

Data Points

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This is the eighth in a series of features on “Data Points” in the Journal of Legal Economics. This series focuses on empirical data, Internet sites, computer software, and other such resources useful in the practice of forensic economics. If you have an idea for a topic or paper submission relevant to the “Data Points” section, please contact David Tucek (david.tucek@valueeconomics.com).

Historical Net Discount Rates—An Update Through 2010

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I. Introduction

The following eight tables are updated versions of the eight tables that were presented most recently by Ireland and Tucek (2010). These tables had their earliest genesis in Ireland’s 1999 publication of two basic tables containing annual figures for six interest rates and for annual growth in average weekly earnings, the total compensation series of the employer cost index (ECI), the Consumer Price Index (CPI) and the Medical Consumer Price Index (MCPI) (Ireland 1999). Those early tables correspond to Tables 1 and 4 of the current set of eight tables. A history of the eight tables and their predecessors appears in Ireland (2011).

II. Explanation of the Tables

The original purpose of the eight tables was to provide forensic economists with varied and flexible values for net discount rates and the real interest rate, and that objective still underlies the current update. The eight tables provided should be understood as two sets of four tables each.

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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 CPI and in the MCPI. The data for the 91-day Treasury bill rate have been modified to reflect annual yield rather than bank discount rate as per the method explained by Fjeldsted (2000). The period covered by Table 1 ranges from 1961 through 2010.

Table 5 repeats the interest rate data found in Table 1, but it replaces data for the CPI and MCPI with data for average weekly earnings of all American workers and the total compensation series for the ECI. The period covered by Table 5 ranges from 1965 through 2010; 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 2010. This results in up to 50 year averages for the CPI and MCPI and up to 46 year averages for the earnings growth rates to interest rate comparisons. Table 2, for example, shows that the average rate of effective yields on 91-day Treasury bills from 1961 through 2010 was 5.57 percent and that the average rate of increase in the CPI over that same 50-year period was 4.07 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 2010. Table 4 provides the same comparisons with the growth rate in the MCPI for up to 50-year periods. 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 46 possible periods from 1965 through 2010. 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 31 possible periods from 1980 through 2010.

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 Yr. Avg. Rate," and the value corresponds to the average for the one-year period ending in 2010. Consequently, these are the same values that appear at the bottom of Tables 1 and 5, respectively. The rows labeled "2 Yr. Avg. Rate" contain the averages of the rates in the last two rows of Tables 1 and 5, for the years 2009 and 2010. Similarly, the rows labeled "3 Yr. Avg. Rate" contain the averages of the rates at the bottom of Tables 1 and 5 for the years 2008, 2009 and 2010. Tables 3 and 4 are derived from Table 2. Consequently, they start with the present and move further into the past as more years are included in the corresponding averages used to calculate

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.

III. Differences from Previous Versions

The current tables differ from earlier versions in three important respects. First, the average interest and growth rates in Tables 2 and 6 are geometric averages; previously these tables presented arithmetic averages. Use of arithmetic averages would have made no meaningful difference in the calculations provided in this paper

Second, while the primary data source for these tables is still the *Economic Report of the President* (ERP), there is one instance in which this is not the case. Specifically, all of the interest rate data come from Table B-73 in the 2011 ERP. The CPI and the Medical CPI come from Table B-60 in the 2011 ERP for 1967 on; the 2001 ERP is the source for prior years. The average weekly earnings series comes from Table B-47 in the 2011 ERP. The exception has to do with the total compensation ECI series. For 2001 on, the data came from Table B-48 in the 2011 ERP. For prior years, the data were downloaded from the Bureau of Labor Statistics web site 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 Also, in past ERPs, the base year of the SIC-based index values is not always the same.

Finally, the CPI, average weekly earnings, and ECI growth rates are calculated based on the underlying index or earnings values. In earlier versions of these tables, the percent growth rates were taken as published in the ERP, to the number of significant digits reported.

IV. Uses of the Tables

In addition to providing forensic economists with varied and flexible values for net discount rates and the real interest rate, 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 15 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.)

Tables

Table 1. Annual Values for Various Interest Rates and Growth Rates in the CPI and the MCPI from 1961-2010

Year	3-month	3-year	10-year	Corp Aaa	Municipal	CPI Incr.	MCPI
1961	2.45	3.54	3.88	4.35	3.46	1.01	2.69
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

“3-Month” refers to the 91 Day U.S. Treasury Bill, “3-Year” refers to a constant maturity U.S. Treasury three year note, “10 Year” refers to a 10 Year U.S. Treasury Note, “Corp. Aaa” refers to the Corporate Aaa rate, “Muni” refers to the High Grade Municipal rate, “CPI” refers to the Consumer Price Index, and “MCPI” refers to 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 2010

Number of Years to 2010	3-month	3-year	10-year	Corp Aaa	Municipal	CPI Incr.	MCPI
1 Yr. Avg. Rate	0.14	1.11	3.22	4.94	4.16	1.64	3.41
2 Yr. Avg. Rate	0.15	1.27	3.24	5.12	4.40	0.64	3.29
3 Yr. Avg. Rate	0.60	1.59	3.38	5.29	4.53	1.69	3.43
4 Yr. Avg. Rate	1.59	2.27	3.69	5.36	4.50	1.98	3.68
5 Yr. Avg. Rate	2.25	2.77	3.91	5.41	4.49	2.23	3.75
6 Yr. Avg. Rate	2.42	2.96	3.97	5.38	4.45	2.42	3.83
7 Yr. Avg. Rate	2.28	2.94	4.02	5.41	4.48	2.46	3.90
8 Yr. Avg. Rate	2.12	2.83	4.02	5.45	4.51	2.43	3.92
9 Yr. Avg. Rate	2.07	2.86	4.08	5.56	4.57	2.34	4.00
10 Yr. Avg. Rate	2.22	2.98	4.18	5.71	4.63	2.39	4.06
11 Yr. Avg. Rate	2.57	3.27	4.34	5.88	4.74	2.48	4.06
12 Yr. Avg. Rate	2.76	3.46	4.45	5.98	4.79	2.45	4.02
13 Yr. Avg. Rate	2.93	3.58	4.51	6.02	4.82	2.39	3.96
14 Yr. Avg. Rate	3.10	3.76	4.64	6.11	4.87	2.38	3.87
15 Yr. Avg. Rate	3.24	3.91	4.76	6.19	4.93	2.42	3.85
16 Yr. Avg. Rate	3.40	4.05	4.87	6.28	4.99	2.44	3.89
17 Yr. Avg. Rate	3.46	4.18	5.00	6.38	5.06	2.45	3.94
18 Yr. Avg. Rate	3.44	4.20	5.05	6.43	5.09	2.48	4.05
19 Yr. Avg. Rate	3.45	4.26	5.15	6.51	5.16	2.51	4.22
20 Yr. Avg. Rate	3.56	4.38	5.29	6.63	5.25	2.59	4.44
21 Yr. Avg. Rate	3.77	4.56	5.44	6.75	5.34	2.72	4.66
22 Yr. Avg. Rate	3.99	4.74	5.58	6.87	5.43	2.82	4.80
23 Yr. Avg. Rate	4.12	4.89	5.72	6.99	5.53	2.88	4.87
24 Yr. Avg. Rate	4.20	5.01	5.83	7.09	5.62	2.91	4.94
25 Yr. Avg. Rate	4.28	5.09	5.90	7.16	5.69	2.87	5.04
26 Yr. Avg. Rate	4.42	5.26	6.08	7.32	5.82	2.89	5.09
27 Yr. Avg. Rate	4.63	5.50	6.31	7.52	5.98	2.94	5.13
28 Yr. Avg. Rate	4.80	5.67	6.48	7.68	6.10	2.95	5.26
29 Yr. Avg. Rate	5.02	5.91	6.69	7.88	6.29	3.06	5.47
30 Yr. Avg. Rate	5.36	6.19	6.93	8.08	6.45	3.30	5.64
31 Yr. Avg. Rate	5.58	6.36	7.07	8.21	6.51	3.61	5.81
32 Yr. Avg. Rate	5.75	6.46	7.14	8.25	6.51	3.84	5.91
33 Yr. Avg. Rate	5.80	6.51	7.18	8.27	6.49	3.96	5.99
34 Yr. Avg. Rate	5.80	6.52	7.19	8.26	6.46	4.03	6.09
35 Yr. Avg. Rate	5.78	6.53	7.20	8.26	6.46	4.08	6.19
36 Yr. Avg. Rate	5.79	6.55	7.22	8.28	6.48	4.22	6.35
37 Yr. Avg. Rate	5.86	6.59	7.23	8.29	6.47	4.40	6.42
38 Yr. Avg. Rate	5.90	6.60	7.22	8.26	6.43	4.44	6.36
39 Yr. Avg. Rate	5.86	6.57	7.20	8.24	6.40	4.41	6.28
40 Yr. Avg. Rate	5.83	6.55	7.17	8.22	6.38	4.41	6.28
41 Yr. Avg. Rate	5.85	6.57	7.17	8.21	6.39	4.44	6.29
42 Yr. Avg. Rate	5.88	6.58	7.16	8.18	6.37	4.47	6.30
43 Yr. Avg. Rate	5.87	6.56	7.13	8.14	6.33	4.46	6.29
44 Yr. Avg. Rate	5.84	6.52	7.08	8.08	6.28	4.43	6.31
45 Yr. Avg. Rate	5.82	6.50	7.03	8.01	6.22	4.39	6.27
46 Yr. Avg. Rate	5.79	6.45	6.97	7.93	6.15	4.33	6.18
47 Yr. Avg. Rate	5.74	6.39	6.91	7.86	6.09	4.27	6.09
48 Yr. Avg. Rate	5.69	6.34	6.85	7.78	6.03	4.20	6.02
49 Yr. Avg. Rate	5.63	6.28	6.79	7.71	5.97	4.14	5.95
50 Yr. Avg. Rate	5.57	6.22	6.73	7.64	5.92	4.07	5.88

Table 3. Real Interest Rates Based on Various Interest Rates and the Growth Rate in the CPI for Numbers of Years Ending in 2010

Number of Years Ending in 2010	3-month	3-year	10-year	Corp. Aaa	Municipal	CPI Incr.	MCPI
1 Yr. Real Disc. Rate	-1.47	-0.52	1.55	3.25	2.48	0.00	1.74
2 Yr. Real Disc. Rate	-0.48	0.63	2.59	4.46	3.74	0.00	2.64
3 Yr. Real Disc. Rate	-1.07	-0.10	1.66	3.54	2.79	0.00	1.71
4 Yr. Real Disc. Rate	-0.38	0.29	1.68	3.31	2.47	0.00	1.66
5 Yr. Real Disc. Rate	0.02	0.53	1.65	3.11	2.21	0.00	1.48
6 Yr. Real Disc. Rate	0.00	0.53	1.52	2.89	1.99	0.00	1.37
7 Yr. Real Disc. Rate	-0.18	0.47	1.52	2.89	1.98	0.00	1.41
8 Yr. Real Disc. Rate	-0.31	0.39	1.54	2.94	2.03	0.00	1.45
9 Yr. Real Disc. Rate	-0.26	0.51	1.70	3.15	2.18	0.00	1.63
10 Yr. Real Disc. Rate	-0.17	0.58	1.74	3.25	2.19	0.00	1.64
11 Yr. Real Disc. Rate	0.09	0.78	1.82	3.32	2.20	0.00	1.55
12 Yr. Real Disc. Rate	0.30	0.98	1.95	3.44	2.28	0.00	1.53
13 Yr. Real Disc. Rate	0.53	1.17	2.08	3.55	2.38	0.00	1.53
14 Yr. Real Disc. Rate	0.70	1.35	2.21	3.64	2.43	0.00	1.46
15 Yr. Real Disc. Rate	0.81	1.46	2.29	3.69	2.45	0.00	1.40
16 Yr. Real Disc. Rate	0.93	1.57	2.37	3.75	2.49	0.00	1.41
17 Yr. Real Disc. Rate	0.99	1.69	2.49	3.83	2.55	0.00	1.45
18 Yr. Real Disc. Rate	0.94	1.68	2.51	3.85	2.55	0.00	1.53
19 Yr. Real Disc. Rate	0.92	1.70	2.58	3.91	2.59	0.00	1.67
20 Yr. Real Disc. Rate	0.94	1.74	2.63	3.93	2.59	0.00	1.80
21 Yr. Real Disc. Rate	1.02	1.79	2.64	3.92	2.55	0.00	1.88
22 Yr. Real Disc. Rate	1.13	1.87	2.68	3.94	2.54	0.00	1.92
23 Yr. Real Disc. Rate	1.21	1.96	2.76	4.00	2.58	0.00	1.94
24 Yr. Real Disc. Rate	1.26	2.04	2.84	4.06	2.64	0.00	1.98
25 Yr. Real Disc. Rate	1.38	2.16	2.95	4.18	2.75	0.00	2.12
26 Yr. Real Disc. Rate	1.49	2.30	3.10	4.31	2.85	0.00	2.14
27 Yr. Real Disc. Rate	1.64	2.48	3.27	4.44	2.95	0.00	2.12
28 Yr. Real Disc. Rate	1.79	2.64	3.42	4.59	3.06	0.00	2.24
29 Yr. Real Disc. Rate	1.90	2.77	3.52	4.67	3.13	0.00	2.34
30 Yr. Real Disc. Rate	2.00	2.80	3.51	4.63	3.05	0.00	2.27
31 Yr. Real Disc. Rate	1.90	2.65	3.34	4.44	2.80	0.00	2.12
32 Yr. Real Disc. Rate	1.83	2.52	3.18	4.24	2.57	0.00	1.99
33 Yr. Real Disc. Rate	1.78	2.46	3.10	4.15	2.44	0.00	1.95
34 Yr. Real Disc. Rate	1.70	2.39	3.04	4.06	2.34	0.00	1.98
35 Yr. Real Disc. Rate	1.63	2.35	3.00	4.02	2.29	0.00	2.03
36 Yr. Real Disc. Rate	1.51	2.24	2.88	3.90	2.17	0.00	2.04
37 Yr. Real Disc. Rate	1.40	2.10	2.72	3.73	1.98	0.00	1.94
38 Yr. Real Disc. Rate	1.40	2.06	2.66	3.66	1.90	0.00	1.84
39 Yr. Real Disc. Rate	1.39	2.07	2.67	3.66	1.91	0.00	1.79
40 Yr. Real Disc. Rate	1.36	2.05	2.64	3.64	1.89	0.00	1.79
41 Yr. Real Disc. Rate	1.35	2.04	2.62	3.61	1.86	0.00	1.77
42 Yr. Real Disc. Rate	1.35	2.02	2.58	3.56	1.83	0.00	1.75
43 Yr. Real Disc. Rate	1.35	2.01	2.55	3.52	1.79	0.00	1.75
44 Yr. Real Disc. Rate	1.35	2.01	2.54	3.49	1.77	0.00	1.80
45 Yr. Real Disc. Rate	1.37	2.01	2.53	3.46	1.75	0.00	1.79
46 Yr. Real Disc. Rate	1.39	2.03	2.53	3.45	1.75	0.00	1.77
47 Yr. Real Disc. Rate	1.41	2.04	2.54	3.44	1.75	0.00	1.75
48 Yr. Real Disc. Rate	1.42	2.05	2.54	3.43	1.75	0.00	1.74
49 Yr. Real Disc. Rate	1.43	2.05	2.54	3.43	1.76	0.00	1.74
50 Yr. Real Disc. Rate	1.43	2.06	2.55	3.43	1.77	0.00	1.74

Table 4. Net Medical Discount Rates based on Various Interest Rates and the Growth Rate in the Med CPI for Numbers of Years Ending in 2010

Number of Years Ending in 2010	3-month	3-year	10-year	Corp. Aaa	Municipal	CPI Incr	MCPI
1 Yr. Med. Disc. Rate	-3.16	-2.23	-0.19	1.48	0.72	-1.72	0.00
2 Yr. Med. Disc. Rate	-3.04	-1.96	-0.05	1.77	1.07	-2.57	0.00
3 Yr. Med. Disc. Rate	-2.73	-1.78	-0.05	1.80	1.07	-1.68	0.00
4 Yr. Med. Disc. Rate	-2.01	-1.35	0.01	1.62	0.80	-1.64	0.00
5 Yr. Med. Disc. Rate	-1.44	-0.94	0.16	1.60	0.72	-1.46	0.00
6 Yr. Med. Disc. Rate	-1.35	-0.83	0.14	1.50	0.61	-1.35	0.00
7 Yr. Med. Disc. Rate	-1.57	-0.93	0.11	1.45	0.55	-1.39	0.00
8 Yr. Med. Disc. Rate	-1.73	-1.05	0.09	1.47	0.57	-1.43	0.00
9 Yr. Med. Disc. Rate	-1.86	-1.10	0.07	1.50	0.54	-1.60	0.00
10 Yr. Med. Disc. Rate	-1.78	-1.04	0.11	1.58	0.55	-1.61	0.00
11 Yr. Med. Disc. Rate	-1.44	-0.76	0.27	1.75	0.64	-1.53	0.00
12 Yr. Med. Disc. Rate	-1.21	-0.54	0.42	1.89	0.74	-1.50	0.00
13 Yr. Med. Disc. Rate	-0.99	-0.36	0.54	1.99	0.83	-1.51	0.00
14 Yr. Med. Disc. Rate	-0.74	-0.11	0.74	2.15	0.96	-1.44	0.00
15 Yr. Med. Disc. Rate	-0.58	0.06	0.88	2.26	1.04	-1.38	0.00
16 Yr. Med. Disc. Rate	-0.47	0.16	0.95	2.30	1.06	-1.39	0.00
17 Yr. Med. Disc. Rate	-0.46	0.23	1.02	2.35	1.08	-1.43	0.00
18 Yr. Med. Disc. Rate	-0.58	0.14	0.96	2.28	1.00	-1.51	0.00
19 Yr. Med. Disc. Rate	-0.74	0.03	0.89	2.20	0.90	-1.65	0.00
20 Yr. Med. Disc. Rate	-0.85	-0.06	0.81	2.09	0.77	-1.77	0.00
21 Yr. Med. Disc. Rate	-0.85	-0.09	0.75	2.00	0.65	-1.85	0.00
22 Yr. Med. Disc. Rate	-0.77	-0.05	0.75	1.98	0.60	-1.89	0.00
23 Yr. Med. Disc. Rate	-0.72	0.02	0.81	2.02	0.63	-1.90	0.00
24 Yr. Med. Disc. Rate	-0.71	0.06	0.84	2.04	0.64	-1.94	0.00
25 Yr. Med. Disc. Rate	-0.72	0.04	0.81	2.02	0.61	-2.07	0.00
26 Yr. Med. Disc. Rate	-0.64	0.16	0.94	2.12	0.69	-2.09	0.00
27 Yr. Med. Disc. Rate	-0.47	0.35	1.12	2.27	0.81	-2.08	0.00
28 Yr. Med. Disc. Rate	-0.44	0.39	1.16	2.30	0.80	-2.19	0.00
29 Yr. Med. Disc. Rate	-0.42	0.42	1.16	2.29	0.77	-2.28	0.00
30 Yr. Med. Disc. Rate	-0.27	0.52	1.22	2.31	0.76	-2.22	0.00
31 Yr. Med. Disc. Rate	-0.21	0.52	1.19	2.27	0.67	-2.08	0.00
32 Yr. Med. Disc. Rate	-0.16	0.52	1.16	2.21	0.56	-1.95	0.00
33 Yr. Med. Disc. Rate	-0.17	0.50	1.13	2.15	0.47	-1.92	0.00
34 Yr. Med. Disc. Rate	-0.28	0.40	1.03	2.04	0.35	-1.94	0.00
35 Yr. Med. Disc. Rate	-0.38	0.32	0.95	1.95	0.26	-1.99	0.00
36 Yr. Med. Disc. Rate	-0.52	0.19	0.82	1.82	0.12	-2.00	0.00
37 Yr. Med. Disc. Rate	-0.53	0.15	0.76	1.75	0.04	-1.91	0.00
38 Yr. Med. Disc. Rate	-0.43	0.22	0.81	1.79	0.07	-1.80	0.00
39 Yr. Med. Disc. Rate	-0.40	0.28	0.86	1.84	0.11	-1.76	0.00
40 Yr. Med. Disc. Rate	-0.43	0.26	0.84	1.82	0.10	-1.76	0.00
41 Yr. Med. Disc. Rate	-0.41	0.27	0.83	1.81	0.09	-1.73	0.00
42 Yr. Med. Disc. Rate	-0.39	0.27	0.81	1.78	0.07	-1.72	0.00
43 Yr. Med. Disc. Rate	-0.39	0.25	0.79	1.74	0.04	-1.72	0.00
44 Yr. Med. Disc. Rate	-0.44	0.20	0.72	1.66	-0.03	-1.77	0.00
45 Yr. Med. Disc. Rate	-0.42	0.22	0.72	1.64	-0.04	-1.76	0.00
46 Yr. Med. Disc. Rate	-0.37	0.25	0.74	1.65	-0.03	-1.74	0.00
47 Yr. Med. Disc. Rate	-0.33	0.28	0.77	1.66	0.00	-1.72	0.00
48 Yr. Med. Disc. Rate	-0.31	0.30	0.78	1.66	0.01	-1.71	0.00
49 Yr. Med. Disc. Rate	-0.30	0.31	0.79	1.66	0.02	-1.71	0.00
50 Yr. Med. Disc. Rate	-0.30	0.32	0.80	1.66	0.04	-1.71	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 1965-2010

Year	3-month	3-year	10-year	Corp Aaa	Municipal	Av. Wk.%	E Cost %
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	1.51	1.19
2010	0.14	1.11	3.22	4.94	4.16	3.09	2.09

"Av. Wk.%" is the percent increase in the average weekly earnings for private nonagricultural and nonsupervisory workers. "E Cost %" 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 Values 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 2010

Number of Years to 2010	3-month	3-year	10-year	Corp Aaa	Muni	Av.Wk.%	E Cost %
1 Yr. Avg. Rate	0.14	1.11	3.22	4.94	4.16	3.09	2.09
2 Yr. Avg. Rate	0.15	1.27	3.24	5.12	4.40	2.29	1.64
3 Yr. Avg. Rate	0.60	1.59	3.38	5.29	4.53	2.54	1.91
4 Yr. Avg. Rate	1.59	2.27	3.69	5.36	4.50	2.88	2.18
5 Yr. Avg. Rate	2.25	2.77	3.91	5.41	4.49	3.17	2.38
6 Yr. Avg. Rate	2.42	2.96	3.97	5.38	4.45	3.12	2.47
7 Yr. Avg. Rate	2.28	2.94	4.02	5.41	4.48	2.98	2.66
8 Yr. Avg. Rate	2.12	2.83	4.02	5.45	4.51	2.88	2.83
9 Yr. Avg. Rate	2.07	2.86	4.08	5.56	4.57	2.85	2.86
10 Yr. Avg. Rate	2.22	2.98	4.18	5.71	4.63	2.83	2.99
11 Yr. Avg. Rate	2.57	3.27	4.34	5.88	4.74	2.93	3.10
12 Yr. Avg. Rate	2.76	3.46	4.45	5.98	4.79	2.95	3.13
13 Yr. Avg. Rate	2.93	3.58	4.51	6.02	4.82	3.02	3.16
14 Yr. Avg. Rate	3.10	3.76	4.64	6.11	4.87	3.13	3.18
15 Yr. Avg. Rate	3.24	3.91	4.76	6.19	4.93	3.14	3.18
16 Yr. Avg. Rate	3.40	4.05	4.87	6.28	4.99	3.09	3.13
17 Yr. Avg. Rate	3.46	4.18	5.00	6.38	5.06	3.09	3.14
18 Yr. Avg. Rate	3.44	4.20	5.05	6.43	5.09	3.08	3.16
19 Yr. Avg. Rate	3.45	4.26	5.15	6.51	5.16	3.06	3.18
20 Yr. Avg. Rate	3.56	4.38	5.29	6.63	5.25	3.04	3.24
21 Yr. Avg. Rate	3.77	4.56	5.44	6.75	5.34	3.06	3.31
22 Yr. Avg. Rate	3.99	4.74	5.58	6.87	5.43	3.08	3.37
23 Yr. Avg. Rate	4.12	4.89	5.72	6.99	5.53	3.07	3.44
24 Yr. Avg. Rate	4.20	5.01	5.83	7.09	5.62	3.04	3.44
25 Yr. Avg. Rate	4.28	5.09	5.90	7.16	5.69	2.98	3.42
26 Yr. Avg. Rate	4.42	5.26	6.08	7.32	5.82	2.96	3.44
27 Yr. Avg. Rate	4.63	5.50	6.31	7.52	5.98	3.00	3.49
28 Yr. Avg. Rate	4.80	5.67	6.48	7.68	6.10	3.07	3.57
29 Yr. Avg. Rate	5.02	5.91	6.69	7.88	6.29	3.11	3.67
30 Yr. Avg. Rate	5.36	6.19	6.93	8.08	6.45	3.29	3.87
31 Yr. Avg. Rate	5.58	6.36	7.07	8.21	6.51	3.40	4.05
32 Yr. Avg. Rate	5.75	6.46	7.14	8.25	6.51	3.52	n.a
33 Yr. Avg. Rate	5.80	6.51	7.18	8.27	6.49	3.64	n.a
34 Yr. Avg. Rate	5.80	6.52	7.19	8.26	6.46	3.74	n.a
35 Yr. Avg. Rate	5.78	6.53	7.20	8.26	6.46	3.84	n.a
36 Yr. Avg. Rate	5.79	6.55	7.22	8.28	6.48	3.89	n.a
37 Yr. Avg. Rate	5.86	6.59	7.23	8.29	6.47	3.93	n.a
38 Yr. Avg. Rate	5.90	6.60	7.22	8.26	6.43	3.99	n.a
39 Yr. Avg. Rate	5.86	6.57	7.20	8.24	6.40	4.08	n.a
40 Yr. Avg. Rate	5.83	6.55	7.17	8.22	6.38	4.14	n.a
41 Yr. Avg. Rate	5.85	6.57	7.17	8.21	6.39	4.14	n.a
42 Yr. Avg. Rate	5.88	6.58	7.16	8.18	6.37	4.18	n.a
43 Yr. Avg. Rate	5.87	6.56	7.13	8.14	6.33	4.21	n.a
44 Yr. Avg. Rate	5.84	6.52	7.08	8.08	6.28	4.18	n.a
45 Yr. Avg. Rate	5.82	6.50	7.03	8.01	6.22	4.16	n.a
46 Yr. Avg. Rate	5.79	6.45	6.97	7.93	6.15	4.16	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 2010

Number of Years to 2010	3-month	3-year	10-year	Corp. Aaa	Municipal	Av. Wk.%	E Cost %
1 Yr Net Disc. Rate	-2.86	-1.92	0.13	1.80	1.04	0.00	-0.97
2 Yr Net Disc. Rate	-2.09	-1.00	0.93	2.77	2.06	0.00	-0.64
3 Yr Net Disc. Rate	-1.89	-0.92	0.82	2.68	1.94	0.00	-0.62
4 Yr Net Disc. Rate	-1.25	-0.59	0.79	2.41	1.58	0.00	-0.68
5 Yr Net Disc. Rate	-0.89	-0.39	0.72	2.17	1.28	0.00	-0.76
6 Yr Net Disc. Rate	-0.68	-0.15	0.83	2.19	1.30	0.00	-0.63
7 Yr Net Disc. Rate	-0.68	-0.04	1.01	2.37	1.46	0.00	-0.31
8 Yr Net Disc. Rate	-0.74	-0.05	1.10	2.49	1.58	0.00	-0.05
9 Yr Net Disc. Rate	-0.77	0.01	1.19	2.63	1.67	0.00	0.00
10 Yr Net Disc. Rate	-0.60	0.14	1.30	2.80	1.75	0.00	0.15
11 Yr Net Disc. Rate	-0.35	0.34	1.37	2.87	1.76	0.00	0.17
12 Yr Net Disc. Rate	-0.19	0.49	1.45	2.94	1.79	0.00	0.18
13 Yr Net Disc. Rate	-0.09	0.54	1.44	2.91	1.74	0.00	0.13
14 Yr Net Disc. Rate	-0.03	0.61	1.47	2.89	1.69	0.00	0.05
15 Yr Net Disc. Rate	0.10	0.75	1.57	2.96	1.73	0.00	0.04
16 Yr Net Disc. Rate	0.30	0.94	1.74	3.10	1.85	0.00	0.05
17 Yr Net Disc. Rate	0.36	1.06	1.85	3.19	1.91	0.00	0.04
18 Yr Net Disc. Rate	0.35	1.08	1.91	3.24	1.95	0.00	0.08
19 Yr Net Disc. Rate	0.37	1.16	2.03	3.35	2.04	0.00	0.11
20 Yr Net Disc. Rate	0.51	1.31	2.18	3.48	2.15	0.00	0.20
21 Yr Net Disc. Rate	0.69	1.46	2.31	3.59	2.22	0.00	0.24
22 Yr Net Disc. Rate	0.88	1.62	2.43	3.68	2.28	0.00	0.29
23 Yr Net Disc. Rate	1.01	1.77	2.57	3.80	2.38	0.00	0.35
24 Yr Net Disc. Rate	1.12	1.91	2.70	3.92	2.50	0.00	0.38
25 Yr Net Disc. Rate	1.26	2.04	2.83	4.06	2.63	0.00	0.43
26 Yr Net Disc. Rate	1.42	2.23	3.03	4.24	2.78	0.00	0.47
27 Yr Net Disc. Rate	1.58	2.42	3.21	4.38	2.89	0.00	0.48
28 Yr Net Disc. Rate	1.68	2.53	3.31	4.47	2.95	0.00	0.49
29 Yr Net Disc. Rate	1.86	2.72	3.48	4.63	3.08	0.00	0.54
30 Yr Net Disc. Rate	2.01	2.81	3.53	4.65	3.06	0.00	0.57
31 Yr Net Disc. Rate	2.11	2.86	3.55	4.65	3.01	0.00	0.63
32 Yr Net Disc. Rate	2.15	2.84	3.50	4.57	2.89	0.00	n.a
33 Yr Net Disc. Rate	2.08	2.77	3.41	4.46	2.75	0.00	n.a
34 Yr Net Disc. Rate	1.98	2.68	3.33	4.36	2.63	0.00	n.a
35 Yr Net Disc. Rate	1.87	2.59	3.24	4.26	2.53	0.00	n.a
36 Yr Net Disc. Rate	1.83	2.57	3.21	4.23	2.49	0.00	n.a
37 Yr Net Disc. Rate	1.86	2.56	3.18	4.19	2.44	0.00	n.a
38 Yr Net Disc. Rate	1.84	2.51	3.11	4.11	2.35	0.00	n.a
39 Yr Net Disc. Rate	1.71	2.39	2.99	3.99	2.23	0.00	n.a
40 Yr Net Disc. Rate	1.62	2.32	2.91	3.92	2.16	0.00	n.a
41 Yr Net Disc. Rate	1.64	2.34	2.92	3.91	2.16	0.00	n.a
42 Yr Net Disc. Rate	1.63	2.30	2.86	3.84	2.10	0.00	n.a
43 Yr Net Disc. Rate	1.59	2.25	2.80	3.77	2.03	0.00	n.a
44 Yr Net Disc. Rate	1.60	2.25	2.79	3.74	2.01	0.00	n.a
45 Yr Net Disc. Rate	1.59	2.24	2.75	3.69	1.98	0.00	n.a
46 Yr Net Disc. Rate	1.56	2.19	2.69	3.62	1.91	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 2010

	3-month	3-year	10-year	Corp. Aaa	Municipal	Av. Wk.%	E Cost %
Years to 2010							
1 Yr Net Disc. Rate	-1.91	-0.96	1.11	2.79	2.03	0.98	0.00
2 Yr Net Disc. Rate	-1.46	-0.36	1.57	3.43	2.72	0.64	0.00
3 Yr Net Disc. Rate	-1.28	-0.31	1.44	3.32	2.58	0.62	0.00
4 Yr Net Disc. Rate	-0.58	0.09	1.48	3.11	2.27	0.68	0.00
5 Yr Net Disc. Rate	-0.13	0.38	1.49	2.95	2.06	0.76	0.00
6 Yr Net Disc. Rate	-0.05	0.48	1.47	2.84	1.94	0.64	0.00
7 Yr Net Disc. Rate	-0.38	0.27	1.32	2.68	1.77	0.31	0.00
8 Yr Net Disc. Rate	-0.69	0.00	1.15	2.55	1.64	0.05	0.00
9 Yr Net Disc. Rate	-0.77	0.00	1.19	2.63	1.67	0.00	0.00
10 Yr Net Disc. Rate	-0.75	-0.01	1.15	2.64	1.59	-0.15	0.00
11 Yr Net Disc. Rate	-0.52	0.17	1.20	2.70	1.58	-0.17	0.00
12 Yr Net Disc. Rate	-0.37	0.31	1.28	2.76	1.61	-0.17	0.00
13 Yr Net Disc. Rate	-0.22	0.41	1.31	2.77	1.61	-0.13	0.00
14 Yr Net Disc. Rate	-0.08	0.56	1.42	2.84	1.64	-0.05	0.00
15 Yr Net Disc. Rate	0.06	0.71	1.53	2.92	1.70	-0.04	0.00
16 Yr Net Disc. Rate	0.26	0.89	1.69	3.05	1.80	-0.05	0.00
17 Yr Net Disc. Rate	0.32	1.02	1.81	3.14	1.87	-0.04	0.00
18 Yr Net Disc. Rate	0.27	1.00	1.83	3.16	1.87	-0.08	0.00
19 Yr Net Disc. Rate	0.26	1.04	1.91	3.23	1.92	-0.11	0.00
20 Yr Net Disc. Rate	0.31	1.10	1.98	3.28	1.94	-0.20	0.00
21 Yr Net Disc. Rate	0.45	1.22	2.07	3.34	1.97	-0.24	0.00
22 Yr Net Disc. Rate	0.59	1.32	2.13	3.38	1.99	-0.29	0.00
23 Yr Net Disc. Rate	0.66	1.41	2.20	3.43	2.02	-0.35	0.00
24 Yr Net Disc. Rate	0.74	1.52	2.31	3.53	2.11	-0.38	0.00
25 Yr Net Disc. Rate	0.83	1.61	2.40	3.62	2.19	-0.42	0.00
26 Yr Net Disc. Rate	0.95	1.76	2.55	3.75	2.30	-0.46	0.00
27 Yr Net Disc. Rate	1.10	1.94	2.72	3.89	2.40	-0.48	0.00
28 Yr Net Disc. Rate	1.18	2.03	2.80	3.96	2.44	-0.49	0.00
29 Yr Net Disc. Rate	1.31	2.17	2.92	4.06	2.53	-0.54	0.00
30 Yr Net Disc. Rate	1.43	2.23	2.94	4.05	2.48	-0.56	0.00
31 Yr Net Disc. Rate	1.48	2.22	2.90	4.00	2.37	-0.62	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.

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. In general, the MCPI should not 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.

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