713
12⅛	0.329483696	0.331284153	0.333104396	0.334944751
12¼	0.332880435	0.334699454	0.336538462	0.338397790
12⅜	0.336277174	0.338114754	0.339972527	0.341850829
12½	0.339673913	0.341530055	0.343406593	0.345303867
12⅝	0.343070652	0.344945355	0.346840659	0.348756906
12¾	0.346467391	0.348360656	0.350274725	0.352209945
12⅞	0.349864130	0.351775956	0.353708791	0.355662983
13	0.353260870	0.355191257	0.357142857	0.359116022
13⅛	0.356657609	0.358606557	0.360576923	0.362569061
13¼	0.360054348	0.362021858	0.364010989	0.366022099
13⅜	0.363451087	0.365437158	0.367445055	0.369475138
13½	0.366847826	0.368852459	0.370879121	0.372928177
13⅝	0.370244565	0.372267760	0.374313187	0.376381215

TABLE 2—Continued

[Decimal for one day's interest on $1,000 at various rates of interest, payable semiannually or on a semiannual basis, in regular years of 365 days and in years of 366 days (to determine applicable number of days, see table 1.)]

Rate per annum (percent)	Half-year of 184 days	Half-year of 183 days	Half-year of 182 days	Half-year of 181 days
13¾	0.373641304	0.375683060	0.377747253	0.379834254
13⅞	0.377038043	0.379098361	0.381181319	0.383287293
14	0.380434783	0.382513661	0.384615385	0.386740331
14⅛	0.383831522	0.385928962	0.388049451	0.390193370
14¼	0.387228261	0.389344262	0.391483516	0.393646409
14⅜	0.390625000	0.392759563	0.394917582	0.397099448
14½	0.394021739	0.396174863	0.398351648	0.400552486
14⅝	0.397418478	0.399590164	0.401785714	0.404005525
14¾	0.400815217	0.403005464	0.405219780	0.407458564
14⅞	0.404211957	0.406420765	0.408653846	0.410911602
15	0.407608696	0.409836066	0.412087912	0.414364641
15⅛	0.411005435	0.413251366	0.415521978	0.417817680
15¼	0.414402174	0.416666667	0.418956044	0.421270718
15⅜	0.417798913	0.420081967	0.422390110	0.424723757
15½	0.421195652	0.423497268	0.425824176	0.428176796
15⅝	0.424592391	0.426912568	0.429258242	0.431629834
15¾	0.427989130	0.430327869	0.432692308	0.435082873
15⅞	0.431385870	0.433743169	0.436126374	0.438535912
16	0.434782609	0.437158470	0.439560440	0.441988950
16⅛	0.438179348	0.440573770	0.442994505	0.445441989
16¼	0.441576087	0.443989071	0.446428571	0.448895028
16⅜	0.444972826	0.447404372	0.449862637	0.452348066
16½	0.448369565	0.450819672	0.453296703	0.455801105
16⅝	0.451766304	0.454234973	0.456730769	0.459254144
16¾	0.455163043	0.457650273	0.460164835	0.462707182
16⅞	0.458559783	0.461065574	0.463598901	0.466160221
17	0.461956522	0.464480874	0.467032967	0.469613260
17⅛	0.465353261	0.467896175	0.470467033	0.473066298
17¼	0.468750000	0.471311475	0.473901099	0.476519337
17⅜	0.472146739	0.474726776	0.477335165	0.479972376
17½	0.475543478	0.478142077	0.480769231	0.483425414
17⅝	0.478940217	0.481557377	0.484203297	0.486878453
17¾	0.482336957	0.484972678	0.487637363	0.490331492
17⅞	0.485733696	0.488387978	0.491071429	0.493784530
18	0.489130435	0.491803279	0.494505495	0.497237569
18⅛	0.492527174	0.495218579	0.497939560	0.500690608
18¼	0.495923913	0.498633880	0.501373626	0.504143646
18⅜	0.499320652	0.502049180	0.504807692	0.507596685
18½	0.502717391	0.505464481	0.508241758	0.511049724
18⅝	0.506114130	0.508879781	0.511675824	0.514502762
18¾	0.509510870	0.512295082	0.515109890	0.517955801
18⅞	0.512907609	0.515710383	0.518543956	0.521408840
19	0.516304348	0.519125683	0.521978022	0.524861878
19⅛	0.519701087	0.522540984	0.525412088	0.528314917
19¼	0.523097826	0.525956284	0.528846154	0.531767956
19⅜	0.526494565	0.529371585	0.532280220	0.535220994
19½	0.529891304	0.532786885	0.535714286	0.538674033
19⅝	0.533288043	0.536202186	0.539148352	0.542127072
19¾	0.536684783	0.539617486	0.542582418	0.545580110
19⅞	0.540081522	0.543032787	0.546016484	0.549033149
20	0.543478261	0.546448087	0.549450549	0.552486188

3. *Short First Payment Period.* In cases where the first interest payment period for a Treasury non-indexed security covers less than a full half-year period (a ''short coupon''), we multiply the daily interest decimal by the number of days from, but not including, the issue date to, and including, the first interest payment date. This calculation results in the amount of the interest payable per $1,000 par amount. In cases where the par amount of securities is a multiple of $1,000, we multiply the appropriate multiple by the unrounded interest payment amount per $1,000 par amount.

Example

A 2-year note paying 8⅜% interest was issued on July 2, 1990, with the first interest payment on December 31, 1990. The number of days in the full half-year period of June 30 to December 31, 1990, was 184 (See Table 1.). The number of days for which interest actually accrued was 182 (not including July 2, but including December 31). The daily interest decimal, $0.227581522 (See Table 2, line for 8⅜%, under the column for half-year of 184 days.), was multiplied by 182, resulting in a payment of $41.419837004 per $1,000. For $20,000 of these notes, $41.419837004 would be multiplied by 20, resulting in a payment of $828.39674008 ($828.40).

4. *Long First Payment Period.* In cases where the first interest payment period for a bond or note covers more than a full half-year period (a "long coupon"), we multiply the daily interest decimal by the number of days from, but not including, the issue date to, and including, the last day of the fractional period that ends one full half-year before the interest payment date. We add that amount to the regular interest amount for the full half-year ending on the first interest payment date, resulting in the amount of interest payable for $1,000 par amount. In cases where the par amount of securities is a multiple of $1,000, the appropriate multiple should be applied to the unrounded interest payment amount per $1,000 par amount.

Example

A 5-year 2-month note paying 7⅞% interest was issued on December 3, 1990, with the first interest payment due on August 15, 1991. Interest for the regular half-year portion of the payment was computed to be $39.375 per $1,000 par amount. The fractional portion of the payment, from December 3 to February 15, fell in a 184-day half-year (August 15, 1990, to February 15, 1991). Accordingly, the daily interest decimal for 7⅞% was $0.213994565. This decimal, multiplied by 74 (the number of days from but not including December 3, 1990, to and including February 15), resulted in interest for the fractional portion of $15.835597810. When added to $39.375 (the normal interest payment portion ending on August 15, 1991), this produced a first interest payment of $55.210597810, or $55.21 per $1,000 par amount. For $7,000 par amount of these notes, $55.210597810 would be multiplied by 7, resulting in an interest payment of $386.474184670 ($386.47).

B. Treasury Inflation-Protected Securities

1. *Indexing Process.* We pay interest on marketable Treasury inflation-protected securities on a semiannual basis. We issue inflation-protected securities with a stated rate of interest that remains constant until maturity. Interest payments are based on the security's inflation-adjusted principal at the time we pay interest. We make this adjustment by multiplying the par amount of the security by the applicable Index Ratio.

2. *Index Ratio.* The numerator of the Index Ratio, the Ref CPI_{Date}, is the index number applicable for a specific day. The denominator of the Index Ratio is the Ref CPI applicable for the original issue date. However, when the dated date is different from the original issue date, the denominator is the Ref CPI applicable for the dated date. The formula for calculating the Index Ratio is:

$$\text{Index Ratio}_{\text{Date}} = \frac{\text{Ref CPI}_{\text{Date}}}{\text{Ref CPI}_{\text{Issue Date}}}$$

Where Date = valuation date

3. *Reference CPI.* The Ref CPI for the first day of any calendar month is the CPI for the third preceding calendar month. For example, the Ref CPI applicable to April 1 in any year is the CPI for January, which is reported in February. We determine the Ref CPI for any other day of a month by a linear interpolation between the Ref CPI applicable to the first day of the month in which the day falls (in the example, January) and the Ref CPI applicable to the first day of the next month (in the example, February). For interpolation purposes, we truncate calculations with regard to the Ref CPI and the Index Ratio for a specific date to six decimal places, and round to five decimal places.

Therefore the Ref CPI and the Index Ratio for a particular date will be expressed to five decimal places.

(i) The formula for the Ref CPI for a specific date is:

$$\text{Ref CPI}_{\text{Date}} = \text{Ref CPI}_{\text{M}} + \frac{t-1}{D}\left[\text{Ref CPI}_{\text{M+1}} - \text{Ref CPI}_{\text{M}}\right]$$

Where Date = valuation date

D = the number of days in the month in which Date falls

t = the calendar day corresponding to Date

CPI_M = CPI reported for the calendar month M by the Bureau of Labor Statistics

Ref CPI_M = Ref CPI for the first day of the calendar month in which Date falls, e.g., Ref CPI_{April1} is the $CPI_{January}$

Ref CPI_{M+1} = Ref CPI for the first day of the calendar month immediately following Date

(ii) For example, the Ref CPI for April 15, 1996 is calculated as follows:

$$\mathrm{Ref\,CPI}_{\mathrm{April\ 15,\ 1996}} = \mathrm{Ref\,CPI}_{\mathrm{April\ 1,\ 1996}} + \frac{14}{30}\left[\mathrm{Ref\,CPI}_{\mathrm{May\ 1,\ 1996}} - \mathrm{Ref\,CPI}_{\mathrm{April\ 1,\ 1996}}\right]$$

where D = 30, t = 15

Ref $\mathrm{CPI}_{\mathrm{April\ 1,\ 1996}}$ = 154.40, the non-seasonally adjusted CPI-U for January 1996.

Ref $\mathrm{CPI}_{\mathrm{May\ 1,\ 1996}}$ = 154.90, the non-seasonally adjusted CPI-U for February 1996.

(iii) Putting these values in the equation in paragraph (ii) above:

$$\mathrm{Ref\,CPI}_{\mathrm{April\ 15,\ 1996}} = 154.40 + \frac{14}{30}\left[154.90 - 154.40\right]$$

$$\mathrm{Ref\,CPI}_{\mathrm{April\ 15,\ 1996}} = 154.633333333$$

This value truncated to six decimals is 154.633333; rounded to five decimals it is 154.63333.

(iv) To calculate the Index Ratio for April 16, 1996, for an inflation-protected security issued on April 15, 1996, the Ref $\mathrm{CPI}_{\mathrm{April\ 16,\ 1996}}$ must first be calculated. Using the same values in the equation above except that t = 16, the Ref $\mathrm{CPI}_{\mathrm{April\ 16,\ 1996}}$ is 154.65000.

The Index Ratio for April 16, 1996 is:

Index $\mathrm{Ratio}_{\mathrm{April\ 16,\ 1996}}$ = 154.65000/154.63333 = 1.000107803.

This value truncated to six decimals is 1.000107; rounded to five decimals it is 1.00011.

4. *Index Contingencies.*

(i) If a previously reported CPI is revised, we will continue to use the previously reported (unrevised) CPI in calculating the principal value and interest payments.

If the CPI is rebased to a different year, we will continue to use the CPI based on the base reference period in effect when the security was first issued, as long as that CPI continues to be published.

(ii) We will replace the CPI with an appropriate alternative index if, while an inflation-protected security is outstanding, the applicable CPI is:

• Discontinued,

• In the judgment of the Secretary, fundamentally altered in a manner materially adverse to the interests of an investor in the security, or

• In the judgment of the Secretary, altered by legislation or Executive Order in a manner materially adverse to the interests of an investor in the security.

(iii) If we decide to substitute an alternative index we will consult with the Bureau of Labor Statistics or any successor agency. We will then notify the public of the substitute index and how we will apply it. Determinations of the Secretary in this regard will be final.

(iv) If the CPI for a particular month is not reported by the last day of the following month, we will announce an index number based on the last available twelve-month change in the CPI. We will base our calculations of our payment obligations that rely on that month's CPI on the index number we announce.

(a) For example, if the CPI for month M is not reported timely, the formula for calculating the index number to be used is:

$$\mathrm{CPI}_{\mathrm{M}} = \mathrm{CPI}_{\mathrm{M\text{-}1}} \times \left[\frac{\mathrm{CPI}_{\mathrm{M\text{-}1}}}{\mathrm{CPI}_{\mathrm{M\text{-}13}}}\right]^{1/12}$$

(b) Generalizing for the last reported CPI issued N months prior to month M:

$$\mathrm{CPI}_{\mathrm{M}} = \mathrm{CPI}_{\mathrm{M\text{-}N}} \times \left[\frac{\mathrm{CPI}_{\mathrm{M\text{-}N}}}{\mathrm{CPI}_{\mathrm{M\text{-}N\text{-}12}}}\right]^{N/12}$$

(c) If it is necessary to use these formulas to calculate an index number, we will use that number for all subsequent calculations that rely on the month's index number. We will not replace it with the actual CPI when it is reported, except for use in the above formulas. If it becomes necessary to use the above formulas to derive an index number, we will use the last CPI that has been reported to calculate CPI numbers for months for which the CPI has not been reported timely.

5. *Computation of Interest for a Regular Half-Year Payment Period.* Interest on marketable Treasury inflation-protected securities is payable on a semiannual basis. The regular interest payment period is a full half-year or six calendar months. Examples of half-year periods are January 15 to July 15, and April 15 to October 15. An interest payment will be a fixed percentage of the value of the inflation-adjusted principal, in current dollars, for the date on which it is paid. We will calculate interest payments by multiplying one-half of the specified annual interest rate for the inflation-protected securities by the

inflation-adjusted principal for the interest payment date.

Specifically, we compute a semiannual interest payment on the basis of one-half of one year's interest regardless of the actual number of days in the half-year.

Example

A 10-year inflation-protected note paying 3⅞% interest was issued on January 15, 1999, with the first interest payment on July 15, 1999. The Ref CPI on January 15, 1999 (Ref $CPI_{IssueDate}$) was 164, and the Ref CPI on July 15, 1999 (Ref CPI_{Date}) was 166.2. For a par amount of $100,000, the inflation-adjusted principal on July 15, 1999, was (166.2/164) × $100,000, or $101,341. This amount was multiplied by .03875/2, or .019375, resulting in a payment of $1,963.48.

C. Treasury Floating Rate Notes

1. *Indexing and Interest Payment Process.* We issue floating rate notes with a daily interest accrual feature. This means that the interest rate ''floats'' based on changes in the representative index rate. We pay interest on a quarterly basis. The index rate is the High Rate of the 13-week Treasury bill auction announced on the auction results that has been converted into a simple-interest money market yield computed on an actual/360 basis and rounded to nine decimal places. Interest payments are based on the floating rate note's variable interest rate from, and including, the dated date or last interest payment date to, but excluding, the next interest payment or maturity date. We make quarterly interest payments by accruing the daily interest amounts and adding those amounts together for the interest payment period.

2. *Interest Rate.* The interest rate on floating rate notes will be the spread plus the index rate (as it may be adjusted on the calendar day following each auction of 13-week bills).

3. *Interest Accrual.* In general, accrued interest for a particular calendar day in an accrual period is calculated by using the index rate from the most recent auction of 13-week bills that took place before the accrual day, plus the spread determined at the time of a new floating rate note auction, divided by 360, subject to a zero-percent minimum daily interest accrual rate. However, the rate determined in a 13-week bill auction that takes place in the two-business-day period prior to a settlement date or interest payment date will be excluded from the calculation of accrued interest for purposes of the settlement amount or interest payment. Any changes in the index rate that would otherwise have occurred during this two-business-day period will occur on the first calendar day following the end of the period.

4. *Index Contingencies.*

(i) If Treasury were to discontinue auctions of 13-week bills, the Secretary has authority to determine and announce a new index for outstanding floating rate notes.

(ii) If Treasury were to not conduct a 13-week bill auction in a particular week, then the interest rate in effect for the notes at the time of the last 13-week bill auction results announcement will remain in effect until such time, if any, as the results of a 13-week Treasury auction are again announced by Treasury. Treasury reserves the right to change the index rate for any newly issued floating rate note.

D. Accrued Interest

1. You will have to pay accrued interest on a Treasury bond or note when interest accrues prior to the issue date of the security. Because you receive a full interest payment despite having held the security for only a portion of the interest payment period, you must compensate us through the payment of accrued interest at settlement.

2. For a Treasury non-indexed security, if accrued interest covers a fractional portion of a full half-year period, the number of days in the full half-year period and the stated interest rate will determine the daily interest decimal to use in computing the accrued interest. We multiply the decimal by the number of days for which interest has accrued.

3. If a reopened bond or note has a long first interest payment period (a ''long coupon''), and the dated date for the reopened issue is less than six full months before the first interest payment, the accrued interest will fall into two separate half-year periods. A separate daily interest decimal must be multiplied by the respective number of days in each half-year period during which interest has accrued.

4. We round all accrued interest computations to five decimal places for a $1,000 par amount, using normal rounding procedures. We calculate accrued interest for a par amount of securities greater than $1,000 by applying the appropriate multiple to accrued interest payable for a $1,000 par amount, rounded to five decimal places. We calculate accrued interest for a par amount of securities less than $1,000 by applying the appropriate fraction to accrued interest payable for a $1,000 par amount, rounded to five decimal places.

5. For an inflation-protected security, we calculate accrued interest as shown in section III, paragraphs A and B of this appendix.

Examples: (1) *Treasury Non-indexed Securities—(i) Involving One Half-Year:* A note paying interest at a rate of 6¾%, originally issued on May 15, 2000, as a 5-year note with a first interest payment date of November 15, 2000, was reopened as a 4-year 9-month note on August 15, 2000. Interest had accrued for

92 days, from May 15 to August 15. The regular interest period from May 15 to November 15, 2000, covered 184 days. Accordingly, the daily interest decimal, $0.183423913, multiplied by 92, resulted in accrued interest payable of $16.874999996, or $16.87500, for each $1,000 note purchased. If the notes have a par amount of $150,000, then 150 is multiplied by $16.87500, resulting in an amount payable of $2,531.25.

(2) *Involving Two Half-Years:*

A 10¾% bond, originally issued on July 2, 1985, as a 20-year 1-month bond, with a first interest payment date of February 15, 1986, was reopened as a 19-year 10-month bond on November 4, 1985. Interest had accrued for 44 days, from July 2 to August 15, 1985, during a 181-day half-year (February 15 to August 15); and for 81 days, from August 15 to November 4, during a 184-day half-year (August 15, 1985, to February 15, 1986). Accordingly, $0.296961326 was multiplied by 44, and $0.292119565 was multiplied by 81, resulting in products of $13.066298344 and $23.661684765 which, added together, resulted in accrued interest payable of $36.727983109, or $36.72798, for each $1,000 bond purchased. If the bonds have a par amount of $11,000, then 11 is multiplied by $36.72798, resulting in an amount payable of $404.00778 ($404.01).

6. For a floating rate note, if accrued interest covers a portion of a full quarterly interest payment period, we calculate accrued interest as shown in section IV, paragraphs C and D of this appendix.

II. Formulas for Conversion of Non-Indexed Security Yields to Equivalent Prices

Definitions

P = price per 100 (dollars), rounded to six places, using normal rounding procedures.

C = the regular annual interest per $100, payable semiannually, e.g., 6.125 (the decimal equivalent of a 6⅛% interest rate).

i = nominal annual rate of return or yield to maturity, based on semiannual interest payments and expressed in decimals, e.g., .0719.

n = number of full semiannual periods from the issue date to maturity, except that, if the issue date is a coupon frequency date, n will be one less than the number of full semiannual periods remaining to maturity. Coupon frequency dates are the two semiannual dates based on the maturity date of each note or bond issue. For example, a security maturing on November 15, 2015, would have coupon frequency dates of May 15 and November 15.

r = (1) number of days from the issue date to the first interest payment (regular or short first payment period), or (2) number of days in fractional portion (or ''initial short period'') of long first payment period.

s = (1) number of days in the full semiannual period ending on the first interest payment date (regular or short first payment period), or (2) number of days in the full semiannual period in which the fractional portion of a long first payment period falls, ending at the onset of the regular portion of the first interest payment.

$v^n = 1 / [1 + (i/2)]^n$ = present value of 1 due at the end of n periods.

$a_{\overline{n}|} = (1 - v^n) / (i/2) = v + v^2 + v^3 + \ldots + v^n$ = present value of 1 per period for n periods

Special Case: If i = 0, then $a_{\overline{n}|} = n$. Furthermore, when i = 0, $a_{\overline{n}|}$ cannot be calculated using the formula: $(1 - v^n)/(i/2)$. In the special case where i = 0, $a_{\overline{n}|}$ must be calculated as the summation of the individual present values (*i.e.*, $v + v^2 + v^3 + \ldots + v^n$). Using the summation method will always confirm that $a_{\overline{n}|} = n$ when i = 0.

A = accrued interest.

A. *For non-indexed securities with a regular first interest payment period:*

Formula:

$P[1 + (r/s)(i/2)] = (C/2)(r/s) + (C/2)a_{\overline{n}|} + 100v^n$.

Example:

For an 8¾% 30-year bond issued May 15, 1990, due May 15, 2020, with interest payments on November 15 and May 15, solve for the price per 100 (P) at a yield of 8.84%.

Definitions:G12752

C = 8.75.

i = .0884.

r = 184 (May 15 to November 15, 1990).

s = 184 (May 15 to November 15, 1990).

n = 59 (There are 60 full semiannual periods, but n is reduced by 1 because the issue date is a coupon frequency date.)

$v^n = 1 / [(1 + .0884 / 2)]^{59}$, or .0779403508.

$a_{\overline{n}|} = (1 - .0779403508) / .0442$, or 20.8610780353.

Resolution:

$P[1 + (r/s)(i/2)] = (C/2)(r/s) + (C/2)a_{\overline{n}|} + 100v^n$ or

$P[1 + (184/184)(.0884/2)] = (8.75/2)(184/184) + (8.75/2)(20.8610780353) + 100(.0779403508)$.

(1) $P[1 + .0442] = 4.375 + 91.2672164044 + 7.7940350840$.

(2) $P[1.0442] = 103.4362514884$.

(3) $P = 103.4362514884 / 1.0442$.

(4) P = 99.057893.

B. *For non-indexed securities with a short first interest payment period:*

Formula:

$P[1 + (r/s)(i/2)] = (C/2)(r/s) + (C/2)a_{\overline{n}|} + 100v^n$.

Example:

For an 8½% 2-year note issued April 2, 1990, due March 31, 1992, with interest payments on September 30 and March 31, solve for the price per 100 (P) at a yield of 8.59%.

Definitions:

$C = 8.50.$
$i = .0859.$
$n = 3.$
$r = 181$ (April 2 to September 30, 1990).
$s = 183$ (March 31 to September 30, 1990).
$v^n = 1 / [(1 + .0859 / 2)]^3$, or .8814740565.
$a_{\overline{n}|} = (1 - .8814740565) / .04295$, or 2.7596261590.

Resolution:

$P[1 + (r/s)(i/2)] = (C/2)(r/s) + (C/2)a_{\overline{n}|} + 100v^n$ or
$P[1 + (181/183)(.0859/2)] = (8.50/2)(181/183) + (8.50/2)(2.7596261590) + 100(.8814740565).$
(1) $P[1 + .042480601] = 4.2035519126 + 11.7284111757 + 88.14740565.$
(2) $P[1.042480601] = 104.0793687354.$
(3) $P = 104.0793687354 / 1.042480601.$
(4) $P = 99.838183.$

C. *For non-indexed securities with a long first interest payment period:*

Formula:

$P[1 + (r/s)(i/2)] = [(C/2)(r/s)]v + (C/2)a_{\overline{n}|} + 100v^n.$

Example:

For an 8½% 5-year 2-month note issued March 1, 1990, due May 15, 1995, with interest payments on November 15 and May 15 (first payment on November 15, 1990), solve for the price per 100 (P) at a yield of 8.53%.

Definitions:

$C = 8.50.$
$i = .0853.$
$n = 10.$
$r = 75$ (March 1 to May 15, 1990, which is the fractional portion of the first interest payment).
$s = 181$ (November 15, 1989, to May 15, 1990).
$v = 1 / (1 + .0853/2)$, or .9590946147.
$v^n = 1 / (1 + .0853/2)^{10}$, or .658589
$a_{\overline{n}|} = (1-.658589)/.04265$, or 8.0049454082.

Resolution:

$P[1 + (r/s)(i/2)] = [(C/2)(r/s)]v + (C/2)a_{\overline{n}|} + 100v^n$ or
$P[1 + (75/181)(.0853/2)] = [(8.50/2)(75/181)].9590946147 + (8.50/2)(8.0049454082) + 100(.6585890783).$
(1) $P[1 + .017672652] = 1.6890133062 + 34.0210179850 + 65.8589078339.$
(2) $P[1.017672652] = 101.5689391251.$
(3) $P = 101.5689391251 / 1.017672652.$
(4) $P = 99.805118.$

D. (1) *For non-indexed securities reopened during a regular interest period where the purchase price includes predetermined accrued interest.*

(2) *For new non-indexed securities accruing interest from the coupon frequency date immediately preceding the issue date, with the interest rate established in the auction being used to determine the accrued interest payable on the issue date.*

Formula:

$(P + A)[1 + (r/s)(i/2)] = C/2 + (C/2)a_{\overline{n}|} + 100v^n.$
Where:

$A = [(s-r)/s](C/2).$

Example:

For a 9½% 10-year note with interest accruing from November 15, 1985, issued November 29, 1985, due November 15, 1995, and interest payments on May 15 and November 15, solve for the price per 100 (P) at a yield of 9.54%. Accrued interest is from November 15 to November 29 (14 days).

Definitions:

$C = 9.50.$
$i = .0954.$
$n = 19.$
$r = 167$ (November 29, 1985, to May 15, 1986).
$s = 181$ (November 15, 1985, to May 15, 1986).
$v^n = 1 / [(1 + .0954/2)]^{19}$, or .4125703996.
$a_{\overline{n}|} = (1 - .4125703996) / .0477$, or 12.3150859630.
$A = [(181 - 167) / 181](9.50/2)$, or .367403.

Resolution:

$(P + A)[1 + (r/s)(i/2)] = C/2 + (C/2)a_{\overline{n}|} + 100v^n$ or
$(P + .367403)[1 + (167/181)(.0954/2)] = (9.50/2) + (9.50/2)(12.3150859630) + 100(.4125703996).$
(1) $(P + .367403)[1 + .044010497] = 4.75 + 58.4966583243 + 41.25703996.$
(2) $(P + .367403)[1.044010497] = 104.5036982843.$
(3) $(P + .367403) = 104.5036982843 / 1.044010497.$
(4) $(P + .367403) = 100.098321.$
(5) $P = 100.098321 - .367403.$
(6) $P = 99.730918.$

E. *For non-indexed securities reopened during the regular portion of a long first payment period:*

Formula:

$(P + A)[1 + (r/s)(i/2)] = (r'/s'')(C/2) + C\ 2 + (C/2)a_{\overline{n}|} + 100v^n.$

Where:

$A = AI' + AI,$
$AI' = (r'/s'')(C/2),$
$AI = [(s-r) / s](C/2)$, and
r = number of days from the reopening date to the first interest payment date,
s = number of days in the semiannual period for the regular portion of the first interest payment period,
r′ = number of days in the fractional portion (or ''initial short period'') of the first interest payment period,
s″ = number of days in the semiannual period ending with the commencement date of the regular portion of the first interest payment period.

Example:

A 10¾% 19-year 9-month bond due August 15, 2005, is issued on July 2, 1985, and reopened on November 4, 1985, with interest payments on February 15 and August 15 (first payment on February 15, 1986), solve for the price per 100 (P) at a yield of 10.47%. Accrued interest is calculated from July 2 to November 4.

Definitions:

$C = 10.75.$
$i = .1047.$
$n = 39.$

r = 103 (November 4, 1985, to February 15, 1986).
s = 184 (August 15, 1985, to February 15, 1986).
r′ = 44 (July 2 to August 15, 1985).
s″ = 181 (February 15 to August 15, 1985).
$v^n = 1 / [(1 + .1047 / 2)]^{39}$, or .1366947986.
$a_n\rceil = (1 - .1366947986) / .05235$, or 16.4910258142.
AI′ = (44 / 181)(10.75 / 2), or 1.306630.
AI = [(184 − 103) / 184](10.75 / 2), or 2.366168.
A = AI′ + AI, or 3.672798.

Resolution:

$(P + A)[1 + (r/s)(i/2)] = (r'/s'')(C/2) + C/2 + (C/2)a_n\rceil + 100v^n$ or
$(P + 3.672798)[1 + (103/184)(.1047/2)] = (44/181)(10.75/2) + 10.75/2 + (10.75/2)(16.4910258142) + 100(.1366947986)$.
(1) $(P + 3.672798)[1 + .02930462] = 1.3066298343 + 5.375 + 88.6392637512 + 13.6694798628$.
(2) $(P + 3.672798)[1.02930462] = 108.9903734482$.
(3) $(P + 3.672798) = 108.9903734482 / 1.02930462$.
(4) $(P + 3.672798) = 105.887384$.
(5) $P = 105.887384 - 3.672798$.
(6) $P = 102.214586$.

F. *For non-indexed securities reopened during a short first payment period:*

Formula:

$(P + A)[1 + (r/s)(i/2)] = (r'/s)(C/2) + (C/2)a_n\rceil + 100v^n$.

Where:

A = [(r′ − r)/s](C/2) and
r′ = number of days from the original issue date to the first interest payment date.

Example:

For a 10½% 8-year note due May 15, 1991, originally issued on May 16, 1983, and reopened on August 15, 1983, with interest payments on November 15 and May 15 (first payment on November 15, 1983), solve for the price per 100 (P) at a yield of 10.53%. Accrued interest is calculated from May 16 to August 15.

Definitions:

C = 10.50.
i = .1053.
n = 15.
r = 92 (August 15, 1983, to November 15, 1983).
s = 184 (May 15, 1983, to November 15, 1983).
r′ = 183 (May 16, 1983, to November 15, 1983).
$v^n = 1/[(1 + .1053/2)]^{15}$, or .4631696332.
$a_n\rceil = (1 - .4631696332) / .05265$, or 10.1962082956.
A = [(183 − 92) / 184](10.50 / 2), or 2.596467.

Resolution:

$(P + A)[1 + (r/s)(i/2)] = (r'/s)(C/2) + (C/2)a_n\rceil + 100v^n$ or
$(P + 2.596467)[1 + (92/184)(.1053/2)] = (183/184)(10.50/2) + (10.50/2)(10.1962082956) + 100(.4631696332)$.
(1) $(P + 2.596467)[1 + .026325] = 5.2214673913 + 53.5300935520 + 46.31696332$.
(2) $(P + 2.596467)[1.026325] = 105.0685242633$.
(3) $(P + 2.596467) = 105.0685242633 / 1.026325$.
(4) $(P + 2.596467) = 102.373541$.
(5) $P = 102.373541 - 2.596467$.
(6) $P = 99.777074$.

G. *For non-indexed securities reopened during the fractional portion (initial short period) of a long first payment period:*

Formula:

$(P + A)[1 + (r/s)(i/2)] = [(r'/s)(C/2)]v + (C/2)a_n\rceil + 100v^n$.

Where:

A = [(r′ − r)/s](C/2), and
r = number of days from the reopening date to the end of the short period.
r′ = number of days in the short period.
s = number of days in the semiannual period ending with the end of the short period.

Example:

For a 9¾% 6-year 2-month note due December 15, 1994, originally issued on October 15, 1988, and reopened on November 15, 1988, with interest payments on June 15 and December 15 (first payment on June 15, 1989), solve for the price per 100 (P) at a yield of 9.79%. Accrued interest is calculated from October 15 to November 15.

Definitions:

C = 9.75.
i = .0979.
n = 12.
r = 30 (November 15, 1988, to December 15, 1988).
s = 183 (June 15, 1988, to December 15, 1988).
r′ = 61 (October 15, 1988, to December 15, 1988).
v = 1 / (1 + .0979/2), or .9533342867.
$v^n = [1 / (1 + .0979/2)]^{12}$, or .5635631040.
$a_n\rceil = (1 - .5635631040)/.04895$, or 8.9159733613.
A = [(61 − 30)/183](9.75/2), or .825820.

Resolution:

$(P + A)[1 + (r/s)(i/2)] = [(r'/s)(C/2)]v + (C/2)a_n\rceil + 100v^n$ or
$(P + .825820)[1 + (30/183)(.0979/2)] = [(61/183)(9.75/2)](.9533342867) + (9.75/2)(8.9159733613) + 100(.5635631040)$.
(1) $(P + .825820)[1 + .00802459] = 1.549168216 + 43.4653701362 + 56.35631040$.
(2) $(P + .825820)[1.00802459] = 101.3708487520$.
(3) $(P + .825820) = 101.3708487520 / 1.00802459$.
(4) $(P + .825820) = 100.563865$.
(5) $P = 100.563865 - .825820$.
(6) $P = 99.738045$.

III. Formulas for Conversion of Inflation-Indexed Security Yields to Equivalent Prices

Definitions

P = unadjusted or real price per 100 (dollars).
P_{adj} = inflation adjusted price; P × Index $Ratio_{Date}$.
A = unadjusted accrued interest per $100 original principal.
A_{adj} = inflation adjusted accrued interest; A × Index $Ratio_{Date}$.
SA = settlement amount including accrued interest in current dollars per $100 original principal; $P_{adj} + A_{adj}$.

r = days from settlement date to next coupon date.

s = days in current semiannual period.

i = real yield, expressed in decimals (e.g., 0.0325).

C = real annual coupon, payable semiannually, in terms of real dollars paid on $100 initial, or real, principal of the security.

n = number of full semiannual periods from issue date to maturity date, except that, if the issue date is a coupon frequency date, n will be one less than the number of full semiannual periods remaining until maturity. Coupon frequency dates are the two semiannual dates based on the maturity date of each note or bond issue. For example, a security maturing on July 15, 2026 would have coupon frequency dates of January 15 and July 15.

$v^n = 1/(1 + i/2)^n$ = present value of 1 due at the end of n periods.

$a_{\overline{n}|} = (1 - v^n) / (i/2) = v + v^2 + v^3 + \cdots + v^n$ = present value of 1 per period for n periods.

Special Case: If i = 0, then $a_{\overline{n}|} = n$. Furthermore, when i = 0, $a_{\overline{n}|}$ cannot be calculated using the formula: $(1 - v^n)/(i/2)$. In the special case where i = 0, $a_{\overline{n}|}$ must be calculated as the summation of the individual present values (*i.e.*, $v + v^2 + v^3 + \cdots + v^n$). Using the summation method will always confirm that $a_{\overline{n}|} = n$ when i = 0.

Date = valuation date.

D = the number of days in the month in which Date falls.

t = calendar day corresponding to Date.

CPI = Consumer Price Index number.

CPI_M = CPI reported for the calendar month M by the Bureau of Labor Statistics.

Ref CPI_M = reference CPI for the first day of the calendar month in which Date falls (also equal to the CPI for the third preceding calendar month), e.g., Ref $CPI_{April\ 1}$ is the $CPI_{January}$.

Ref CPI_{M+1} = reference CPI for the first day of the calendar month immediately following Date.

Ref CPI_{Date} = Ref $CPI_M - [(t - 1)/D]$[Ref CPI_{M+1} – Ref CPI_M].

Index $Ratio_{Date}$ = Ref CPI_{Date} / Ref $CPI_{IssueDate}$.

NOTE: When the Issue Date is different from the Dated Date, the denominator is the Ref $CPI_{DatedDate}$.

A. *For inflation-protected securities with a regular first interest payment period:*

Formulas:

$$P = \frac{(C/2) + (C/2)a_{\overline{n}|} + 100v^n}{1 + (r/s)(i/2)} - [(s - r)/s](C/2)$$

$P_{adj} = P \times$ Index $Ratio_{Date}$.

$A = [(s - r)/s] \times (C/2)$.

$A_{adj} = A \times$ Index $Ratio_{Date}$.

$SA = P_{adj} + A_{adj}$

Index $Ratio_{Date}$ = Ref CPI_{Date}/Ref $CPI_{IssueDate}$.

Example:

We issued a 10-year inflation-protected note on January 15, 1999. The note was issued at a discount to yield of 3.898% (real). The note bears a 3⅞% real coupon, payable on July 15 and January 15 of each year. The base CPI index applicable to this note is 164. (We normally derive this number using the interpolative process described in appendix B, section I, paragraph B.)

Definitions:

C = 3.875.

i = 0.03898.

n = 19 (There are 20 full semiannual periods but n is reduced by 1 because the issue date is a coupon frequency date.).

r = 181 (January 15, 1999 to July 15, 1999).

s = 181 (January 15, 1999 to July 15, 1999).

Ref CPI_{Date} = 164.

Ref $CPI_{IssueDate}$ = 164.

Resolution:

Index $Ratio_{Date}$ = Ref CPI_{Date} / Ref $CPI_{IssueDate}$ = 164/164 = 1.

$A = [(181 - 181)/181] \times 3.875/2 = 0$.

$A_{adj} = 0 \times 1 = 0$.

$v^n = 1/(1 + i/2)^n = 1/(1 + .03898/2)^{19} = 0.692984572$.

$a_{\overline{n}|} = (1 - v^n)/(i/2) = (1 - 0.692984572) / (.03898/2) = 15.752459107$.

Formula:

$$P = \frac{(C/2) + (C/2)a_{\overline{n}|} + 100v^n}{1 + (r/s)(i/2)} - [(s - r)/s](C/2)$$

$$P = \frac{(3.875/2) + (3.875/2)(15.752459107) + 100(0.692984572)}{1 + (181/181)(0.03898/2)} - [(181 - 181)/181](3.875/2)$$

$$P = \frac{1.9375 + 30.52038952 + 69.29845720}{1.01949000} - 0$$

$$P = \frac{101.75634672}{1.01949000}$$

P = 99.811030.

$P_{adj} = P \times$ Index $Ratio_{Date}$.

$P_{adj} = 99.811030 \times 1 = 99.811030$.

$SA = P_{adj} \times A_{adj}$.

SA = 99.811030 + 0 = 99.811030.

NOTE: For the real price (P), we have rounded to six places. These amounts are based on 100 par value.

B. (1) *For inflation-protected securities reopened during a regular interest period where the purchase price includes predetermined accrued interest.*

(2) *For new inflation-protected securities accruing interest from the coupon frequency date immediately preceding the issue date, with the interest rate established in the auction being used to determine the accrued interest payable on the issue date.*

Bidding: The dollar amount of each bid is in terms of the par amount. For example, if the Ref CPI applicable to the issue date of the note is 120, and the reference CPI applicable to the reopening issue date is 132, a bid of \$10,000 will in effect be a bid of \$10,000 × (132/120), or \$11,000.

Formulas:

$$P = \frac{(C/2) + (C/2)a_{n}\rceil + 100v^{n}}{1 + (r/s)(i/2)} - [(s - r)/s](C/2)$$

$P_{adj} = P \times \text{Index Ratio}_{Date}$.
$A = [(s - r)/s] \times (C/2)$.
$A_{adj} = A \times \text{Index Ratio}_{Date}$.
$SA = P_{adj} + A_{adj}$.
$\text{Index Ratio}_{Date} = \text{Ref CPI}_{Date}/\text{Ref CPI}_{IssueDate}$.

Example:

We issued a 3⅝% 10-year inflation-protected note on January 15, 1998, with interest payments on July 15 and January 15. For a reopening on October 15, 1998, with inflation compensation accruing from January 15, 1998 to October 15, 1998, and accrued interest accruing from July 15, 1998 to October 15, 1998 (92 days), solve for the price per 100 (P) at a real yield, as determined in the reopening auction, of 3.65%. The base index applicable to the issue date of this note is 161.55484 and the reference CPI applicable to October 15, 1998, is 163.29032.

Definitions:

$C = 3.625$.
$i = 0.0365$.
$n = 18$.
$r = 92$ (October 15, 1998 to January 15, 1999).
$s = 184$ (July 15, 1998 to January 15, 1999).
$\text{Ref CPI}_{Date} = 163.29032$.
$\text{Ref CPI}_{IssueDate} = 161.55484$.

Resolution:

$\text{Index Ratio}_{Date} = \text{Ref CPI}_{Date}/\text{Ref CPI}_{IssueDate} = 163.29032/161.55484 = 1.01074$.
$v^{n} = 1/(1 + i/2)^{n} = 1/(1 + .0365/2)^{18} = 0.722138438$.
$a_{n}\rceil = (1 - v^{n})/(i/2) = (1 - 0.722138438)/(.0365/2) = 15.225291068$.

Formula:

$$P = \frac{(C/2) + (C/2)a_{n}\rceil + 100v^{n}}{1 + (r/s)(i/2)} - [(s - r)/s](C/2)$$

$$P = \frac{(3.625/2) + (3.625/2)(15.225291068) + 100(0.722138438)}{1 + (92/184)(0.0365/2)} - [(184 - 92)/184](3.625/2)$$

$$P = \frac{1.8125 + 27.59584006 + 72.21384380}{1.009125} - (92/184)(1.8125)$$

$$P = \frac{101.62218386}{1.009125} - 0.906250$$

$P = 100.703267 - 0.906250$.
$P = 99.797017$.
$P_{adj} = P \times \text{Index Ratio}_{Date}$.
$P_{adj} = 99.797017 \times 1.01074 = 100.86883696$.
$P_{adj} = 100.868837$.
$A = [(184 - 92)/184] \times 3.625/2 = 0.906250$.
$A_{adj} = A \times \text{Index Ratio}_{Date}$.
$A_{adj} = 0.906250 \times 1.01074 = 0.91598313$.
$A_{adj} = 0.915983$.
$SA = P_{adj} + A_{adj} = 100.868837 + 0.915983$.
$SA = 101.784820$.

NOTE: For the real price (P), and the inflation-adjusted price (P_{adj}), we have rounded to six places. For accrued interest (A) and the adjusted accrued interest (A_{adj}), we have rounded to six places. These amounts are based on 100 par value.

IV. Formulas for Conversion of Floating Rate Note Discount Margins to Equivalent Prices

Definitions for Newly Issued Floating Rate Notes

P = the price per \$100 par value.
T_0 = the issue date.
N = the total number of quarterly interest payments.
i and *k* = indexes that identify the sequence of interest payment dates.
T_i = the i^{th} quarterly interest payment date.
$T_i - T_{i-1}$ = the number of days between the interest payment date T_i and the preceding interest payment date.
T_N = the maturity date.
r = the index rate applicable to the issue date.
s = the spread.
m = the discount margin.

A. For newly issued floating rate notes issued at par:

Formula:

$$P=\sum_{i=1}^{N}\left(\frac{100\times\frac{1}{360}(T_i-T_{i-1})\times\max(r+s,0)}{\prod_{k=1}^{i}\left(1+\frac{1}{360}(T_k-T_{k-1})\times(r+m)\right)}\right)+\frac{100}{\prod_{k=1}^{N}\left(1+\frac{1}{360}(T_k-T_{k-1})\times(r+m)\right)}$$

Example:

The purpose of this example is to demonstrate how a floating rate note price is derived at the time of original issuance. Additionally, this example depicts the association of the July 31, 2012 issue date and the two-business-day lockout period. For a new two-year floating rate note auctioned on July 25, 2012, and issued on July 31, 2012, with a maturity date of July 31, 2014, and an interest accrual rate on the issue date of 0.215022819% (index rate of 0.095022819% plus a spread of 0.120%), solve for the price per 100 (P). This interest accrual rate is used for each daily interest accrual over the life of the security for the purposes of this example. In a new issuance (not a reopening) of a floating rate note, the discount margin determined at auction will be equal to the spread.

Definitions:

T_0 = July 31, 2012.
N = 8.
T_N = July 31, 2014.
r = 0.095022819%.
s = 0.120%.
m = 0.120%.

As of the issue date the latest 13-week bill, auctioned at least two days prior, has the following information:

TABLE 1—13-WEEK BILL AUCTION DATA

Auction date	Issue date	Maturity date	Auction clearing price	Auction high rate	Index rate
7/23/2012	7/26/2012	10/25/2012	99.975986	0.095%	0.095022819%

The rationale for using a 13-week bill auction that has occurred at least two days prior to the issue date is due to the two-business-day lockout period. This lockout period applies only to the issue date and interest payment dates, thus any 13-week bill auction that occurs during the two-day lockout period is not used for calculations related to the issue date and interest payment dates. The following sample calendar depicts this relationship for the floating rate note issue date.

July 2012

Sunday 22nd	**Monday 23rd 13-week bill auction**	Tuesday 24th	**Wednesday 25th Auction date**	Thursday 26th	Friday 27th **Lockout Day 1**	Saturday 28th
Sunday 29th	Monday 30th **Lockout Day 2** 13-week bill auction (not applicable for July 31 calculations)	**Tuesday 31st Issue date**				

Computing the index rate

The index rate that equals the simple-interest money market yield on an actual/360 basis is computed as follows:

$$r = \frac{D}{1 - \frac{\Delta T}{360} D}$$

where D is the discount rate (or auction high rate), and ΔT represents the number of days from (and including) the issue date of the 13-week bill to (but excluding) the maturity date of the 13-week bill. In the table above, $r = \frac{0.095\%}{1 - \frac{91}{360} \times 0.095\%} = 0.095022819\%$.

Computing the Projected Cash Flows

The following table presents the future interest payment dates and the number of days between them.

TABLE 2—PAYMENT DATES

Dates	Days between dates
Issue Date: T_0 = 7/31/2012.	
1st Interest Date: T_1 = 10/31/2012	$T_1 - T_0 = 92$
2nd Interest Date: T_2 = 1/31/2013	$T_2 - T_1 = 92$
3rd Interest Date: T_3 = 4/30/2013	$T_3 - T_2 = 89$
4th Interest Date: T_4 = 7/31/2013	$T_4 - T_3 = 92$
5th Interest Date: T_5 = 10/31/2013	$T_5 - T_4 = 92$
6th Interest Date: T_6 = 1/31/2014	$T_6 - T_5 = 92$
7th Interest Date: T_7 = 4/30/2014	$T_7 - T_6 = 89$
8th Interest & Maturity Dates: T_8 = 7/31/2014	$T_8 - T_7 = 92$

Let

$a_i = 100 \times \max(r + s,0)/360$

and

$A_i = a_i \times (T_i - T_{i-1}) + 100 \times 1_{\{i = 8\}}$

a_i represents the daily projected interest, for a \$100 par value, that will accrue between the future interest payment dates T_{i-1} and T_i, where $i = 1,2, \ldots ,8$. a_i's are computed using the spread $s = 0.120\%$ obtained at the auction, and the fixed index rate of $r = 0.095022819\%$ applicable to the issue date (7/31/2012). For example:

$a_1 = 100 \times \max(0.00095022819 + 0.00120,0)/360 = 0.000597286$

A_i represents the projected cash flow the floating rate note holder will receive, for a \$100 par value, at the future interest payment date T_i, where $i = 1,2, \ldots ,8$. $T_i - T_{i-1}$

is the number of days between the future interest payment dates T_{i-1} and T_i. To account for the payback of the par value, the variable $1_{\{i = 8\}}$ takes the value 1 if the payment date is the maturity date, or 0 otherwise. For example:

$A_i = 92 \times 0.000597286 = 0.054950312$

and

$A_8 = 92 \times 0.000597286 + 100 = 100.054950312$

Let

$B_i = 1 + (r + m) \times (T_i - T_{i-1})/360$

B_i represents the projected compound factor between the future dates T_{i-1} and T_i, where $i = 1,2, \ldots ,8$. All B_i's are computed using the discount margin $m = 0.120\%$ (equals the spread determined at the auction), and the fixed index rate of $r = 0.095022819\%$ applicable to the issue date (7/31/2012). For example:

$B_3 = 1 + (0.00095022819 + 0.00120) \times 89/360 = 1.000531584$.

The following table shows the projected daily accrued interest values for \$100 par value (a_i's), cash flows at interest payment dates (A_i's), and the compound factors between payment dates (B_i's).

TABLE 3—PROJECTED CASH FLOWS AND COMPOUND FACTORS

i	a_i	A_i	B_i
1	0.000597286	0.054950312	1.000549503
2	0.000597286	0.054950312	1.000549503
3	0.000597286	0.053158454	1.000531584
4	0.000597286	0.054950312	1.000549503
5	0.000597286	0.054950312	1.000549503
6	0.000597286	0.054950312	1.000549503
7	0.000597286	0.053158454	1.000531584
8	0.000597286	100.054950312	1.000549503

Computing the Price

The price is computed as follows:

$$P = \left[\frac{A_1}{B_1} + \frac{A_2}{B_1 B_2} + \frac{A_3}{B_1 B_2 B_3} + \frac{A_4}{B_1 B_2 B_3 B_4} + \frac{A_5}{B_1 B_2 B_3 B_4 B_5} + \frac{A_6}{B_1 B_2 B_3 B_4 B_5 B_6} + \frac{A_7}{B_1 B_2 B_3 B_4 B_5 B_6 B_7} + \frac{A_8}{B_1 B_2 B_3 B_4 B_5 B_6 B_7 B_8} \right]$$

$$P = \left[\frac{0.054950312}{B_1} + \frac{0.054950312}{B_1 B_2} + \frac{0.053158454}{B_1 B_2 B_3} + \frac{0.054950312}{B_1 B_2 B_3 B_4} + \frac{0.054950312}{B_1 B_2 B_3 B_4 B_5} + \frac{0.054950312}{B_1 B_2 B_3 B_4 B_5 B_6} + \frac{0.053158454}{B_1 B_2 B_3 B_4 B_5 B_6 B_7} + \frac{100.054950312}{B_1 B_2 B_3 B_4 B_5 B_6 B_7 B_8} \right]$$

$$P = \left[\frac{0.054950312}{1.000549503} + \frac{0.054950312}{1.001099308} + \frac{0.053158454}{1.001631476} + \frac{0.054950312}{1.002181876} + \frac{0.054950312}{1.002732578} + \frac{0.054950312}{1.003283582} + \frac{0.053158454}{1.003816912} + \frac{100.054950312}{1.004368512} \right]$$

$$P = [0.054920133 + 0.054889971 + 0.053071869 + 0.054830678 + 0.054800565 + 0.054770469 + 0.052956324 + 99.619760194]$$

$$P = 100.000000203 = \$100.000000$$

B. For newly issued floating rate notes issued at a premium:

Formula:

$$P = \sum_{i=1}^{N} \left(\frac{100 \times \frac{1}{360}(T_i - T_{i-1}) \times \max(r+s,0)}{\prod_{k=1}^{i} \left(1 + \frac{1}{360}(T_k - T_{k-1}) \times (r+m)\right)} \right) + \frac{100}{\prod_{k=1}^{N} \left(1 + \frac{1}{360}(T_k - T_{k-1}) \times (r+m)\right)}$$

Example:

The purpose of this example is to demonstrate how a floating rate note auction can result in a price at a premium given a negative discount margin and spread at auction. For a new two-year floating rate note auctioned on July 25, 2012, and issued on July 31, 2012, with a maturity date of July 31, 2014, solve for the price per 100 (P). In a new issue (not a reopening) of a floating rate note, the discount margin established at auction will be equal to the spread. In this example, the discount margin determined at auction is −0.150%, but the floating rate note is subject to a daily interest rate accrual minimum of 0.000%.

Definitions:

T_0 = July 31, 2012.
N = 8.
T_N = July 31, 2014.
r = 0.095022819%.
s = −0.150%.
m = −0.150%.

As of the issue date the latest 13-week bill, auctioned at least two days prior, has the following information:

TABLE 1—13-WEEK BILL AUCTION DATA

Auction date	Issue date	Maturity date	Auction clearing price	Auction high rate	Index rate
7/23/2012	7/26/2012	10/25/2012	99.975986	0.095%	0.095022819%

Computing the Index Rate

The index rate that equals the simple-interest money market yield on an actual/360 basis is computed as follows:

$$r = \frac{D}{1 - \frac{\Delta T}{360} D}$$

where D is the discount rate (or auction high rate), and ΔT represents the number of days from (and including) the issue date of the 13-week bill to (but excluding) the maturity date of the 13-week bill. In the table above, $r = \frac{0.095\%}{1 - \frac{91}{360} \times 0.095\%} = 0.095022819\%$.

Computing the Projected Cash Flows

The following table presents the future interest payment dates and the number of days between them.

TABLE 2—PAYMENT DATES

Dates	Days between dates
Issue Date: T_0 = 7/31/2012.	
1st Interest Date: T_1 = 10/31/2012	$T_1 - T_0 = 92$
2nd Interest Date: T_2 = 1/31/2013	$T_2 - T_1 = 92$
3rd Interest Date: T_3 = 4/30/2013	$T_3 - T_2 = 89$
4th Interest Date: T_4 = 7/31/2013	$T_4 - T_3 = 92$
5th Interest Date: T_5 = 10/31/2013	$T_5 - T_4 = 92$
6th Interest Date: T_6 = 1/31/2014	$T_6 - T_5 = 92$
7th Interest Date: T_7 = 4/30/2014	$T_7 - T_6 = 89$
8th Interest & Maturity Dates: T_8 = 7/31/2014	$T_8 - T_7 = 92$

Let

$a_i = 100 \times \max(r + s,0)/360$

and

$A_i = a_i \times (T_i - T_{i-1}) + 100 \times 1_{\{i=8\}}$

a_i Represents the daily projected interest, for a $100 par value, that will accrue between the future interest payment dates T_{i-1} and T_i where i = 1,2, . . . ,8. a_i's are computed using the spread s = − 0.150%, and the fixed index rate of r = 0.095022819% applicable to the issue date (7/31/2012). For example:

$a_1 = 100 \times \max(0.00095022819 - 0.00150,0)/360 = 100 \times 0/360 = 0.000000000$

A_i represents the projected cash flow the floating rate note holder will receive, for a $100 par value, at the future interest payment date T_i, where i = 1,2, . . ., 8. $T_i - T_{i-1}$ is the number of days between the future interest payment dates T_{i-1} and T_i. To account for the payback of the par value, the variable $1_{\{i=8\}}$ takes the value 1 if the payment date is the maturity date, or 0 otherwise. For example:

$A_1 = 92 \times 0.000000000 = 0.000000000$

and

$A_8 = 92 \times 0.000000000 + 100 = 100.000000000$

Let

$B_i = 1 + (r + m) \times (T_i–T_{i-1})/360$

B_i represents the projected compound factor between the future dates T_{i-1} and T_i, where i = 1,2, . . ., 8. All B_i's are computed using the discount margin m = −0.150% (equals the spread obtained at the auction), and the fixed index rate of r = 0.095022819% applicable to the issue date (7/31/2012). For example:

$B_3 = 1 + (0.00095022819 - 0.00150) \times 89/360 = 0.999864084.$

The following table shows the projected daily accrued interests for $100 par value ($a_i$'s), cash flows at interest payment dates (A_i's), and the compound factors between payment dates (B_i's).

TABLE 3—PROJECTED CASH FLOWS AND COMPOUND FACTORS

i	a_i	A_i	B_i
1	0.000000000	0.000000000	0.999859503
2	0.000000000	0.000000000	0.999859503
3	0.000000000	0.000000000	0.999864084
4	0.000000000	0.000000000	0.999859503
5	0.000000000	0.000000000	0.999859503
6	0.000000000	0.000000000	0.999859503
7	0.000000000	0.000000000	0.999864084
8	0.000000000	100.000000000	0.999859503

Computing the Price

The price is computed as follows:

$$P = \left[\frac{A_1}{B_1} + \frac{A_2}{B_1 B_2} + \frac{A_3}{B_1 B_2 B_3} + \frac{A_4}{B_1 B_2 B_3 B_4} + \frac{A_5}{B_1 B_2 B_3 B_4 B_5} + \right.$$

$$\left. \frac{A_6}{B_1 B_2 B_3 B_4 B_5 B_6} + \frac{A_7}{B_1 B_2 B_3 B_4 B_5 B_6 B_7} + \frac{A_8}{B_1 B_2 B_3 B_4 B_5 B_6 B_7 B_8} \right]$$

$$P = \left[\frac{0.000000000}{B_1} + \frac{0.0000000000}{B_1 B_2} + \frac{0.0000000000}{B_1 B_2 B_3} + \frac{0.000000000}{B_1 B_2 B_3 B_4} + \right.$$

$$\left. \frac{0.0000000000}{B_1 B_2 B_3 B_4 B_5} + \frac{0.000000000}{B_1 B_2 B_3 B_4 B_5 B_6} + \frac{0.0000000000}{B_1 B_2 B_3 B_4 B_5 B_6 B_7} + \frac{100.0000000000}{B_1 B_2 B_3 B_4 B_5 B_6 B_7 B_8} \right]$$

$$P = [0.000000000 + 0.000000000 + 0.000000000 + 0.000000000 +$$

$$0.000000000 + 0.000000000 + 0.000000000 + 100.000000000/0.998885730]$$

$$P = 100.111551298 = \$100.111551$$

Definitions for Reopenings of Floating Rate Notes and Calculation of Interest Payments

IP_i = the quarterly interest payment at date T_i.

P_D = the price that includes the accrued interest per $100 par value as of the reopening issue date.

AI = accrued interest per $100 par value as of the reopening issue date.

P_C = the price without accrued interest per $100 par value as of the reopening issue date.

T_{-1} = the dated date if the reopening occurs before the first interest payment date, or, otherwise, the latest interest payment date prior to the reopening issue date.

T_0 = the reopening issue date.

N = the total number of remaining quarterly interest payments as of the reopening issue date.

i and k = indexes that identify the sequence of interest payment dates relative to the issue date. For example T_1, T_2, and T_3 represent the first, second, and the third interest payment dates after the issue date respectively, while T_{-1} represents the preceding interest payment date before the issue date.

j = an index that identifies days between consecutive interest payment dates.

T_i = the i[th] remaining quarterly interest payment date.

$T_i - T_{i-1}$ = the number of days between the interest payment date T_i and the preceding interest payment date.

T_N = the maturity date.

r_j's = the effective index rates for days between the last interest payment date and the reopening issue date.

r = the index rate applicable to the reopening issue date.

s = the spread.

m = the discount margin.

C. Pricing and accrued interest for reopened floating rate notes

Formula:

$$P_D = \frac{100 \times \frac{1}{360} \sum_{j=T_{-1}}^{T_0 - 1} \max\left(r_j + s, 0\right)}{1 + \frac{1}{360}\left(T_1 - T_0\right) \times (r + m)} + \sum_{i=1}^{N} \left(\frac{100 \times \frac{1}{360}\left(T_i - T_{i-1}\right) \times \max(r + s, 0)}{\prod_{k=1}^{i} \left(1 + \frac{1}{360}\left(T_k - T_{k-1}\right) \times (r + m)\right)} \right) + \frac{100}{\prod_{k=1}^{N} \left(1 + \frac{1}{360}\left(T_k - T_{k-1}\right) \times (r + m)\right)}$$

$$AI = 100 \times \frac{1}{360} \sum_{j=T_{-1}}^{T_0 - 1} \max\left(r_j + s, 0\right)$$

Example:

The purpose of this example is to determine the floating rate note prices with and without accrued interest at the time of the reopening auction. For a two-year floating rate note that was originally auctioned on July 25, 2012, with an issue date of July 31, 2012, reopened in an auction on August 30, 2012 and issued on August 31, 2012, with a maturity date of July 31, 2014, solve for accrued interest per 100 (AI), the price with accrued interest per 100 (P_D) and the price without accrued interest per 100 (P_C). Since this is a reopening of an original issue from the prior month, Table 2 as shown in the example is used for accrued interest calculations. In the case of floating rate note reopenings, the spread on the security remains equal to the spread that was established at the original auction of the floating rate notes.

Definitions:

T_{-1} = July 31, 2012.
T_0 = August 31, 2012.
N = 8.
T_N = July 31, 2014.
r = 0.105027876%.
s = 0.120%.
m = 0.100%.

The following table shows the past results for the 13-week bill auction.

TABLE 1—13-WEEK BILL AUCTION DATA

Auction date	Issue date	Maturity date	Auction clearing price	Auction high rate (percent)	Index rate (percent)
7/23/2012	7/26/2012	10/25/2012	99.975986	0.095	0.095022819
7/30/2012	8/2/2012	11/1/2012	99.972194	0.110	0.110030595
8/6/2012	8/9/2012	11/8/2012	99.974722	0.100	0.100025284
8/13/2012	8/16/2012	11/15/2012	99.972194	0.110	0.110030595
8/20/2012	8/23/2012	11/23/2012	99.973167	0.105	0.105028183
8/27/2012	8/30/2012	11/29/2012	99.973458	0.105	0.105027876

Computing the Index Rate

The index rate that equals the simple-interest money market yield on an actual/360 basis is computed as follows:

$$r = \frac{D}{1 - \frac{\Delta T}{360} D}$$

where D is the discount rate (or auction high rate), and ΔT represents the number of days from (and including) the issue date of the 13-week bill to (but excluding) the maturity date of the 13-week bill. In the table above the corresponding index rate for the 8/27/2012 auction is $r = \frac{0.105\%}{1 - \frac{91}{360} \times 0.105\%} = 0.105027876\%$

The following table shows the index rates applicable for the accrued interest.

TABLE 2—APPLICABLE INDEX RATE

Accrual starts	Accrual ends	Number of days in accrual period	Applicable floating rate	
			Auction date	Index rate (percent)
7/31/2012	7/31/2012	1	7/23/2012	0.095022819
8/1/2012	8/6/2012	6	7/30/2012	0.110030595
8/7/2012	8/13/2012	7	8/6/2012	0.100025284
8/14/2012	8/20/2012	7	8/13/2012	0.110030595
8/21/2012	8/27/2012	7	8/20/2012	0.105028183
8/28/2012	8/30/2012	3	8/27/2012	0.105027876

Computing the Accrued Interest

The accrued interest as of the new issue date (8/31/2012) for a $100 par value is:

$AI = 1 \times 100 \times \max(0.00095022819 + 0.00120,0)/360$
$+ 6 \times 100 \times \max(0.00110030595 + 0.00120,0)/360$
$+ 7 \times 100 \times \max(0.00100025284 + 0.00120,0)/360$
$+ 7 \times 100 \times \max(0.00110030595 + 0.00120,0)/360$
$+ 7 \times 100 \times \max(0.00105028183 + 0.00120,0)/360$
$+ 3 \times 100 \times \max(0.00105027876 + 0.00120,0)/360$

$AI = 1 \times 0.000597286$
$+ 6 \times 0.000638974$
$+ 7 \times 0.000611181$
$+ 7 \times 0.000638974$
$+ 7 \times 0.000625078$
$+ 3 \times 0.000625077$

$AI = 0.000597286 + 0.003833844 + 0.004278267 + 0.004472818 + 0.004375546 + 0.001875231$

$AI = 0.019432992 = \$0.019433$

Computing the Projected Cash Flows

The following table presents the future interest payment dates and the number of days between them.

TABLE 3—PAYMENT DATES

Dates	Days between dates
Original Issue Date: T_{-1} = 7/31/2012.	
New Issue Date: T_0 = 8/31/2012	$T_0 - T_{-1} = 31$
1st Interest Date: T_1 = 10/31/2012	$T_1 - T_0 = 61$
2nd Interest Date: T_2 = 1/31/2013	$T_2 - T_1 = 92$
3rd Interest Date: T_3 = 4/30/2013	$T_3 - T_2 = 89$
4th Interest Date: T_4 = 7/31/2013	$T_4 - T_3 = 92$
5th Interest Date: T_5 = 10/31/2013	$T_5 - T_4 = 92$
6th Interest Date: T_6 = 1/31/2014	$T_6 - T_5 = 92$
7th Interest Date: T_7 = 4/30/2014	$T_7 - T_6 = 89$
8th Interest & Maturity Dates: T_8 = 7/31/2014	$T_8 - T_7 = 92$

Let

$a_i = 100 \times \max(r + s, 0)/360$

and

$A_i = a_i \times (T_i - T_{i-1}) + 100 \times 1_{\{i=8\}}$

a_i represents the daily projected interest, for a $100 par value, that will accrue between the future interest payment dates T_{i-1} and T_i, where $i = 1,2,\ldots,8$. a_i's are computed using the spread $s = 0.120\%$ obtained at the original auction, and the fixed index rate of $r = 0.105027876\%$ applicable to the new issue date (8/31/2012). For example:

$a_i = 100 \times \max(0.00105027876 + 0.00120,0)/360 = 0.000625077$

A_i represents the projected cash flow the floating rate note holder will receive, less accrued interest, for a $100 par value, at the future interest payment date T_i, where $i = 1,2,\ldots,8$. $T_i - T_{i-1}$ is the number of days between the future interest payment dates T_{i-1} and T_i. To account for the payback of the par value, the variable $1_{\{i=8\}}$ takes the value 1 if the payment date is the maturity date, or 0 otherwise. For example:

$A_1 = 61 \times 0.000625077 = 0.038129697$

and

$A_8 = 92 \times 0.000625077 + 100 = 100.057507084$

Let

$B_i = 1 + (r + m) \times (T_i - T_{i-1})/360$

B_i represents the projected compound factor between the future dates T_{i-1} and T_i, where $i = 1,2,\ldots,8$. All B_i's are computed using the discount margin $m = 0.100\%$ obtained at the reopening auction, and the fixed index rate of $r = 0.105027876\%$ applicable to the new issue date (8/31/2012). For example:

$B_3 = 1 + (0.00105027876 + 0.00100) \times 89/360 = 1.000506874$

The following table shows the projected daily accrued interests for $100 par value ($a_i$'s), cash flows at interest payment dates (A_i's), and the compound factors between payment dates (B_i's).

TABLE 4—PROJECTED CASH FLOWS AND COMPOUND FACTORS

i	a_i	A_i	B_i
1	0.000625077	0.038129697	1.000347408
2	0.000625077	0.057507084	1.000523960
3	0.000625077	0.055631853	1.000506874
4	0.000625077	0.057507084	1.000523960
5	0.000625077	0.057507084	1.000523960
6	0.000625077	0.057507084	1.000523960
7	0.000625077	0.055631853	1.000506874
8	0.000625077	100.057507084	1.000523960

Computing the Price

The price with accrued interest is computed as follows:

$$P_D = \left[\frac{AI + A_1}{B_1} + \frac{A_2}{B_1B_2} + \frac{A_3}{B_1B_2B_3} + \frac{A_4}{B_1B_2B_3B_4} + \frac{A_5}{B_1B_2B_3B_4B_5} + \frac{A_6}{B_1B_2B_3B_4B_5B_6} + \frac{A_7}{B_1B_2B_3B_4B_5B_6B_7} + \frac{A_8}{B_1B_2B_3B_4B_5B_6B_7B_8} \right]$$

$$P_D = \left[\frac{0.019432992 + 0.038129697}{B_1} + \frac{0.057507084}{B_1B_2} + \frac{0.055631853}{B_1B_2B_3} + \frac{0.057507084}{B_1B_2B_3B_4} + \frac{0.057507084}{B_1B_2B_3B_4B_5} + \frac{0.057507084}{B_1B_2B_3B_4B_5B_6} + \frac{0.055631853}{B_1B_2B_3B_4B_5B_6B_7} + \frac{100.057507084}{B_1B_2B_3B_4B_5B_6B_7B_8} \right]$$

$$P_D = \left[\frac{0.057562689}{1.000347408} + \frac{0.057507084}{1.000871550} + \frac{0.055631853}{1.001378866} + \frac{0.057507084}{1.001903548} + \frac{0.057507084}{1.002428506} + \frac{0.057507084}{1.002953738} + \frac{0.055631853}{1.003462109} + \frac{100.057507084}{1.003987883} \right]$$

$$P_D = [0.057542698 + 0.057457007 + 0.055555250 + 0.057397824 + 0.057367766 + 0.057337723 + 0.055439914 + 99.660074368]$$

$$P_D = 100.058172550 = \$100.058173$$

The price without accrued interest is computed as follows:

$$P_C = P_D - AI = 100.058172550 - 0.019432992$$

$$P_C = 100.038739558 = \$100.038740$$

D. For calculating interest payments:

Example:

For a new issue of a two-year floating rate note auctioned on July 25, 2012, and issued on July 31, 2012, with a maturity date of July 31, 2014, and a first interest payment date of October 31, 2012, calculate the quarterly interest payments (IP_i) per 100. In a new issuance (not a reopening) of a new floating rate note, the discount margin determined at auction will be equal to the spread. The interest accrual rate used for this floating rate note on the issue date is 0.215022819% (index rate of 0.095022819% plus a spread of 0.120%) and this rate is used for each daily interest accrual over the life of the security for the purposes of this example.

(a) If it is a new floating rate note, then $IP_i = 100 \times \frac{1}{360}\left(T_i - T_{i-1}\right) \times \max(r+s,0)$

(b) If it is a reopened floating rate note, and the interest payment is the first one after the reopening, then $IP_i = 100 \times \frac{1}{360}\sum_{j=T_{-1}}^{T_0-1} \max\left(r_j + s, 0\right) + 100 \times \frac{1}{360}\left(T_1 - T_0\right) \times \max(r+s,0)$

(c) If it is a reopened floating rate note, and the interest payment is not the first one after the reopening, then $IP_i = 100 \times \frac{1}{360}\left(T_i - T_{i-1}\right) \times \max(r+s,0)$

Example 1: Projected interest payment as of the original issue date.

T_0 = July 31, 2012.
N = 8.
T_N = July 31, 2014.
r = 0.095022819%.
s = 0.120%.
m = 0.120%.

As of the issue date the latest 13-week bill, auctioned at least two days prior, has the following information:

TABLE 1—13-WEEK BILL AUCTION DATA

Auction date	Issue date	Maturity date	Auction clearing price	Auction high rate	Index rate
7/23/2012	7/26/2012	10/25/2012	99.975986	0.095%	0.095022819%

Computing the Index Rate

The index rate that equals the simple-interest money market yield on an actual/360 basis is computed as follows:

$$r = \frac{D}{1 - \frac{\Delta T}{360} D}$$

where D is the discount rate (or auction high rate), and ΔT represents the number of days from (and including) the issue date of the 13-week bill to (but excluding) the maturity date of the 13-week bill. In the table above, $r = \frac{0.095\%}{1 - \frac{91}{360} \times 0.095\%} = 0.095022819\%$.

Computing the Projected Cash Flows

The following table presents the future interest payment dates and the number of days between them.

TABLE 2—PAYMENT DATES

Dates	Days between dates
Issue Date: T_0 = 7/31/2012.	
1st Interest Date: T_1 = 10/31/2012	$T_1 - T_0 = 92$
2nd Interest Date: T_2 = 1/31/2013	$T_2 - T_1 = 92$
3rd Interest Date: T_3 = 4/30/2013	$T_3 - T_2 = 89$
4th Interest Date: T_4 = 7/31/2013	$T_4 - T_3 = 92$
5th Interest Date: T_5 = 10/31/2013	$T_5 - T_4 = 92$
6th Interest Date: T_6 = 1/31/2014	$T_6 - T_5 = 92$
7th Interest Date: T_7 = 4/30/2014	$T_7 - T_6 = 89$

TABLE 2—PAYMENT DATES—Continued

Dates	Days between dates
8th Interest & Maturity Dates: T_8 = 7/31/2014	$T_8 - T_7 = 92$

Using the spread $s = 0.120\%$, and the fixed index rate of $r = 0.095022819\%$ applicable to the issue date (7/31/2012), the first and seventh projected interest payments are computed as follows:

$IP_1 = 92 \times [100 \times \max(0.00095022819 + 0.00120,0)/360]$

$IP_1 = 92 \times 0.000597286 = 0.054950312$

$IP_7 = 89 \times [100 \times \max(0.00095022819 + 0.00120,0)/360]$

$IP_7 = 89 \times 0.000597286 = 0.053158454$

The following table shows all projected interest payments as of the issue date.

TABLE 3—PROJECTED INTEREST PAYMENTS

i	Dates	IP_i
1	10/31/2012	0.054950312
2	1/31/2013	0.054950312
3	4/30/2013	0.053158454
4	7/31/2013	0.054950312
5	10/31/2013	0.054950312
6	1/31/2014	0.054950312
7	4/30/2014	0.053158454
8	7/31/2014	0.054950312

Example 2: Projected interest payment as of the reopening issue date (intermediate values, including rates in percentage terms, are rounded to nine decimal places).

This example demonstrates the calculations required to determine the interest payment due when the reopened floating rate note is issued. This example also demonstrates the need to calculate accrued interest at the time of a floating rate reopening auction. Since this is a reopening of an original issue from 31 days prior, Table 5 as shown in the example is used for accrued interest calculations. For a two-year floating rate note originally auctioned on July 25, 2012 with an original issue date of July 31, 2012, reopened by an auction on August 30, 2012 and issued on August 31, 2012, with a maturity date of July 31, 2014, calculate the quarterly interest payments (IP_I) per 100. T_{-1} is the dated date if the reopening occurs before the first interest payment date, or otherwise the latest interest payment date prior to the new issue date.

T_{-1} = July 31, 2012.

T_0 = August 31, 2012.

N = 8.

T_N = July 31, 2014.

r = 0.105027876%.

s = 0.120%.

m = 0.100%.

The following table shows the past results for the 13-week bill auction.

TABLE 4—13-WEEK BILL AUCTION DATA

Auction date	Issue date	Maturity date	Auction clearing price	Auction high rate (percent)	Index rate (percent)
7/23/2012	7/26/2012	10/25/2012	99.975986	0.095	0.095022819
7/30/2012	8/2/2012	11/1/2012	99.972194	0.110	0.110030595
8/6/2012	8/9/2012	11/8/2012	99.974722	0.100	0.100025284
8/13/2012	8/16/2012	11/15/2012	99.972194	0.110	0.110030595
8/20/2012	8/23/2012	11/23/2012	99.973167	0.105	0.105028183
8/27/2012	8/30/2012	11/29/2012	99.973458	0.105	0.105027876

Computing the Index Rate

The index rate that equals the simple-interest money market yield on an actual/360 basis is computed as follows:

$$r = \frac{D}{1 - \frac{\Delta T}{360} D}$$

where D is the discount rate (or auction high rate), and ΔT represents the number of days from (and including) the issue date of the 13-week bill to (but excluding) the maturity date of the 13-week bill. In the table above the corresponding index rate for the 7/23/2012 auction is $r = \frac{0.095\%}{1 - \frac{91}{360} \times 0.095\%} = 0.095022819\%$.

The following table shows the index rates applicable for the accrued interest.

TABLE 5—APPLICABLE INDEX RATE

Accrual starts	Accrual ends	Number of days in accrual period	Applicable floating rate	
			Auction date	Index rate (percent)
7/31/2012	7/31/2012	1	7/23/2012	0.095022819
8/1/2012	8/6/2012	6	7/30/2012	0.110030595
8/7/2012	8/13/2012	7	8/6/2012	0.100025284
8/14/2012	8/20/2012	7	8/13/2012	0.110030595
8/21/2012	8/27/2012	7	8/20/2012	0.105028183
8/28/2012	8/30/2012	3	8/27/2012	0.105027876

Computing the accrued interest

The accrued interest as of 8/31/2012 for a $100 par value is:

$AI = 1 \times 100 \times \max\,(0.00095022819 + 0.00120,0)/360$
$+ 6 \times 100 \times \max\,(0.00110030595 + 0.00120,0)/360$
$+ 7 \times 100 \times \max\,(0.00100025284 + 0.00120,0)/360$
$+ 7 \times 100 \times \max\,(0.00110030595 + 0.00120,0)/360$
$+ 7 \times 100 \times \max\,(0.00105028183 + 0.00120,0)/360$
$+ 3 \times 100 \times \max\,(0.00105027876 + 0.00120,0)/360$

$AI = 1 \times 0.000597286$
$+ 6 \times 0.000638974$
$+ 7 \times 0.000611181$
$+ 7 \times 0.000638974$
$+ 7 \times 0.000625078$
$+ 3 \times 0.000625077$

$AI = 0.000597286 + 0.003833844 + 0.004278267 + 0.004472818 + 0.004375546 + 0.001875231$

$AI = 0.019432992 = \$0.019433$

The following table presents the future interest payment dates and the number of days between them.

TABLE 6—PAYMENT DATES

Dates	Days between dates
Original Issue Date: T_{-1} = 7/31/2012.	
New Issue Date: T_0 = 8/31/2012	$T_0 - T_{-1} = 31$
1st Interest Date: T_1 = 10/31/2012	$T_1 - T_0 = 61$
2nd Interest Date: T_2 = 1/31/2013	$T_2 - T_1 = 92$
3rd Interest Date: T_3 = 4/30/2013	$T_3 - T_2 = 89$
4th Interest Date: T_4 = 7/31/2013	$T_4 - T_3 = 92$
5th Interest Date: T_5 = 10/31/2013	$T_5 - T_4 = 92$
6th Interest Date: T_6 = 1/31/2014	$T_6 - T_5 = 92$
7th Interest Date: T_7 = 4/30/2014	$T_7 - T_6 = 89$
8th Interest & Maturity Dates: T_8 = 7/31/2014	$T_8 - T_7 = 92$

Using the original spread s = 0.120% (obtained on 7/25/2012), and the fixed index rate of r = 0.105027876% applicable to the new issue date (8/31/2012), the first and eighth projected interest payments are computed as follows:

IP_1 = 0.019432992 + 61 × [100 × max (0.00105027876 + 0.00120,0)/360]

IP_1 = 0.019432992 + 61 × 0.000625077

IP_1 = 0.019432992 + 0.038129697 = 0.057562689

and

IP_8 = 92 × [100 × max (0.00105027876 + 0.00120,0)/360]

IP_8 = 92 × 0.000625077 = 0.057507084

The following table shows all projected interest payments as of the new issue date.

TABLE 7—PROJECTED INTEREST PAYMENTS

i	Dates	IP_i
1	10/31/2012	0.057562689
2	1/31/2013	0.057507084
3	4/30/2013	0.055631853
4	7/31/2013	0.057507084
5	10/31/2013	0.057507084
6	1/31/2014	0.057507084
7	4/30/2014	0.055631853
8	7/31/2014	0.057507084

Definitions for Newly Issued Floating Rate Notes with an Issue Date that Occurs after the Dated Date

P_D = the price that includes accrued interest from the dated date to the issue date per $100 par value as of the issue date.

AI = the accrued interest per $100 par value as of the issue date.

P_C = the price without accrued interest per $100 par value as of the issue date.

T_{-1} = the dated date.

T_0 = the issue date.

N = the total number of remaining quarterly interest payments as of the new issue date.

i and k = indexes that identify the sequence of interest payment dates.

j = an index that identifies days between the dated date and the issue date.

T_i = the i^{th} quarterly future interest payment date.

$T_i - T_{i-1}$ = the number of days between the interest payment date T_i and the preceding interest payment date.

T_N = the maturity date.

r_j's = the effective index rates for days between the dated date and the issue date.

r = the index rate applicable to the issue date.

s = the spread.

m = the discount margin.

E. Pricing and accrued interest for new issue floating rate notes with an issue date that occurs after the dated date

Formula:

$$P_D = \frac{100 \times \frac{1}{360} \sum_{j=T_{-1}}^{T_0 - 1} \max\left(r_j + s, 0\right)}{1 + \frac{1}{360}\left(T_1 - T_0\right) \times (r + m)} + \sum_{i=1}^{N} \left(\frac{100 \times \frac{1}{360}\left(T_i - T_{i-1}\right) \times \max(r + s, 0)}{\prod_{k=1}^{i}\left(1 + \frac{1}{360}\left(T_k - T_{k-1}\right) \times (r + m)\right)} \right) + \frac{100}{\prod_{k=1}^{N}\left(1 + \frac{1}{360}\left(T_k - T_{k-1}\right) \times (r + m)\right)}$$

$$AI = 100 \times \tfrac{1}{360} \sum_{j=T_{-1}}^{T_0 - 1} \max\left(r_j + s, 0\right)$$

Example:

The purpose of this example is to demonstrate how a floating rate note can have a price without accrued interest of less than $100 par value when the issue date occurs after the dated date. An original issue two-year floating rate note is auctioned on December 29, 2011, with a dated date of December 31, 2011, an issue date of January 3, 2012, and a maturity date of December 31, 2013.

Definitions:

Dated date = 12/31/2011.
Issue date = 1/3/2012.
Maturity date = 12/31/2013.
Spread = 1.000% at auction.
Discount margin = 1.000%.

As of the issue date the latest 13-week bill, auctioned at least two days prior, has the following information:

TABLE 1—13-WEEK BILL AUCTION DATA

Auction date	Issue date	Maturity date	Auction clearing price	Auction high rate	Index rate
12/27/2011	12/29/2011	3/29/2012	99.993681	0.025%	0.025001580%

Computing the Index Rate

The index rate that equals the simple-interest money market yield on an actual/360 basis is computed as follows:

$$r = \frac{D}{1 - \frac{\Delta T}{360} D}$$

where D is the discount rate (or auction high rate), and ΔT represents the number of days from (and including) the issue date of the 13-week bill to (but excluding) the maturity date of the 13-week bill. In the table above the corresponding index rate for the 12/27/2011 auction is $r = \frac{0.025\%}{1 - \frac{91}{360} \times 0.025\%} = 0.025001580\%$

The following table shows the index rates applicable for the accrued interest.

TABLE 2—APPLICABLE INDEX RATE

Accrual starts	Accrual ends	Number of days in accrual period	Applicable floating rate	
			Auction date	Index rate
12/31/2011	1/2/2012	3	12/27/2011	0.025001580%

Computing the accrued interest

The accrued interest as of the new issue date (1/3/2012) for a $100 par value is:

$AI = 3 \times 100 \times \max(0.00025001580 + 0.01000,0)/360$

$AI = 3 \times 0.002847227$

$AI = 0.008541681 = \$0.008542$

Computing the Projected Cash Flows

The following table presents the future interest payment dates and the number of days between them.

TABLE 3—PAYMENT DATES

Dates	Days between dates
Dated Date: = T_{-1} = 12/31/2011	
Issue Date: T_0 = 1/3/2012	$T_0 - T_{-1} = 3$
1st Interest Date: T_1 = 3/31/2012	$T_1 - T_0 = 88$
2nd Interest Date: T_2 = 6/30/2012	$T_2 - T_1 = 91$
3rd Interest Date: T_3 = 9/30/2012	$T_3 - T_2 = 92$
4th Interest Date: T_4 = 12/31/2012	$T_4 - T_3 = 92$

TABLE 3—PAYMENT DATES—Continued

Dates	Days between dates
5th Interest Date: T_5 = 3/31/2013	$T_5 - T_4 = 90$
6th Interest Date: T_6 = 6/30/2013	$T_6 - T_5 = 91$
7th Interest Date: T_7 = 9/30/2013	$T_7 - T_6 = 92$
8th Interest & Maturity Dates: T_8 = 12/31/2013	$T_8 - T_7 = 92$

Let

$$a_i = 100 \times \max(r + s,\ 0)/360$$

and

$$A_i = a_i \times (T_i - T_{i-1}) + 100 \times 1_{\{i=8\}}$$

a_i represents the daily projected interest, for a $100 par value, that will accrue between the future interest payment dates T_{i-1} and T_i, where $i = 1,2,\ldots,8$. a_i's are computed using the spread $s = 1.000\%$ obtained at the auction, and the fixed index rate of $r = 0.025001580\%$ applicable to the issue date (1/3/2012). For example:

$$a_1 = 100 \times \max(0.00025001580 + 0.01000,0)/360 = 0.002847227$$

A_i represents the projected cash flow the floating rate note holder will receive, less accrued interest, for a $100 par value, at the future interest payment date T_i, where $i = 1,2,\ldots,8$. $T_i - T_{i-1}$ is the number of days between the future interest payment dates $T_{i\text{-}1}$ and T_i. To account for the payback of the par value, the variable $1_{\{i=8\}}$ takes the value 1 if the payment date is the maturity date, or 0 otherwise. For example:

$$A_1 = 88 \times 0.002847227 = 0.250555976$$

and

$$A_8 = 92 \times 0.002847227 + 100 = 100.261944884$$

Let

$$B_i = 1 + (r + m) \times (\mathrm{T}_i - T_{i-1})/360$$

B_i represents the projected compound factor between the future dates T_{i-1} and T_i, where $i = 1,2,\ldots,8$. All B_i's are computed using the discount margin $m = 1.000\%$ (equals the spread obtained at the auction), and the fixed index rate of $r = 0.025001580\%$ applicable to the issue date (1/3/2012). For example:

$$B_3 = 1 + (0.00025001580 + 0.01000) \times 92/360 = 1.002619448$$

The following table shows the projected daily accrued interests for $100 par value ($a_i$'s), cash flows at interest payment dates (A_i 's), and the compound factors between payment dates (B_i's).

TABLE 4—PROJECTED CASH FLOWS AND COMPOUND FACTORS

i	a_i	A_i	B_i
1	0.002847227	0.250555976	1.002505559
2	0.002847227	0.259097657	1.002590976
3	0.002847227	0.261944884	1.002619448
4	0.002847227	0.261944884	1.002619448
5	0.002847227	0.256250430	1.002562504
6	0.002847227	0.259097657	1.002590976
7	0.002847227	0.261944884	1.002619448
8	0.002847227	100.261944884	1.002619448

Computing the price

The price with accrued interest is computed as follows:

$$P_D = \left[\frac{AI + A_1}{B_1} + \frac{A_2}{B_1B_2} + \frac{A_3}{B_1B_2B_3} + \frac{A_4}{B_1B_2B_3B_4} + \frac{A_5}{B_1B_2B_3B_4B_5} + \frac{A_6}{B_1B_2B_3B_4B_5B_6} + \frac{A_7}{B_1B_2B_3B_4B_5B_6B_7} + \frac{A_8}{B_1B_2B_3B_4B_5B_6B_7B_8} \right]$$

$$P_D = \left[\frac{0.008541681 + 0.250555976}{B_1} + \frac{0.259097657}{B_1B_2} + \frac{0.261944884}{B_1B_2B_3} + \frac{0.261944884}{B_1B_2B_3B_4} + \frac{0.256250430}{B_1B_2B_3B_4B_5} + \frac{0.259097657}{B_1B_2B_3B_4B_5B_6} + \frac{0.261944884}{B_1B_2B_3B_4B_5B_6B_7} + \frac{100.261944884}{B_1B_2B_3B_4B_5B_6B_7B_8} \right]$$

$$P_D = \left[\frac{0.259097657}{1.002505559} + \frac{0.259097657}{1.005103027} + \frac{0.261944884}{1.007735842} + \frac{0.261944884}{1.010375554} + \frac{0.256250430}{1.012964645} + \frac{0.259097657}{1.015589212} + \frac{0.261944884}{1.018249495} + \frac{100.261944884}{1.020916747} \right]$$

$$P_D = [0.258450095 + 0.257782188 + 0.259934075 + 0.259254970 + 0.252970754 + 0.255120529 + 0.257250198 + 98.207758055]$$

$$P_D = 100.008520864 = \$100.008521$$

The price without accrued interest is computed as follows:

$$P_C = P_D - AI = 100.008520864 - 0.008541681$$

$$P_C = 99.999979183 = \$99.999979$$

V. COMPUTATION OF ADJUSTED VALUES AND PAYMENT AMOUNTS FOR STRIPPED INFLATION-PROTECTED INTEREST COMPONENTS

NOTE: Valuing an interest component stripped from an inflation-protected security at its adjusted value enables this interest component to be interchangeable (fungible) with other interest components that have the same maturity date, regardless of the underlying inflation-protected security from which the interest components were stripped. The adjusted value provides for fungibility of these various interest components when buying, selling, or transferring them or when reconstituting an inflation-protected security.

Definitions:

c = C/100 = the regular annual interest rate, payable semiannually, e.g., .03625 (the decimal equivalent of a 3⅝% interest rate)

Par = par amount of the security to be stripped

Ref $CPI_{IssueDate}$ = reference CPI for the original issue date (or dated date, when the dated date is different from the original issue date) of the underlying (unstripped) security

Ref CPI_{Date} = reference CPI for the maturity date of the interest component

AV = adjusted value of the interest component

PA = payment amount at maturity by Treasury

Formulas:

AV = Par(C/2)(100/Ref $CPI_{IssueDate}$) (rounded to 2 decimals with no intermediate rounding)

PA = AV(Ref CPI_{Date}/100) (rounded to 2 decimals with no intermediate rounding)

Example:

A 10-year inflation-protected note paying 3⅞% interest was issued on January 15, 1999, with the second interest payment on January 15, 2000. The Ref CPI of January 15, 1999 (Ref $CPI_{IssueDate}$) was 164.00000, and the Ref CPI on January 15, 2000 (Ref CPI_{Date}) was 168.24516. Calculate the adjusted value and the payment amount at maturity of the interest component.

Definitions:

c = .03875
Par = $1,000,000
Ref $CPI_{IssueDate}$ = 164.00000
Ref CPI_{Date} = 168.24516

Resolution:

For a par amount of $1 million, the adjusted value of each stripped interest component was $1,000,000(.03875/2)(100/164.00000), or $11,814.02 (no intermediate rounding).

For an interest component that matured on January 15, 2000, the payment amount was $11,814.02 (168.24516/100), or $19,876.52 (no intermediate rounding).

VI. Computation of Purchase Price, Discount Rate, and Investment Rate (Coupon-Equivalent Yield) for Treasury Bills

A. *Conversion of the discount rate to a purchase price for Treasury bills of all maturities:*

Formula:

P = 100 (1 − dr / 360).

Where:

d = discount rate, in decimals.
r = number of days remaining to maturity.
P = price per 100 (dollars).

Example:

For a bill issued November 24, 1989, due February 22, 1990, at a discount rate of 7.610%, solve for price per 100 (P).

Definitions:

d = .07610.
r = 90 (November 24, 1989 to February 22, 1990).

Resolution:

P = 100 (1 − dr / 360).
(1) P = 100 [1 − (.07610)(90) / 360].
(2) P = 100 (1 − .019025).
(3) P = 100 (.980975).
(4) P = 98.097500.

NOTE: Purchase prices per $100 are rounded to six decimal places, using normal rounding procedures.

B. *Computation of purchase prices and discount amounts based on price per $100, for Treasury bills of all maturities:*

1. To determine the purchase price of any bill, divide the par amount by 100 and multiply the resulting quotient by the price per $100.

Example:

To compute the purchase price of a $10,000 13-week bill sold at a price of $98.098000 per $100, divide the par amount ($10,000) by 100 to obtain the multiple (100). That multiple times 98.098000 results in a purchase price of $9,809.80.

2. To determine the discount amount for any bill, subtract the purchase price from the par amount of the bill.

Example:

For a $10,000 bill with a purchase price of $9,809.80, the discount amount would be $190.20, or $10,000 − $9,809.80.

C. *Conversion of prices to discount rates for Treasury bills of all maturities:*

Formula:

$$d = \left[\frac{100 - P}{100} \times \frac{360}{r}\right]$$

Where:

P = price per 100 (dollars).
d = discount rate.
r = number of days remaining to maturity.

Example:

For a 26-week bill issued December 30, 1982, due June 30, 1983, with a price of $95.934567, solve for the discount rate (d).

Definitions:

P = 95.934567.
r = 182 (December 30, 1982, to June 30, 1983).

Resolution:

$$d = \left[\frac{100 - P}{100} \times \frac{360}{r}\right]$$

$$d = \left[\frac{100 - 95.934567}{100} \times \frac{360}{182}\right]$$

(2) d = [.04065433 × 1.978021978].
(3) d = .080415158.
(4) d = 8.042%.

NOTE: Prior to April 18, 1983, we sold all bills in price-basis auctions, in which discount rates calculated from prices were rounded to three places, using normal rounding procedures. Since that time, we have sold bills only on a discount rate basis.

D. *Calculation of investment rate (coupon-equivalent yield) for Treasury bills:*

1. *For bills of not more than one half-year to maturity:*

Formula:

$$i = \left[\frac{100 - P}{P} \times \frac{y}{r}\right]$$

Where:

i = investment rate, in decimals.
P = price per 100 (dollars).
r = number of days remaining to maturity.
y = number of days in year following the issue date; normally 365, but if the period from the issue date to the same date 1 year ahead contains February 29, then y is 366. (e.g., 2020 is a leap year. Suppose the issue date for a 26-week bill is February 28, 2019. The date 1 year ahead is February 28, 2020. That 1-year period from the issue date of the bill does not contain ''February 29,'' therefore y = 365. Now suppose the issue date of a 26-week bill is March 1, 2019. The date 1 year ahead is March 1, 2020. That 1-year period from the issue date of the bill contains ''February 29,'' therefore y = 366.)

Example:

For a cash management bill issued June 1, 1990, due June 21, 1990, with a price of $99.559444 (computed from a discount rate of 7.930%), solve for the investment rate (i).

Definitions:

P = 99.559444.
r = 20 (June 1, 1990, to June 21, 1990).
y = 365.

Resolution:

$$i = \left[\frac{100 - P}{P} \times \frac{y}{r}\right]$$

$$(1)\ i = \left[\frac{100 - 99.559444}{99.559444} \times \frac{365}{20}\right]$$

(2) i = [.004425 × 18.25].
(3) i = .080756.
(4) i = 8.076%.

2. For bills of more than one half-year to maturity:

Formula:

P [1 + (r − y/2)(i/y)] (1 + i/2) = 100.

This formula must be solved by using the quadratic equation, which is:

$$ax^2 + bx + c = 0.$$

Therefore, rewriting the bill formula in the quadratic equation form gives:

$$\left[\frac{r}{2y} - .25\right] i^2 + \left(\frac{r}{y}\right) i + \left(\frac{P - 100}{P}\right) = 0$$

and solving for ''i'' produces:

$$i = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

Where:

i = investment rate in decimals.
b = r/y.
a = (r/2y) − .25.
c = (P − 100)/P.
P = price per 100 (dollars).
r = number of days remaining to maturity.
y = number of days in year following the issue date; normally 365, but if the period from the issue date to the same date 1 year ahead contains February 29, then y is 366. (e.g., 2020 is a leap year. Suppose the issue date for a 26-week bill is February 28, 2019. The date 1 year ahead is February 28, 2020. That 1-year period from the issue date of the bill does not contain ''February 29,'' therefore y = 365. Now suppose the issue date of a 26-week bill is March 1, 2019. The date 1 year ahead is March 1, 2020. That 1-year period from the issue date of the bill contains ''February 29,'' therefore y = 366.)

Example:

For a 52-week bill issued June 7, 1990, due June 6, 1991, with a price of $92.265000 (computed from a discount rate of 7.65%), solve for the investment rate (i).

Definitions:

r = 364 (June 7, 1990, to June 6, 1991).
y = 365.
P = 92.265000.
b = 364 / 365, or .997260274.
a = (364 / 730) − .25, or .248630137.
c = (92.265 − 100) / 92.265, or − .083834607.

Resolution:

$$i = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

$$(1)\ i = \frac{-.997260274 + \sqrt{(.997260274)^2 - 4[(.248630137)(-.083834607)]}}{2(.248630137)}$$

$$(2)\ i = \frac{-.997260274 + \sqrt{.994528054 + .083375239}}{.497260274}$$

(3) $i = (-.997260274 + 1.038221216) / .497260274.$
(4) $i = .040960942 / .497260274.$
(5) $i = .082373244$ or
(6) $i = 8.237\%$.

[69 FR 45202, July 28, 2004, as amended at 69 FR 52967, Aug. 30, 2004; 69 FR 53622, Sept. 2, 2004; 73 FR 14939, Mar. 20, 2008; 78 FR 46428, 46430, July 31, 2013; 78 FR 50335, Aug. 19, 2013; 78 FR 52857, Aug. 27, 2013; 78 FR 59228-59230, Sept. 26, 2013; 81 FR 43070, July 1, 2016; 87 FR 40440, July 7, 2022]

EDITORIAL NOTE: At 78 FR 59228-59230, Sept. 26, 2013, appendix B to part 356 was amended; however, portions of the amendment could not be incorporated due to inaccurate amendatory instructions.

APPENDIX C TO PART 356—INVESTMENT CONSIDERATIONS

I. INFLATION-PROTECTED SECURITIES

A. Principal and Interest Variability

An investment in securities with principal or interest determined by reference to an inflation index involves factors not associated with an investment in a non-indexed security. Such factors include the possibility that:

- The inflation index may be subject to significant changes,
- changes in the index may or may not correlate to changes in interest rates generally or with changes in other indices,
- the resulting interest may be greater or less than that payable on other securities of similar maturities, and
- in the event of sustained deflation, the amount of the semiannual interest payments, the inflation-adjusted principal of the security, and the value of stripped components will decrease. However, if at maturity the inflation-adjusted principal is less than a security's par amount, we will pay an additional amount so that the additional amount plus the inflation-adjusted principal equals the par amount. Regardless of whether or not we pay such an additional amount, we will always base interest payments on the inflation-adjusted principal as of the interest payment date. If a security has been stripped, we will pay any such additional amount at maturity to holders of principal components only. (See §356.30.)

B. Trading in the Secondary Market

The Treasury securities market is the largest and most liquid securities market in the world. The market for Treasury inflation-protected securities, however, may not be as active or liquid as the market for Treasury non-indexed securities. In addition, Treasury inflation-protected securities may not be as widely traded or as well understood as Treasury non-indexed securities. Lesser liquidity and fewer market participants may result in larger spreads between bid and asked prices for inflation-protected securities than the bid-asked spreads for non-indexed securities with the same time to maturity. Larger bid-asked spreads normally result in higher transaction costs and/or lower overall returns. The liquidity of an inflation-protected security may be enhanced over time as we issue additional amounts or more entities participate in the market.

C. Tax Considerations

Treasury inflation-protected securities and the stripped interest and principal components of these securities are subject to specific tax rules provided by Treasury regulations issued under sections 1275(d) and 1286 of the Internal Revenue Code of 1986, as amended.

D. Indexing Issues

While the Consumer Price Index ("CPI") measures changes in prices for goods and services, movements in the CPI that have occurred in the past do not necessarily indicate changes that may occur in the future.

The calculation of the index ratio incorporates an approximate three-month lag, which may have an impact on the trading price of the securities, particularly during periods of significant, rapid changes in the index.

The CPI is reported by the Bureau of Labor Statistics, a bureau within the Department of Labor. The Bureau of Labor Statistics operates independently of Treasury and, therefore, we have no control over the determination, calculation, or publication of the index. For a discussion of how we will apply the CPI in various situations, see appendix B, section I, paragraph B of this part. In addition, for a discussion of actions that we would take in the event the CPI is: discontinued; in the judgment of the Secretary, fundamentally altered in a manner materially adverse to the interests of an investor in the security; or, in the judgment of the Secretary, altered by legislation or Executive Order in a manner materially adverse to the interests of an investor in the security, see appendix B, section I, paragraph B.4 of this part.

II. FLOATING RATE NOTES

A. Interest Variability

An investment in securities with interest determined by reference to a 13-week Treasury bill index involves risks not associated with an investment in a fixed interest rate security. Such risks include the possibility that:

- Changes in the index may or may not correlate to changes in interest rates generally or with changes in other indexes;

• any given interest payment may be more or less than the amount paid on prior interest payment dates;

• the resulting interest payments may be greater or less than those payable on other securities of similar maturities, and

• in the event of sustained falling interest rates, the amount of the quarterly interest payments will decrease.

B. Trading in the Secondary Market

The Treasury securities market is the largest and most liquid securities market in the world. The market for Treasury floating rate notes, however, may not be as active or liquid as the market for Treasury non-indexed securities or Treasury inflation-protected securities. In addition, Treasury floating rate notes may not be as widely traded or as well understood as these other types of Treasury marketable securities. Prices for floating rate notes may not fluctuate in reaction to interest rate movements in the same manner as other Treasury securities. Lesser liquidity and fewer market participants may result in larger spreads between bid and asked prices for Treasury floating rate notes than the bid-asked spreads for other Treasury marketable securities with the same time to maturity. Larger bid-asked spreads normally result in higher transaction costs and/or lower overall returns. The liquidity of a Treasury floating rate note may be enhanced over time as we issue additional amounts or more entities participate in the market.

C. Tax Considerations

Treasury floating rate notes are subject to specific tax rules provided by Treasury regulations issued under section 1275(d) of the Internal Revenue Code of 1986, as amended.

D. Indexing Issues

The Bureau of the Fiscal Service publishes the High Rate immediately following a 13-week bill auction as part of the auction results. The 13-week bill is generally auctioned once per week. Treasury retains the flexibility to increase or decrease the frequency of 13-week bill auctions, which would affect the frequency of index rate resets. The High Rate is subject to various interest rate and market environments over which Treasury has no control. For a discussion of actions that Treasury would take in the event auctions of 13-week bills are discontinued or delayed, see appendix B, section I, paragraph C.4 of this part.

[69 FR 45202, July 28, 2004, as amended at 78 FR 46428, 46444, July 31, 2013]

APPENDIX D TO PART 356—DESCRIPTION OF THE INDEXES

I. CONSUMER PRICE INDEX

The Consumer Price Index (''CPI'') for purposes of inflation-protected securities is the non-seasonally adjusted U.S. City Average All Items Consumer Price Index for All Urban Consumers. It is published monthly by the Bureau of Labor Statistics (BLS), a bureau within the Department of Labor. The CPI is a measure of the average change in consumer prices over time in a fixed market basket of goods and services. This market basket includes food, clothing, shelter, fuels, transportation, charges for doctors' and dentists' services, and drugs.

In calculating the index, price changes for the various items are averaged together with weights that represent their importance in the spending of urban households in the United States. The BLS periodically updates the contents of the market basket of goods and services, and the weights assigned to the various items, to take into account changes in consumer expenditure patterns.

The CPI is expressed in relative terms in relation to a time base reference period for which the level is set at 100. For example, if the CPI for the 1982–84 reference period is 100.0, an increase of 16.5 percent from that period would be shown as 116.5. The CPI for a particular month is released and published during the following month. From time to time, the CPI is rebased to a more recent base reference period. We provide the base reference period for a particular inflation-protected security on the auction announcement for that security.

Further details about the CPI may be obtained by contacting the BLS.

II. FLOATING RATE NOTE INDEX

The floating rate note index is the 13-week Treasury bill auction High Rate (stop out rate), and converted to the simple-interest money market yield computed on an actual/360 basis.

[69 FR 45202, July 28, 2004, as amended at 78 FR 46444, July 31, 2013]

PART 357—REGULATIONS GOVERNING BOOK-ENTRY TREASURY BONDS, NOTES AND BILLS HELD IN TREASURY/RESERVE AUTOMATED DEBT ENTRY SYSTEM (TRADES) AND LEGACY TREASURY DIRECT

Subpart A—General Information