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Historical Net Discount Rates—An Update Through 2011

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Introduction

The following eight tables are updated versions of the eight tables that were presented most recently by Ireland and Tucek [2011]. A history of the eight tables and their predecessors appears in Ireland [2011].

The original purpose of the eight tables was to provide forensic economists with values for net discount rates and the real interest rate that were varied and flexible, and that objective still underlies the current update. The eight tables provided should be understood as two sets of four tables each. Tables 1 and 5 provide basic data relied on by the subsequent tables. Table 1 includes data for the 91-day Treasury bill, 3-year and 10-year constant maturity Treasury notes, the corporate Aaa bond rate, and the high grade municipal bond rate. Table 1 also includes the annual percentage change in the Consumer Price Index (CPI) and in the Medical Consumer Price Index (MCPI). The data for the 91-day Treasury bill rate has been modified to reflect annual yield rather than a bank discount rate, as per the method explained by Fjeldsted [2000]. The period covered by Table 1 ranges from 1962 through 2011.

Table 5 repeats the interest rate data found in Table 1, but replaces data for the CPI and the MCPI with data for the average weekly earnings of all American workers and the total compensation series of the employer cost index (ECI). The period covered by Table 5 ranges from 1965 through 2011; data for the ECI begin in 1980.

Tables 2 and 6 provide a series of multi-year average growth rates for each variable for

periods ending in 2011. This results in up to a 50-year average for the five interest rates and for the CPI and MCPI variables, and up to a 47-year average for the two earnings growth measures. Table 2, for example, shows that the average rate of effective yields on 91-day Treasury bills from 1962 through 2011 was 5.52 percent and that the average rate of increase in the CPI over that same 50-year period was 4.12 percent. Table 3 provides calculations of the real interest rate based on comparing each of the interest rates with the growth rate in the CPI for each of fifty possible time periods ending in 2011. Table 4 provides the same comparisons with the growth rate in the MCPI for up to a 50-year period. Table 7 is analogous to Table 3: it is based on Table 5 and provides calculations of the net discount rate based on comparing each of the interest rates with the growth rate in the average weekly earnings series for the 47 possible periods from 1965 through 2011. Similarly, Table 8 provides calculations of the net discount rate based on comparing each of the interest rates with the annual growth rate in the ECI for the 32 possible periods from 1980 through 2011.

Note that the data in Tables 1 and 5 are presented in chronological order, with the earliest observations appearing in the first row of each table. In Tables 2 and 6, the first row is labeled “1 Year Average Rate” and the value corresponds to the average for the one-year period ending in 2011. Consequently, these are the same values that appear at the bottom of Tables 1 and 5, respectively. The rows labeled “2 Year Average Rate” contain the averages of the rates in the last two rows of Tables 1 and 5, for the years 2010 and 2011. Similarly, the rows labeled “3 Year Average Rate” contain the averages of the rates at the bottom of Tables 1 and 5 for the years 2009, 2010 and 2011. Tables 3 and 4 are derived from Table 2 and consequently start with the present and move further into the past as more years are included in the corresponding averages used in the calculation of the net rates. The same is true of the net discount rates appearing in Tables 7 and 8, which are based on the average rates in Table 6.

The CPI, average weekly earnings, and ECI growth rates are calculated based on the

underlying index or earnings values. As was true with the last update of the tables, the average interest and growth rates in Tables 2 and 6 are geometric averages.

Data Sources

With two exceptions, the primary data source for these tables is the *Economic Report of the President* (ERP). Specifically, all of the interest rate data come from Table B-73 in the 2012 ERP. The CPI and the Medical CPI come from Table B-60 in the 2012 ERP for 1968 on; the 2001 ERP is the source for prior years. The average weekly earnings series comes from Table B-47 in the 2011 and 2012 ERP's. The first exception has to do with the 2011 value of the average weekly earnings series. Because the 2012 ERP reported a preliminary value for 2011, the value used in these tables was downloaded using the Bureau of Labor Statistics' query tool found at <http://data.bls.gov/pdq/querytool.jsp?survey=ci>. The second exception has to do with the total compensation ECI series. For 2001 through 2010, the data came from Table B-48 in the 2012 ERP. For earlier years, the data were downloaded using the Bureau of Labor Statistics' query tool found at <http://data.bls.gov/pdq/querytool.jsp?survey=ec>. The reason for this is to give a consistent series for the data prior to 2001. This is the first year that the NAICS-based data are available; previously, the index was calculated on an SIC-basis.¹

Uses of the Tables

In addition to providing forensic economists with values for net discount rates and the real interest rate that were varied and flexible, these tables enable a forensic economist to counter claims that various net discount rates are justified by historical experience. For example, claims are made in some economic damage reports that purportedly justify total offset or more than offset net discount rates. These claims may rely on time periods or interest rates that the opposing economist does not regularly use. Consequently, the opposing economist may have difficulty demonstrating that such claims are inconsistent with actual history. Having tables that employ multiple discount rates, multiple projections of growth rates and multiple periods over

which projections are made provides a useful tool to counter such claims.

In particular, these tables continue to provide little support for employing total offset for anything but net rates based on the MCPI.² (See Table 4). For the past 16 years, one can find values close to total offset based on the 91-day Treasury bill for net discount rates based on average weekly earnings or the ECI. To a lesser extent, the same is true for net discount rates based on the 3-year Treasury rate and average weekly earnings or the ECI. For all other interest rate series presented in these tables, net discount rates based on average weekly earnings or the ECI do not support claims of total offset. (See Tables 7 and 8.)

Table 1. Annual Values for Various Interest Rates and Growth Rates in the CPI and the MCPI from 1962-2011

Year	3-month	3-year	10-year	Corp Aaa	Municipal	CPI Incr	MCPI Incr
1962	2.87	3.47	3.95	4.33	3.18	1.00	2.62
1963	3.27	3.67	4.00	4.26	3.23	1.32	2.55
1964	3.69	4.03	4.19	4.40	3.22	1.31	2.07
1965	4.11	4.22	4.28	4.49	3.27	1.61	2.44
1966	5.10	5.23	4.93	5.13	3.82	2.86	4.37
1967	4.50	5.03	5.07	5.51	3.98	3.09	7.22
1968	5.60	5.68	5.64	6.18	4.51	4.19	6.03
1969	7.07	7.02	6.67	7.03	5.81	5.46	6.69
1970	6.79	7.29	7.35	8.04	6.51	5.72	6.58
1971	4.53	5.66	6.16	7.39	5.70	4.38	6.18
1972	4.24	5.72	6.21	7.21	5.27	3.21	3.32
1973	7.47	6.96	6.85	7.44	5.18	6.22	4.02
1974	8.42	7.84	7.56	8.57	6.09	11.04	9.28
1975	6.15	7.50	7.99	8.83	6.89	9.13	12.03
1976	5.22	6.77	7.61	8.43	6.49	5.76	9.47
1977	5.53	6.68	7.42	8.02	5.56	6.50	9.62
1978	7.67	8.29	8.41	8.73	5.90	7.59	8.42
1979	10.87	9.70	9.43	9.63	6.39	11.35	9.22
1980	12.57	11.51	11.43	11.94	8.51	13.50	10.96
1981	15.58	14.46	13.92	14.17	11.23	10.32	10.68
1982	11.61	12.93	13.01	13.79	11.57	6.16	11.58
1983	9.25	10.45	11.10	12.04	9.47	3.21	8.76
1984	10.27	11.92	12.46	12.71	10.15	4.32	6.16
1985	7.95	9.64	10.62	11.37	9.18	3.56	6.27
1986	6.30	7.06	7.67	9.02	7.38	1.86	7.49
1987	6.12	7.68	8.39	9.38	7.73	3.65	6.64
1988	7.08	8.26	8.85	9.71	7.76	4.14	6.53
1989	8.67	8.55	8.49	9.26	7.24	4.82	7.72
1990	7.99	8.26	8.55	9.32	7.25	5.40	9.04
1991	5.69	6.82	7.86	8.77	6.89	4.21	8.72
1992	3.58	5.30	7.01	8.14	6.41	3.01	7.40
1993	3.12	4.44	5.87	7.22	5.63	2.99	5.94
1994	4.47	6.27	7.09	7.96	6.19	2.56	4.77
1995	5.79	6.25	6.57	7.59	5.95	2.83	4.50
1996	5.26	5.99	6.44	7.37	5.75	2.95	3.49
1997	5.31	6.10	6.35	7.26	5.55	2.29	2.80
1998	5.03	5.14	5.26	6.53	5.12	1.56	3.20
1999	4.87	5.49	5.65	7.04	5.43	2.21	3.51
2000	6.16	6.22	6.03	7.62	5.77	3.36	4.07
2001	3.57	4.09	5.02	7.08	5.19	2.85	4.60
2002	1.66	3.10	4.61	6.49	5.05	1.58	4.69
2003	1.03	2.10	4.01	5.67	4.73	2.28	4.03
2004	1.41	2.78	4.27	5.63	4.63	2.66	4.38
2005	3.27	3.93	4.29	5.24	4.29	3.39	4.22
2006	4.94	4.77	4.80	5.59	4.42	3.23	4.02
2007	4.60	4.35	4.63	5.56	4.42	2.85	4.42
2008	1.51	2.24	3.66	5.63	4.80	3.84	3.71
2009	0.16	1.43	3.26	5.31	4.64	-0.36	3.17
2010	0.14	1.11	3.22	4.94	4.16	1.64	3.41
2011	0.06	0.75	2.78	4.64	4.29	3.16	3.04

“3-month” refers to the 91-Day U.S. Treasury Bill, “3-year” refers to a constant maturity U.S. Treasury 3-year note, “10-year” refers to a constant maturity 10-year U.S. Treasury note, “Corp Aaa” refers to the Corporate Aaa rate, “Municipal” refers to the High Grade Municipal rate, “CPI Incr” refers to the annual increase in the Consumer Price Index, and “MCPI Incr” refers to the annual increase in the medical component of the CPI.

Table 2. Average Values for Various Interest Rates and Growth Rates in the CPI and the MCPI for the Number of Years Shown as Ending in 2011

Number of Years Ending in 2011	3-month	3-year	10-year	Corp Aaa	Municipal	CPI Incr	MCPI Incr
1 Year Average Rate	0.06	0.75	2.78	4.64	4.29	3.16	3.04
2 Year Average Rate	0.10	0.93	3.00	4.79	4.22	2.40	3.23
3 Year Average Rate	0.12	1.10	3.09	4.96	4.36	1.47	3.21
4 Year Average Rate	0.47	1.38	3.23	5.13	4.47	2.06	3.33
5 Year Average Rate	1.28	1.97	3.51	5.22	4.46	2.22	3.55
6 Year Average Rate	1.88	2.43	3.72	5.28	4.45	2.38	3.63
7 Year Average Rate	2.08	2.64	3.80	5.27	4.43	2.53	3.71
8 Year Average Rate	2.00	2.66	3.86	5.32	4.46	2.54	3.80
9 Year Average Rate	1.89	2.60	3.88	5.36	4.49	2.51	3.82
10 Year Average Rate	1.87	2.65	3.95	5.47	4.54	2.42	3.91
11 Year Average Rate	2.02	2.78	4.05	5.61	4.60	2.46	3.97
12 Year Average Rate	2.36	3.06	4.21	5.78	4.70	2.53	3.98
13 Year Average Rate	2.55	3.25	4.32	5.88	4.75	2.51	3.94
14 Year Average Rate	2.72	3.38	4.39	5.92	4.78	2.44	3.89
15 Year Average Rate	2.89	3.56	4.52	6.01	4.83	2.43	3.82
16 Year Average Rate	3.04	3.71	4.64	6.10	4.89	2.46	3.80
17 Year Average Rate	3.20	3.86	4.75	6.18	4.95	2.48	3.84
18 Year Average Rate	3.27	3.99	4.88	6.28	5.02	2.49	3.89
19 Year Average Rate	3.26	4.01	4.93	6.33	5.05	2.52	4.00
20 Year Average Rate	3.28	4.08	5.03	6.42	5.12	2.54	4.16
21 Year Average Rate	3.39	4.21	5.17	6.53	5.20	2.62	4.38
22 Year Average Rate	3.60	4.39	5.32	6.66	5.29	2.74	4.58
23 Year Average Rate	3.81	4.56	5.45	6.77	5.38	2.83	4.72
24 Year Average Rate	3.95	4.72	5.59	6.89	5.48	2.89	4.79
25 Year Average Rate	4.03	4.83	5.70	6.99	5.57	2.92	4.87
26 Year Average Rate	4.12	4.92	5.78	7.07	5.64	2.88	4.97
27 Year Average Rate	4.26	5.09	5.95	7.22	5.76	2.90	5.01
28 Year Average Rate	4.47	5.33	6.18	7.41	5.92	2.95	5.06
29 Year Average Rate	4.63	5.50	6.35	7.57	6.04	2.96	5.18
30 Year Average Rate	4.85	5.74	6.56	7.77	6.22	3.07	5.39
31 Year Average Rate	5.18	6.01	6.79	7.97	6.38	3.29	5.56
32 Year Average Rate	5.41	6.18	6.93	8.09	6.44	3.60	5.72
33 Year Average Rate	5.57	6.28	7.01	8.14	6.44	3.82	5.82
34 Year Average Rate	5.63	6.34	7.05	8.16	6.42	3.93	5.90
35 Year Average Rate	5.63	6.35	7.06	8.15	6.40	4.01	6.00
36 Year Average Rate	5.62	6.36	7.07	8.16	6.40	4.05	6.10
37 Year Average Rate	5.63	6.39	7.10	8.18	6.42	4.19	6.26
38 Year Average Rate	5.70	6.43	7.11	8.19	6.41	4.36	6.33
39 Year Average Rate	5.75	6.44	7.10	8.17	6.38	4.41	6.27
40 Year Average Rate	5.71	6.43	7.08	8.15	6.35	4.38	6.20
41 Year Average Rate	5.68	6.41	7.06	8.13	6.33	4.38	6.20
42 Year Average Rate	5.71	6.43	7.07	8.13	6.34	4.41	6.21
43 Year Average Rate	5.74	6.44	7.06	8.10	6.32	4.44	6.22
44 Year Average Rate	5.74	6.42	7.02	8.06	6.28	4.43	6.21
45 Year Average Rate	5.71	6.39	6.98	8.00	6.23	4.40	6.24
46 Year Average Rate	5.69	6.37	6.94	7.94	6.18	4.37	6.20
47 Year Average Rate	5.66	6.32	6.88	7.86	6.11	4.31	6.11
48 Year Average Rate	5.62	6.27	6.82	7.79	6.05	4.24	6.03
49 Year Average Rate	5.57	6.22	6.76	7.71	6.00	4.18	5.96
50 Year Average Rate	5.52	6.16	6.71	7.65	5.94	4.12	5.89

Table 3--Real Interest Rates Based on Various Interest Rates and the Growth Rate in the CPI for Numbers of Years Ending in 2011

Number of Years Ending in 2011	3-month	3-year	10-year	Corp Aaa	Municipal	CPI Incr	MCPI Incr
1 Year Real Discount Rate	-3.01	-2.34	-0.37	1.43	1.10	0.00	-0.12
2 Year Real Discount Rate	-2.25	-1.44	0.59	2.33	1.78	0.00	0.81
3 Year Real Discount Rate	-1.33	-0.36	1.60	3.44	2.85	0.00	1.71
4 Year Real Discount Rate	-1.56	-0.67	1.15	3.01	2.36	0.00	1.24
5 Year Real Discount Rate	-0.92	-0.24	1.26	2.93	2.19	0.00	1.30
6 Year Real Discount Rate	-0.49	0.05	1.31	2.83	2.02	0.00	1.22
7 Year Real Discount Rate	-0.44	0.11	1.24	2.67	1.85	0.00	1.15
8 Year Real Discount Rate	-0.53	0.12	1.29	2.71	1.87	0.00	1.23
9 Year Real Discount Rate	-0.60	0.09	1.34	2.78	1.93	0.00	1.28
10 Year Real Discount Rate	-0.54	0.22	1.49	2.98	2.07	0.00	1.45
11 Year Real Discount Rate	-0.43	0.31	1.55	3.07	2.09	0.00	1.47
12 Year Real Discount Rate	-0.17	0.52	1.64	3.17	2.12	0.00	1.41
13 Year Real Discount Rate	0.04	0.72	1.77	3.29	2.19	0.00	1.39
14 Year Real Discount Rate	0.27	0.92	1.90	3.40	2.28	0.00	1.42
15 Year Real Discount Rate	0.45	1.10	2.04	3.50	2.34	0.00	1.36
16 Year Real Discount Rate	0.57	1.22	2.13	3.55	2.37	0.00	1.31
17 Year Real Discount Rate	0.70	1.35	2.22	3.61	2.41	0.00	1.33
18 Year Real Discount Rate	0.76	1.46	2.33	3.70	2.47	0.00	1.37
19 Year Real Discount Rate	0.72	1.45	2.35	3.72	2.47	0.00	1.44
20 Year Real Discount Rate	0.72	1.50	2.43	3.78	2.52	0.00	1.58
21 Year Real Discount Rate	0.75	1.55	2.48	3.81	2.51	0.00	1.72
22 Year Real Discount Rate	0.84	1.61	2.51	3.82	2.48	0.00	1.79
23 Year Real Discount Rate	0.95	1.68	2.55	3.83	2.48	0.00	1.84
24 Year Real Discount Rate	1.03	1.78	2.62	3.89	2.52	0.00	1.85
25 Year Real Discount Rate	1.08	1.86	2.70	3.95	2.57	0.00	1.89
26 Year Real Discount Rate	1.21	1.98	2.82	4.07	2.68	0.00	2.03
27 Year Real Discount Rate	1.32	2.13	2.96	4.20	2.78	0.00	2.05
28 Year Real Discount Rate	1.48	2.31	3.14	4.33	2.88	0.00	2.05
29 Year Real Discount Rate	1.62	2.47	3.29	4.48	2.99	0.00	2.16
30 Year Real Discount Rate	1.73	2.59	3.39	4.56	3.06	0.00	2.25
31 Year Real Discount Rate	1.83	2.63	3.39	4.53	2.99	0.00	2.20
32 Year Real Discount Rate	1.75	2.49	3.21	4.33	2.74	0.00	2.05
33 Year Real Discount Rate	1.69	2.37	3.07	4.16	2.52	0.00	1.93
34 Year Real Discount Rate	1.64	2.32	3.00	4.07	2.40	0.00	1.90
35 Year Real Discount Rate	1.56	2.25	2.93	3.98	2.30	0.00	1.91
36 Year Real Discount Rate	1.51	2.22	2.90	3.95	2.26	0.00	1.97
37 Year Real Discount Rate	1.38	2.11	2.79	3.83	2.14	0.00	1.99
38 Year Real Discount Rate	1.28	1.98	2.64	3.67	1.96	0.00	1.89
39 Year Real Discount Rate	1.28	1.94	2.58	3.60	1.89	0.00	1.78
40 Year Real Discount Rate	1.27	1.96	2.59	3.61	1.89	0.00	1.74
41 Year Real Discount Rate	1.25	1.94	2.57	3.59	1.87	0.00	1.74
42 Year Real Discount Rate	1.25	1.93	2.55	3.56	1.85	0.00	1.72
43 Year Real Discount Rate	1.24	1.91	2.51	3.50	1.80	0.00	1.70
44 Year Real Discount Rate	1.25	1.91	2.48	3.48	1.77	0.00	1.70
45 Year Real Discount Rate	1.25	1.91	2.47	3.45	1.75	0.00	1.76
46 Year Real Discount Rate	1.26	1.92	2.46	3.42	1.73	0.00	1.75
47 Year Real Discount Rate	1.29	1.93	2.46	3.40	1.73	0.00	1.73
48 Year Real Discount Rate	1.32	1.95	2.48	3.41	1.74	0.00	1.72
49 Year Real Discount Rate	1.33	1.96	2.48	3.39	1.75	0.00	1.71
50 Year Real Discount Rate	1.34	1.96	2.49	3.39	1.75	0.00	1.70

Table 4--Net Medical Discount Rates based on Various Interest Rates and the Growth Rate in the MCPI for Numbers of Years Ending in 2011

Number of Years Ending in 2011	3-month	3-year	10-year	Corp Aaa	Municipal	CPI Incr	MCPI Incr
1 Year Medical Discount Rate	-2.89	-2.22	-0.25	1.55	1.21	0.12	0.00
2 Year Medical Discount Rate	-3.03	-2.23	-0.22	1.51	0.96	-0.80	0.00
3 Year Medical Discount Rate	-2.99	-2.04	-0.12	1.70	1.11	-1.69	0.00
4 Year Medical Discount Rate	-2.77	-1.89	-0.10	1.74	1.10	-1.23	0.00
5 Year Medical Discount Rate	-2.19	-1.53	-0.04	1.61	0.88	-1.28	0.00
6 Year Medical Discount Rate	-1.69	-1.16	0.09	1.59	0.79	-1.21	0.00
7 Year Medical Discount Rate	-1.57	-1.03	0.09	1.50	0.69	-1.14	0.00
8 Year Medical Discount Rate	-1.73	-1.10	0.06	1.46	0.64	-1.21	0.00
9 Year Medical Discount Rate	-1.86	-1.18	0.06	1.48	0.65	-1.26	0.00
10 Year Medical Discount Rate	-1.96	-1.21	0.04	1.50	0.61	-1.43	0.00
11 Year Medical Discount Rate	-1.88	-1.14	0.08	1.58	0.61	-1.45	0.00
12 Year Medical Discount Rate	-1.56	-0.88	0.22	1.73	0.69	-1.39	0.00
13 Year Medical Discount Rate	-1.34	-0.66	0.37	1.87	0.78	-1.38	0.00
14 Year Medical Discount Rate	-1.13	-0.49	0.48	1.95	0.86	-1.40	0.00
15 Year Medical Discount Rate	-0.90	-0.25	0.67	2.11	0.97	-1.34	0.00
16 Year Medical Discount Rate	-0.73	-0.09	0.81	2.22	1.05	-1.29	0.00
17 Year Medical Discount Rate	-0.62	0.02	0.88	2.25	1.07	-1.31	0.00
18 Year Medical Discount Rate	-0.60	0.10	0.95	2.30	1.09	-1.35	0.00
19 Year Medical Discount Rate	-0.71	0.01	0.89	2.24	1.01	-1.42	0.00
20 Year Medical Discount Rate	-0.84	-0.08	0.84	2.17	0.92	-1.56	0.00
21 Year Medical Discount Rate	-0.95	-0.16	0.76	2.06	0.79	-1.69	0.00
22 Year Medical Discount Rate	-0.94	-0.18	0.71	1.99	0.68	-1.76	0.00
23 Year Medical Discount Rate	-0.87	-0.15	0.70	1.96	0.63	-1.80	0.00
24 Year Medical Discount Rate	-0.80	-0.07	0.76	2.00	0.66	-1.81	0.00
25 Year Medical Discount Rate	-0.80	-0.04	0.79	2.02	0.67	-1.86	0.00
26 Year Medical Discount Rate	-0.81	-0.05	0.77	2.00	0.64	-1.99	0.00
27 Year Medical Discount Rate	-0.71	0.08	0.90	2.10	0.71	-2.01	0.00
28 Year Medical Discount Rate	-0.56	0.26	1.07	2.24	0.82	-2.01	0.00
29 Year Medical Discount Rate	-0.52	0.30	1.11	2.27	0.82	-2.11	0.00
30 Year Medical Discount Rate	-0.51	0.33	1.11	2.26	0.79	-2.20	0.00
31 Year Medical Discount Rate	-0.36	0.43	1.17	2.28	0.78	-2.15	0.00
32 Year Medical Discount Rate	-0.29	0.44	1.14	2.24	0.68	-2.01	0.00
33 Year Medical Discount Rate	-0.24	0.43	1.12	2.19	0.59	-1.89	0.00
34 Year Medical Discount Rate	-0.25	0.42	1.09	2.13	0.49	-1.86	0.00
35 Year Medical Discount Rate	-0.35	0.33	1.00	2.03	0.38	-1.88	0.00
36 Year Medical Discount Rate	-0.45	0.25	0.91	1.94	0.28	-1.93	0.00
37 Year Medical Discount Rate	-0.59	0.12	0.79	1.81	0.15	-1.95	0.00
38 Year Medical Discount Rate	-0.59	0.09	0.73	1.75	0.08	-1.85	0.00
39 Year Medical Discount Rate	-0.49	0.16	0.78	1.79	0.10	-1.75	0.00
40 Year Medical Discount Rate	-0.46	0.22	0.83	1.84	0.14	-1.71	0.00
41 Year Medical Discount Rate	-0.49	0.20	0.81	1.82	0.12	-1.71	0.00
42 Year Medical Discount Rate	-0.47	0.21	0.81	1.81	0.12	-1.69	0.00
43 Year Medical Discount Rate	-0.45	0.21	0.79	1.77	0.09	-1.68	0.00
44 Year Medical Discount Rate	-0.44	0.20	0.76	1.74	0.07	-1.68	0.00
45 Year Medical Discount Rate	-0.50	0.14	0.70	1.66	-0.01	-1.73	0.00
46 Year Medical Discount Rate	-0.48	0.16	0.70	1.64	-0.02	-1.72	0.00
47 Year Medical Discount Rate	-0.42	0.20	0.73	1.65	0.00	-1.70	0.00
48 Year Medical Discount Rate	-0.39	0.23	0.75	1.66	0.02	-1.69	0.00
49 Year Medical Discount Rate	-0.37	0.25	0.76	1.65	0.04	-1.68	0.00
50 Year Medical Discount Rate	-0.35	0.25	0.77	1.66	0.05	-1.67	0.00

Net Discount Rate calculated as $[(1 + i)/(1+g) - 1]$, where i is the interest rate being used and g is the rate of increase in the medical component of the CPI.

Table 5--Annual Values for Various Interest Rates and Growth Rates in the Average Weekly Earnings and the Total Compensation Series of the Employer Cost Index from 1965-2011

Year	3-month	3-year	10-year	Corp Aaa	Municipal	Av.Wk.%	ECI %
1965	4.11	4.22	4.28	4.49	3.27	4.22	n.a
1966	5.10	5.23	4.93	5.13	3.82	3.54	n.a
1967	4.50	5.03	5.07	5.51	3.98	2.77	n.a
1968	5.60	5.68	5.64	6.18	4.51	5.40	n.a
1969	7.07	7.02	6.67	7.03	5.81	6.06	n.a
1970	6.79	7.29	7.35	8.04	6.51	4.18	n.a
1971	4.53	5.66	6.16	7.39	5.70	6.18	n.a
1972	4.24	5.72	6.21	7.21	5.27	7.73	n.a
1973	7.47	6.96	6.85	7.44	5.18	6.16	n.a
1974	8.42	7.84	7.56	8.57	6.09	5.55	n.a
1975	6.15	7.50	7.99	8.83	6.89	5.60	n.a
1976	5.22	6.77	7.61	8.43	6.49	7.28	n.a
1977	5.53	6.68	7.42	8.02	5.56	6.91	n.a
1978	7.67	8.29	8.41	8.73	5.90	7.78	n.a
1979	10.87	9.70	9.43	9.63	6.39	7.22	n.a
1980	12.57	11.51	11.43	11.94	8.51	6.83	9.45
1981	15.58	14.46	13.92	14.17	11.23	8.61	10.03
1982	11.61	12.93	13.01	13.79	11.57	4.28	6.33
1983	9.25	10.45	11.10	12.04	9.47	4.79	5.71
1984	10.27	11.92	12.46	12.71	10.15	4.13	4.95
1985	7.95	9.64	10.62	11.37	9.18	2.36	3.86
1986	6.30	7.06	7.67	9.02	7.38	1.59	3.10
1987	6.12	7.68	8.39	9.38	7.73	2.35	3.41
1988	7.08	8.26	8.85	9.71	7.76	2.98	4.84
1989	8.67	8.55	8.49	9.26	7.24	3.51	4.81
1990	7.99	8.26	8.55	9.32	7.25	3.45	4.59
1991	5.69	6.82	7.86	8.77	6.89	2.50	4.38
1992	3.58	5.30	7.01	8.14	6.41	2.72	3.55
1993	3.12	4.44	5.87	7.22	5.63	2.89	3.59
1994	4.47	6.27	7.09	7.96	6.19	3.25	3.16
1995	5.79	6.25	6.57	7.59	5.95	2.26	2.48
1996	5.26	5.99	6.44	7.37	5.75	3.30	3.13
1997	5.31	6.10	6.35	7.26	5.55	4.50	3.45
1998	5.03	5.14	5.26	6.53	5.12	3.87	3.47
1999	4.87	5.49	5.65	7.04	5.43	3.25	3.48
2000	6.16	6.22	6.03	7.62	5.77	3.86	4.24
2001	3.57	4.09	5.02	7.08	5.19	2.66	4.19
2002	1.66	3.10	4.61	6.49	5.05	2.62	3.09
2003	1.03	2.10	4.01	5.67	4.73	2.23	4.00
2004	1.41	2.78	4.27	5.63	4.63	2.13	3.85
2005	3.27	3.93	4.29	5.24	4.29	2.88	2.88
2006	4.94	4.77	4.80	5.59	4.42	4.32	3.20
2007	4.60	4.35	4.63	5.56	4.42	3.90	3.00
2008	1.51	2.24	3.66	5.63	4.80	3.04	2.45
2009	0.16	1.43	3.26	5.31	4.64	1.52	1.19
2010	0.14	1.11	3.22	4.94	4.16	3.20	2.09
2011	0.06	0.75	2.78	4.64	4.29	2.55	2.22

"Av. Wk. %" is the percent increase in the average weekly earnings for private nonagricultural and nonsupervisory workers. "ECI %" is the percent increase in the total compensation series of the Employer Cost Index. The remaining column headings are defined in the note to Table 1.

Table 6--Average Rates for Various Interest Rates, Growth Rates in the Average Weekly Earnings, and Total Compensation Series in the Employer Cost Index for Number of Years Shown as Ending in 2011

Number of Years Ending in 2011	3-month	3-year	10-year	Corp Aaa	Municipal	Av.Wk.%	ECI %
1 Year Average Rate	0.06	0.75	2.78	4.64	4.29	2.55	2.22
2 Year Average Rate	0.10	0.93	3.00	4.79	4.22	2.87	2.15
3 Year Average Rate	0.12	1.10	3.09	4.96	4.36	2.42	1.83
4 Year Average Rate	0.47	1.38	3.23	5.13	4.47	2.57	1.99
5 Year Average Rate	1.28	1.97	3.51	5.22	4.46	2.84	2.19
6 Year Average Rate	1.88	2.43	3.72	5.28	4.45	3.08	2.36
7 Year Average Rate	2.08	2.64	3.80	5.27	4.43	3.06	2.43
8 Year Average Rate	2.00	2.66	3.86	5.32	4.46	2.94	2.61
9 Year Average Rate	1.89	2.60	3.88	5.36	4.49	2.86	2.76
10 Year Average Rate	1.87	2.65	3.95	5.47	4.54	2.84	2.79
11 Year Average Rate	2.02	2.78	4.05	5.61	4.60	2.82	2.92
12 Year Average Rate	2.36	3.06	4.21	5.78	4.70	2.91	3.03
13 Year Average Rate	2.55	3.25	4.32	5.88	4.75	2.93	3.06
14 Year Average Rate	2.72	3.38	4.39	5.92	4.78	3.00	3.09
15 Year Average Rate	2.89	3.56	4.52	6.01	4.83	3.10	3.12
16 Year Average Rate	3.04	3.71	4.64	6.10	4.89	3.11	3.12
17 Year Average Rate	3.20	3.86	4.75	6.18	4.95	3.06	3.08
18 Year Average Rate	3.27	3.99	4.88	6.28	5.02	3.07	3.09
19 Year Average Rate	3.26	4.01	4.93	6.33	5.05	3.06	3.11
20 Year Average Rate	3.28	4.08	5.03	6.42	5.12	3.04	3.13
21 Year Average Rate	3.39	4.21	5.17	6.53	5.20	3.02	3.19
22 Year Average Rate	3.60	4.39	5.32	6.66	5.29	3.04	3.26
23 Year Average Rate	3.81	4.56	5.45	6.77	5.38	3.06	3.32
24 Year Average Rate	3.95	4.72	5.59	6.89	5.48	3.06	3.39
25 Year Average Rate	4.03	4.83	5.70	6.99	5.57	3.03	3.39
26 Year Average Rate	4.12	4.92	5.78	7.07	5.64	2.97	3.38
27 Year Average Rate	4.26	5.09	5.95	7.22	5.76	2.95	3.39
28 Year Average Rate	4.47	5.33	6.18	7.41	5.92	2.99	3.45
29 Year Average Rate	4.63	5.50	6.35	7.57	6.04	3.05	3.53
30 Year Average Rate	4.85	5.74	6.56	7.77	6.22	3.09	3.62
31 Year Average Rate	5.18	6.01	6.79	7.97	6.38	3.27	3.82
32 Year Average Rate	5.41	6.18	6.93	8.09	6.44	3.38	3.99
33 Year Average Rate	5.57	6.28	7.01	8.14	6.44	3.49	n.a
34 Year Average Rate	5.63	6.34	7.05	8.16	6.42	3.61	n.a
35 Year Average Rate	5.63	6.35	7.06	8.15	6.40	3.71	n.a
36 Year Average Rate	5.62	6.36	7.07	8.16	6.40	3.80	n.a
37 Year Average Rate	5.63	6.39	7.10	8.18	6.42	3.85	n.a
38 Year Average Rate	5.70	6.43	7.11	8.19	6.41	3.90	n.a
39 Year Average Rate	5.75	6.44	7.10	8.17	6.38	3.95	n.a
40 Year Average Rate	5.71	6.43	7.08	8.15	6.35	4.05	n.a
41 Year Average Rate	5.68	6.41	7.06	8.13	6.33	4.10	n.a
42 Year Average Rate	5.71	6.43	7.07	8.13	6.34	4.10	n.a
43 Year Average Rate	5.74	6.44	7.06	8.10	6.32	4.15	n.a
44 Year Average Rate	5.74	6.42	7.02	8.06	6.28	4.17	n.a
45 Year Average Rate	5.71	6.39	6.98	8.00	6.23	4.14	n.a
46 Year Average Rate	5.69	6.37	6.94	7.94	6.18	4.13	n.a
47 Year Average Rate	5.66	6.32	6.88	7.86	6.11	4.13	n.a

Table 7--Net Discount Rates Based on Average Weekly Earnings of American Workers Compared with Various Interest Rates for the Number of Years Ending in 2011

Number of Years Ending in 2011	3-month	3-year	10-year	Corp Aaa	Municipal	Av.Wk.%	ECI %
1 Year Net Discount Rate	-2.43	-1.76	0.22	2.04	1.70	0.00	-0.32
2 Year Net Discount Rate	-2.69	-1.89	0.13	1.87	1.31	0.00	-0.70
3 Year Net Discount Rate	-2.25	-1.29	0.65	2.48	1.89	0.00	-0.58
4 Year Net Discount Rate	-2.05	-1.16	0.64	2.50	1.85	0.00	-0.57
5 Year Net Discount Rate	-1.52	-0.85	0.65	2.31	1.58	0.00	-0.63
6 Year Net Discount Rate	-1.16	-0.63	0.62	2.13	1.33	0.00	-0.70
7 Year Net Discount Rate	-0.95	-0.41	0.72	2.14	1.33	0.00	-0.61
8 Year Net Discount Rate	-0.91	-0.27	0.89	2.31	1.48	0.00	-0.32
9 Year Net Discount Rate	-0.94	-0.25	0.99	2.43	1.58	0.00	-0.10
10 Year Net Discount Rate	-0.94	-0.18	1.08	2.56	1.65	0.00	-0.05
11 Year Net Discount Rate	-0.78	-0.04	1.20	2.71	1.73	0.00	0.10
12 Year Net Discount Rate	-0.53	0.15	1.26	2.79	1.74	0.00	0.12
13 Year Net Discount Rate	-0.37	0.31	1.35	2.87	1.77	0.00	0.13
14 Year Net Discount Rate	-0.27	0.37	1.35	2.83	1.73	0.00	0.09
15 Year Net Discount Rate	-0.20	0.45	1.38	2.82	1.68	0.00	0.02
16 Year Net Discount Rate	-0.07	0.58	1.48	2.90	1.73	0.00	0.01
17 Year Net Discount Rate	0.14	0.78	1.64	3.03	1.83	0.00	0.02
18 Year Net Discount Rate	0.19	0.89	1.76	3.11	1.89	0.00	0.02
19 Year Net Discount Rate	0.19	0.92	1.81	3.17	1.93	0.00	0.05
20 Year Net Discount Rate	0.23	1.01	1.93	3.28	2.02	0.00	0.09
21 Year Net Discount Rate	0.36	1.16	2.09	3.41	2.12	0.00	0.17
22 Year Net Discount Rate	0.54	1.31	2.21	3.51	2.18	0.00	0.21
23 Year Net Discount Rate	0.73	1.46	2.32	3.60	2.25	0.00	0.25
24 Year Net Discount Rate	0.86	1.61	2.45	3.72	2.35	0.00	0.32
25 Year Net Discount Rate	0.97	1.75	2.59	3.84	2.47	0.00	0.35
26 Year Net Discount Rate	1.12	1.89	2.73	3.98	2.59	0.00	0.40
27 Year Net Discount Rate	1.27	2.08	2.91	4.15	2.73	0.00	0.43
28 Year Net Discount Rate	1.44	2.27	3.10	4.29	2.84	0.00	0.45
29 Year Net Discount Rate	1.53	2.38	3.20	4.39	2.90	0.00	0.47
30 Year Net Discount Rate	1.71	2.57	3.37	4.54	3.04	0.00	0.51
31 Year Net Discount Rate	1.85	2.65	3.41	4.55	3.01	0.00	0.53
32 Year Net Discount Rate	1.96	2.71	3.43	4.56	2.96	0.00	0.59
33 Year Net Discount Rate	2.01	2.70	3.40	4.49	2.85	0.00	n.a
34 Year Net Discount Rate	1.95	2.63	3.32	4.39	2.71	0.00	n.a
35 Year Net Discount Rate	1.85	2.55	3.23	4.28	2.59	0.00	n.a
36 Year Net Discount Rate	1.75	2.47	3.15	4.20	2.50	0.00	n.a
37 Year Net Discount Rate	1.71	2.45	3.13	4.17	2.47	0.00	n.a
38 Year Net Discount Rate	1.73	2.44	3.09	4.13	2.42	0.00	n.a
39 Year Net Discount Rate	1.73	2.40	3.03	4.06	2.34	0.00	n.a
40 Year Net Discount Rate	1.60	2.29	2.91	3.94	2.21	0.00	n.a
41 Year Net Discount Rate	1.52	2.22	2.84	3.87	2.14	0.00	n.a
42 Year Net Discount Rate	1.55	2.24	2.85	3.87	2.15	0.00	n.a
43 Year Net Discount Rate	1.53	2.20	2.79	3.79	2.08	0.00	n.a
44 Year Net Discount Rate	1.51	2.16	2.74	3.73	2.03	0.00	n.a
45 Year Net Discount Rate	1.51	2.16	2.73	3.71	2.01	0.00	n.a
46 Year Net Discount Rate	1.50	2.15	2.70	3.66	1.97	0.00	n.a
47 Year Net Discount Rate	1.47	2.10	2.64	3.58	1.90	0.00	n.a

Net Discount Rate calculated as $[(1 + i)/(1+g) - 1]$, where i is the interest rate being used and g is the rate of increase in Average Weekly Earnings.

Table 8--Net Discount Rates Based on the Total Compensation Series of the Employer Cost Index Compared with Various Interest rates for the Number of Years Ending in 2011

Number of Years Ending in 2011	3-month	3-year	10-year	Corp Aaa	Municipal	Av.Wk.%	ECI %
1 Year Net Discount Rate	-2.11	-1.44	0.55	2.37	2.03	0.32	0.00
2 Year Net Discount Rate	-2.01	-1.19	0.83	2.58	2.03	0.70	0.00
3 Year Net Discount Rate	-1.68	-0.72	1.24	3.07	2.48	0.58	0.00
4 Year Net Discount Rate	-1.49	-0.60	1.22	3.08	2.43	0.57	0.00
5 Year Net Discount Rate	-0.89	-0.22	1.29	2.97	2.22	0.64	0.00
6 Year Net Discount Rate	-0.47	0.07	1.33	2.85	2.04	0.70	0.00
7 Year Net Discount Rate	-0.34	0.21	1.34	2.77	1.95	0.62	0.00
8 Year Net Discount Rate	-0.59	0.05	1.22	2.64	1.80	0.32	0.00
9 Year Net Discount Rate	-0.85	-0.16	1.09	2.53	1.68	0.10	0.00
10 Year Net Discount Rate	-0.90	-0.14	1.13	2.61	1.70	0.05	0.00
11 Year Net Discount Rate	-0.87	-0.14	1.10	2.61	1.63	-0.10	0.00
12 Year Net Discount Rate	-0.65	0.03	1.15	2.67	1.62	-0.12	0.00
13 Year Net Discount Rate	-0.49	0.18	1.22	2.74	1.64	-0.13	0.00
14 Year Net Discount Rate	-0.36	0.28	1.26	2.75	1.64	-0.09	0.00
15 Year Net Discount Rate	-0.22	0.43	1.36	2.80	1.66	-0.02	0.00
16 Year Net Discount Rate	-0.08	0.57	1.47	2.89	1.72	-0.01	0.00
17 Year Net Discount Rate	0.12	0.76	1.62	3.01	1.81	-0.02	0.00
18 Year Net Discount Rate	0.17	0.87	1.74	3.09	1.87	-0.02	0.00
19 Year Net Discount Rate	0.15	0.87	1.77	3.12	1.88	-0.05	0.00
20 Year Net Discount Rate	0.15	0.92	1.84	3.19	1.93	-0.09	0.00
21 Year Net Discount Rate	0.19	0.99	1.92	3.24	1.95	-0.16	0.00
22 Year Net Discount Rate	0.33	1.09	1.99	3.29	1.97	-0.21	0.00
23 Year Net Discount Rate	0.47	1.20	2.06	3.34	1.99	-0.25	0.00
24 Year Net Discount Rate	0.54	1.29	2.13	3.39	2.02	-0.32	0.00
25 Year Net Discount Rate	0.62	1.39	2.23	3.48	2.11	-0.35	0.00
26 Year Net Discount Rate	0.72	1.49	2.32	3.57	2.19	-0.40	0.00
27 Year Net Discount Rate	0.84	1.64	2.48	3.70	2.29	-0.43	0.00
28 Year Net Discount Rate	0.99	1.82	2.64	3.83	2.39	-0.44	0.00
29 Year Net Discount Rate	1.06	1.90	2.72	3.90	2.42	-0.46	0.00
30 Year Net Discount Rate	1.19	2.05	2.84	4.01	2.51	-0.51	0.00
31 Year Net Discount Rate	1.31	2.11	2.86	4.00	2.47	-0.53	0.00
32 Year Net Discount Rate	1.37	2.11	2.83	3.94	2.36	-0.59	0.00

Net Discount Rate calculated as $[(1 + i)/(1+g) - 1]$, where i is the interest rate being used and g is the rate of increase in the total compensation series of the Employer Cost Index.

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Endnotes

¹ "NAICS" stands for "North American Industry Classification System"; "SIC" stands for "Standard Industrial Classification (system)." In Table 5, 2002 is the first year that a percent change for the NAICS-based series is reported.

2. The MCPI should not generally be used in calculating the costs of life care plans since many elements in those plans do not increase in tandem with hospitalizations, pharmaceuticals and skilled medical care.