

§ 356.32

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 fixed-principal 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.

§ 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.

§ 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

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(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 pre-

vent 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 or rates 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]

APPENDIX B TO PART 356—FORMULAS AND TABLES

I. Computation of Interest on Treasury Bonds and Notes.

II. Formulas for Conversion of Fixed-Principal Security Yields to Equivalent Prices.

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

IV. Computation of Adjusted Values and Payment Amounts for Stripped Inflation-Protected Interest Components.

V. 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. In actual practice, we generally do not round prior to determining the final result.

If you use a multi-decimal calculator, we recommend setting your calculator to at least 13 decimals and then applying normal rounding procedures. This should be sufficient to obtain the same final results. However, in the case of any discrepancies, our determinations will be final.

I. COMPUTATION OF INTEREST ON TREASURY BONDS AND NOTES

A. Treasury Fixed-Principal Securities

1. *Regular Half-Year Payment Period.* We pay interest on marketable Treasury fixed-principal 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 fixed-principal note with a par amount of \$1,000 and an interest rate of 8% is made in this manner: $(\$1,000 \times .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 fixed-principal 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 1/8% to 20% on \$1,000 for one day in increments of 1/8 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
1/8	0.003396739	0.003415301	0.003434066	0.003453039
1/4	0.006793478	0.006830601	0.006868132	0.006906077
3/8	0.010190217	0.010245902	0.010302198	0.010359116
1/2	0.013586957	0.013661202	0.013736264	0.013812155
5/8	0.016983696	0.017076503	0.017170330	0.017265193
3/4	0.020380435	0.020491803	0.020604396	0.020718232
7/8	0.023777174	0.023907104	0.024038462	0.024171271
1	0.027173913	0.027322404	0.027472527	0.027624309
1 1/8	0.030570652	0.030737705	0.030906593	0.031077348
1 1/4	0.033967391	0.034153005	0.034340659	0.034530387
1 3/8	0.037364130	0.037568306	0.037774725	0.037983425
1 1/2	0.040760870	0.040983607	0.041208791	0.041436464
1 5/8	0.044157609	0.044398907	0.044642857	0.044889503
1 3/4	0.047554348	0.047814208	0.048076923	0.048342541
1 7/8	0.050951087	0.051229508	0.051510989	0.051795580
2	0.054347826	0.054644809	0.054945055	0.055248619
2 1/8	0.057744565	0.058060109	0.058379121	0.058701657
2 1/4	0.061141304	0.061475410	0.061813187	0.062154696
2 3/8	0.064538043	0.064890710	0.065247253	0.065607735
2 1/2	0.067934783	0.068306011	0.068681319	0.069060773
2 5/8	0.071331522	0.071721311	0.072115385	0.072513812
2 3/4	0.074728261	0.075136612	0.075549451	0.075966851
2 7/8	0.078125000	0.078551913	0.078983516	0.079419890
3	0.081521739	0.081967213	0.082417582	0.082872928
3 1/8	0.084918478	0.085382514	0.085851648	0.086325967
3 1/4	0.088315217	0.088797814	0.089285714	0.089779006
3 3/8	0.091711957	0.092213115	0.092719780	0.093232044

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
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
4⅓	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
5⅛	0.139266304	0.140027322	0.140796703	0.141574586
5¼	0.142663043	0.143442623	0.144230769	0.145027624
5⅓	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
6⅓	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	0.186446088
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
7⅓	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
8⅓	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
9⅓	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
10⅓	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
11⅓	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

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
12 ¹ / ₈	0.329483696	0.331284153	0.333104396	0.334944751
12 ¹ / ₄	0.332880435	0.334699454	0.336538462	0.338397790
12 ³ / ₈	0.336277174	0.338114754	0.339972527	0.341850829
12 ¹ / ₂	0.339673913	0.341530055	0.343406593	0.345303867
12 ⁵ / ₈	0.343070652	0.344945355	0.346840659	0.348756906
12 ³ / ₄	0.346467391	0.348360656	0.350274725	0.352209945
12 ⁷ / ₈	0.349864130	0.351775956	0.353708791	0.355662983
13	0.353260870	0.355191257	0.357142857	0.359116022
13 ¹ / ₈	0.356657609	0.358606557	0.360576923	0.362569061
13 ¹ / ₄	0.360054348	0.362021858	0.364010989	0.366022099
13 ³ / ₈	0.363451087	0.365437158	0.367445055	0.369475138
13 ¹ / ₂	0.366847826	0.368852459	0.370879121	0.372928177
13 ⁵ / ₈	0.370244565	0.372267760	0.374313187	0.376381215
13 ³ / ₄	0.373641304	0.375683060	0.377747253	0.379834254
13 ⁷ / ₈	0.377038043	0.379098361	0.381181319	0.383287293
14	0.380434783	0.382513661	0.384615385	0.386740331
14 ¹ / ₈	0.383831522	0.385928962	0.388049451	0.390193370
14 ¹ / ₄	0.387228261	0.389344262	0.391483516	0.393646409
14 ³ / ₈	0.390625000	0.392759563	0.394917582	0.397099448
14 ¹ / ₂	0.394021739	0.396174863	0.398351648	0.400552486
14 ⁵ / ₈	0.397418478	0.399590164	0.401785714	0.404005525
14 ³ / ₄	0.400815217	0.403005464	0.405219780	0.407458564
14 ⁷ / ₈	0.404211957	0.406420765	0.408653846	0.410911602
15	0.407608696	0.409836066	0.412087912	0.414364641
15 ¹ / ₈	0.411005435	0.413251366	0.415521978	0.417817680
15 ¹ / ₄	0.414402174	0.416666667	0.418956044	0.421270718
15 ³ / ₈	0.417798913	0.420081967	0.422390110	0.424723757
15 ¹ / ₂	0.421195652	0.423497268	0.425824176	0.428176796
15 ⁵ / ₈	0.424592391	0.426912568	0.429258242	0.431629834
15 ³ / ₄	0.427989130	0.430327869	0.432692308	0.435082873
15 ⁷ / ₈	0.431385870	0.433743169	0.436126374	0.438535912
16	0.434782609	0.437158470	0.439560440	0.441988950
16 ¹ / ₈	0.438179348	0.440573770	0.442994505	0.445441989
16 ¹ / ₄	0.441576087	0.443989071	0.446428571	0.448895028
16 ³ / ₈	0.444972826	0.447404372	0.449862637	0.452348066
16 ¹ / ₂	0.448369565	0.450819672	0.453296703	0.455801105
16 ⁵ / ₈	0.451766304	0.454234973	0.456730769	0.459254144
16 ³ / ₄	0.455163043	0.457650273	0.460164835	0.462707182
16 ⁷ / ₈	0.458559783	0.461065574	0.463598901	0.466160221
17	0.461956522	0.464480874	0.467032967	0.469613260
17 ¹ / ₈	0.465353261	0.467896175	0.470467033	0.473066298
17 ¹ / ₄	0.468750000	0.471311475	0.473901099	0.476519337
17 ³ / ₈	0.472146739	0.474726776	0.477335165	0.479972376
17 ¹ / ₂	0.475543478	0.478142077	0.480769231	0.483425414
17 ⁵ / ₈	0.478940217	0.481557377	0.484203297	0.486878453
17 ³ / ₄	0.482336957	0.484972678	0.487637363	0.490331492
17 ⁷ / ₈	0.485733696	0.488387978	0.491071429	0.493784530
18	0.489130435	0.491803279	0.494505495	0.497237569
18 ¹ / ₈	0.492527174	0.495218579	0.497939560	0.500690608
18 ¹ / ₄	0.495923913	0.498633880	0.501373626	0.504143646
18 ³ / ₈	0.499320652	0.502049180	0.504807692	0.507596685
18 ¹ / ₂	0.502717391	0.505464481	0.508241758	0.511049724
18 ⁵ / ₈	0.506114130	0.508879781	0.511675824	0.514502762
18 ³ / ₄	0.509510870	0.512295082	0.515109890	0.517955801
18 ⁷ / ₈	0.512907609	0.515710383	0.518543956	0.521408840
19	0.516304348	0.519125683	0.521978022	0.524861878
19 ¹ / ₈	0.519701087	0.522540984	0.525412088	0.528314917
19 ¹ / ₄	0.523097826	0.525956284	0.528846154	0.531767956
19 ³ / ₈	0.526494565	0.529371585	0.532280220	0.535220994
19 ¹ / ₂	0.529891304	0.532786885	0.535714286	0.538674033
19 ⁵ / ₈	0.533288043	0.536202186	0.539148352	0.542127072
19 ³ / ₄	0.536684783	0.539617486	0.542582418	0.545580110
19 ⁷ / ₈	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 fixed-principal 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 8% 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 8%, 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 7% 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 7% 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:

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

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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_{April} 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:

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

where D = 30, t = 15
 Ref CPI_{April 1, 1996} = 154.40, the non-seasonally adjusted CPI-U for January 1996.

Ref CPI_{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:

$$\begin{aligned} \text{Ref CPI}_{\text{April 15, 1996}} &= 154.40 + \frac{14}{30} [154.90 - 154.40] \\ \text{Ref CPI}_{\text{April 15, 1996}} &= 154.633333333 \end{aligned}$$

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 CPI_{April 16, 1996} must first be calculated. Using the same values in the equation above except that t=16, the Ref CPI_{April 16, 1996} is 154.65000.

The Index Ratio for April 16, 1996 is:

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

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 man-

ner 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:

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

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

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

(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 3 $\frac{7}{8}$ % 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 $(166.2/164) \times \$100,000$, or \$101,341. This amount was multiplied by .03875/2, or .019375, resulting in a payment of \$1,963.48.

C. 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 fixed-principal 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 \$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 Fixed-Principal Securities—(i) Involving One Half-Year: A note paying interest at a rate of 6 $\frac{3}{4}$ %, 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 10 $\frac{3}{4}$ % 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).

II. FORMULAS FOR CONVERSION OF FIXED-PRINCIPAL 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 6 $\frac{1}{8}$ % 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.

$a_n = (1 - v^n) / (i/2) = v + v^2 + v^3 + \dots + v^n$ = present value of 1 per period for n periods

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

A = accrued interest.

A. *For fixed-principal securities with a regular first interest payment period:*

Formula:

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

Example:

For an 8 $\frac{3}{4}$ % 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:

$C = 8.75$.

$i = .0884$.

$r = 184$ (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.

$a_n = (1 - .0779403508) / .0442$, or 20.8610780353.

Resolution:

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

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 fixed-principal securities with a short first interest payment period:*

Formula:

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

Example:

For an 8 $\frac{1}{2}$ % 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.

$a_n = (1 - .8814740565) / .04295$, or 2.7596261590.

Resolution:

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

$$P[1 + (181/183)(.0859/2)] = (8.50/2)(181/183) + (8.50/2)(2.7596261590) + 100(.8814740565).$$

$$(1) P[1 + .042480601] = 4.2035519126 + 11.7284111757 + 88.14740565.$$

$$(2) P[1.042480601] = 104.0793687354.$$

$$(3) P = 104.0793687354 / 1.042480601.$$

$$(4) P = 99.838183.$$

C. *For fixed-principal securities with a long first interest payment period:*

Formula:

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

Example:

For an 8 $\frac{1}{2}$ % 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

$a_n = (1 - .658589) / .04265$, or 8.0049454082.

Resolution:

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

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 fixed-principal securities reopened during a regular interest period where the purchase price includes predetermined accrued interest.

(2) For new fixed-principal 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:

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

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:

$$C = 9.50.$$

$$i = .0954.$$

$$n = 19.$$

$$r = 167 \text{ (November 29, 1985, to May 15, 1986).}$$

$$s = 181 \text{ (November 15, 1985, to May 15, 1986).}$$

$$v^n = 1 / [(1 + .0954/2)]^{19}, \text{ or } .4125703996.$$

$$a_n = (1 - .4125703996) / .0477, \text{ or } 12.3150859630.$$

$$A = [(181 - 167) / 181](9.50/2), \text{ or } .367403.$$

Resolution:

$$(P+A)[1 + (r/s)(i/2)] = C/2 + (C/2)a_n + 100v^n \text{ or}$$

$$(P + .367403)[1 + (167/181)(.0954/2)] = (9.50/2) + (9.50/2)(12.3150859630) + 100(.4125703996).$$

$$(1) (P + .367403)[1 + .044010497] = 4.75 + 58.4966583243 + 41.25703996.$$

$$(2) (P + .367403)[1.044010497] = 104.5036982843.$$

$$(3) (P + .367403) = 104.5036982843 / 1.044010497.$$

$$(4) (P + .367403) = 100.098321.$$

$$(5) P = 100.098321 - .367403.$$

$$(6) P = 99.730918.$$

E. For fixed-principal securities reopened during the regular portion of a long first payment period:

Formula:

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

Where:

$$A = AI' + AI,$$

$$AI' = (r's'')(C/2),$$

$$AI = [(s-r) / s](C/2), \text{ and}$$

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:

$$C = 10.75.$$

$$i = .1047.$$

$$n = 39.$$

$$r = 103 \text{ (November 4, 1985, to February 15, 1986).}$$

$$s = 184 \text{ (August 15, 1985, to February 15, 1986).}$$

$$r' = 44 \text{ (July 2 to August 15, 1985).}$$

$$s'' = 181 \text{ (February 15 to August 15, 1985).}$$

$$v^n = 1 / [(1 + .1047 / 2)]^{39}, \text{ or } .1366947986.$$

$$a_n = (1 - .1366947986) / .05235, \text{ or } 16.4910258142.$$

$$AI' = (44 / 181)(10.75 / 2), \text{ or } 1.306630.$$

$$AI = [(184 - 103) / 184](10.75 / 2), \text{ or } 2.366168.$$

$$A = AI' + AI, \text{ or } 3.672798.$$

Resolution:

$$(P + A)[1 + (r/s)(i/2)] = (r's'')(C/2) + C/2 + (C/2)a_n + 100v^n \text{ or}$$

$$(P + 3.672798)[1 + (103/184)(.1047/2)] = (44/181)(10.75/2) + 10.75/2 + (10.75/2)(16.4910258142) + 100(.1366947986).$$

$$(1) (P + 3.672798)[1 + .02930462] = 1.3066298343 + 5.375 + 88.6392637512 + 13.6694798628.$$

$$(2) (P + 3.672798)[1.02930462] = 108.9903734482.$$

$$(3) (P + 3.672798) = 108.9903734482 / 1.02930462.$$

$$(4) (P + 3.672798) = 105.887384.$$

$$(5) P = 105.887384 - 3.672798.$$

$$(6) P = 102.214586.$$

F. For fixed-principal securities reopened during a short first payment period:

Formula:

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

Where:

$$A = [(r' - r)/s](C/2) \text{ and}$$

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:

$$C = 10.50.$$

$$i = .1053.$$

$$n = 15.$$

$$r = 92 \text{ (August 15, 1983, to November 15, 1983).}$$

$$s = 184 \text{ (May 15, 1983, to November 15, 1983).}$$

$$r' = 183 \text{ (May 16, 1983, to November 15, 1983).}$$

$v^n = 1/[1 + (.1053/2)]^{15}$, or .4631696332.
 $a_n = (1 - .4631696332) / .05265$, or 10.1962082956.
 $A = [(183 - 92) / 184](10.50 / 2)$, or 2.596467.

Resolution:

$$(P + A)[1 + (r/s)(i/2)] = (r/s)(C/2) + (C/2)a_n + 100v^n \text{ or}$$

$$(P + 2.596467)[1 + (92/184)(.1053/2)] = (183/184)(10.50/2) + (10.50/2)(10.1962082956) + 100(.4631696332).$$

(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 fixed-principal securities reopened during the fractional portion (initial short period) of a long first payment period:

Formula:

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

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 9 $\frac{3}{4}$ % 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.
 $a_n = (1 - .5635631040) / .04895$, or 8.9159733613.
 $A = [(61 - 30) / 183](9.75/2)$, or .825820.

Resolution:

$$(P + A)[1 + (r/s)(i/2)] = [(r/s)(C/2)]v + (C/2)a_n + 100v^n \text{ or}$$

$$(P + .825820)[1 + (30/183)(.0979/2)] = [(61/183)(9.75/2)](.9533342867) + (9.75/2)(8.9159733613) + 100(.5635631040).$$

(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; $P \times \text{Index Ratio}_{\text{Date}}$.

A = unadjusted accrued interest per \$100 original principal.

A_{adj} = inflation adjusted accrued interest; $A \times \text{Index Ratio}_{\text{Date}}$.

SA = settlement amount including accrued interest in current dollars per \$100 original principal; $P_{\text{adj}} + A_{\text{adj}}$.

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.

$a_n = (1 - v^n)/(i/2) = v + v^2 + v^3 + \dots + v^n$ = present value of 1 per period for n periods.

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

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

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

Index $\text{Ratio}_{\text{Date}} = \text{Ref } CPI_{\text{Date}} / \text{Ref } CPI_{\text{IssueDate}}$.

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

A. For inflation-indexed securities with a regular first interest payment period:
Formulas:

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

$$P_{adj} = P \times \text{Index Ratio}_{Date}$$

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

$$A_{adj} = A \times \text{Index Ratio}_{Date}$$

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

$$\text{Index Ratio}_{Date} = \text{Ref CPI}_{Date} / \text{Ref CPI}_{IssueDate}$$

Example:

We issued a 10-year inflation-indexed note on January 15, 1999. The note was issued at a discount to yield of 3.898% (real). The note bears a 3% 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 inter-

polative 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:

$$\text{Index Ratio}_{Date} = \text{Ref CPI}_{Date} / \text{Ref CPI}_{IssueDate} = 164/164 = 1.$$

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

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

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

$$a_n = (1 - v^n)/(i/2) = (1 - 0.692984572)/(0.03898/2) = 15.752459107.$$

Formula:

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

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

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

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

$$P = 99.811030.$$

$$P_{adj} = P \times \text{Index Ratio}_{Date}$$

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

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

$$SA = 99.811030 + 0 = 99.811030.$$

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

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

(2) For new inflation-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.

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:

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

$$P_{adj} = P \times \text{Index Ratio}_{Date}$$

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

$$A_{adj} = A \times \text{Index Ratio}_{Date}$$

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

$$\text{Index Ratio}_{Date} = \text{Ref CPI}_{Date} / \text{Ref CPI}_{IssueDate}$$

Example:

We issued a 3% 10-year inflation-indexed 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).

Ref CPI_{Date} = 163.29032.

Ref CPI_{IssueDate} = 161.55484.

Resolution:

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$$\begin{aligned} \text{Index Ratio}_{\text{Date}} &= \text{Ref CPI}_{\text{Date}}/\text{Ref CPI}_{\text{IssueDate}} = \\ &163.29032/161.55484 = 1.01074. \\ v^n &= 1/(1 + i/2)^n = 1/(1 + .0365/2)^{18} = 0.722138438. \end{aligned}$$

$$\begin{aligned} a_n \bar{\cdot} &= (1 - v^n)/(i/2) = (1 - 0.722138438)/(.0365/2) = \\ &15.225291068. \end{aligned}$$

Formula:

$$\begin{aligned} P &= \frac{(C/2) + (C/2)a_n \bar{\cdot} + 100v^n}{1 + (r/s)(i/2)} - [(s-r)/s](C/2) \\ P &= \frac{(3.625/2) + (3.625/2)(15.225291068) + 100(0.722138438)}{1 + (92/184)(0.0365/2)} - [(184 - 92)/184](3.625/2) \\ P &= \frac{1.8125 + 27.59584006 + 72.21384380}{1.009125} - (92/184)(1.8125) \\ P &= \frac{101.62218386}{1.009125} - 0.906250 \end{aligned}$$

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

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. 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 3% 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 3% 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).

V. 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:

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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) $d = [.04065433 \times 1.978021978]$.

(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 year following the issue date includes February 29, then y is 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) $i = [.004425 \times 18.25]$.

(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 year following the issue date includes February 29, then y is 366.

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

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

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

$$(3) i = (-.997260274 + 1.038221216) / .497260274.$$

$$(4) i = .040960942 / .497260274.$$

$$(5) i = .082373244 \text{ or}$$

$$(6) i = 8.237\%.$$

[69 FR 45202, July 28, 2004, as amended at 69 FR 52967, Aug. 30, 2004; 69 FR 53622, Sept. 2, 2004]

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 fixed-principal 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

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:

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 fixed-principal securities. In addition, Treasury inflation-protected securities may not be as widely traded or as well understood as Treasury fixed-principal 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 fixed-principal 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.

APPENDIX D TO PART 356—DESCRIPTION OF THE 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.

PART 357—REGULATIONS GOVERNING BOOK-ENTRY TREASURY BONDS, NOTES AND BILLS HELD IN LEGACY TREASURY DIRECT

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