

Table 1-Comparison of Various Interest Rates to Rates of Increase in Average Weekly Earnings for All American Workers and the Employer Cost Index (after 1979)

Year	3-month	3-year	10-year	30 year	Corp Aaa	Muni Aaa	Av. Wk.%	E Cost %
1959	3.528	4.46	4.33	n.a	4.38	3.95	4.9	n.a
1960	3.025	3.98	4.12	n.a	4.41	3.73	2.4	n.a
1961	2.448	3.54	3.88	n.a	4.35	3.73	2.4	n.a
1962	2.867	3.47	3.88	n.a	4.33	3.18	4.0	n.a
1963	3.266	3.67	4.00	n.a	4.26	3.23	3.0	n.a
1964	3.681	4.03	4.19	n.a	4.40	3.22	3.2	n.a
1965	4.111	4.22	4.28	n.a	4.49	3.27	4.5	n.a
1966	5.106	5.23	4.92	n.a	5.13	3.82	3.5	n.a
1967	4.504	5.03	5.07	n.a	5.51	3.98	3.1	n.a
1968	5.601	5.68	5.65	n.a	6.18	6.94	5.8	n.a
1969	7.066	7.02	6.67	n.a	7.03	5.81	6.4	n.a
1970	6.825	7.29	7.35	n.a	8.04	6.51	4.6	n.a
1971	4.533	5.65	6.16	n.a	7.39	5.70	6.2	n.a
1972	4.236	5.72	6.21	n.a	7.21	5.27	7.5	n.a
1973	7.469	6.95	6.84	n.a	7.44	5.18	6.2	n.a
1974	8.411	7.82	7.56	n.a	8.57	6.09	6.4	n.a
1975	6.145	7.49	7.99	n.a	8.83	6.89	5.7	n.a
1976	5.222	6.77	7.61	n.a	8.43	6.49	7.3	n.a
1977	5.521	6.69	7.42	7.75	8.02	5.56	7.7	n.a
1978	7.669	8.29	8.41	8.49	8.73	5.90	7.8	n.a
1979	10.862	9.71	9.44	9.28	9.63	6.39	8.0	n.a
1980	12.568	11.55	11.46	11.29	11.94	8.51	6.9	9.6
1981	15.583	14.44	13.91	13.45	14.17	11.23	8.5	9.9
1982	11.609	12.92	13.00	12.76	13.79	11.57	4.7	6.5
1983	9.250	10.45	11.10	11.18	12.04	9.47	5.0	5.7
1984	10.332	11.89	12.44	12.41	12.71	10.15	4.3	4.9
1985	7.957	9.64	10.62	10.79	11.37	9.18	2.1	3.9
1986	6.300	7.06	7.68	7.78	9.02	7.38	1.9	3.2
1987	6.125	7.68	7.68	8.39	9.38	7.73	2.5	3.3
1988	7.080	8.26	8.85	8.96	9.71	7.76	3.0	4.8
1989	8.674	8.55	8.49	8.45	9.26	7.24	3.8	4.8
1990	7.991	8.26	8.55	8.61	9.32	7.25	3.3	4.6
1991	5.689	6.82	7.85	8.14	8.77	6.89	2.5	4.4
1992	3.576	5.30	7.01	7.67	8.14	6.41	2.7	3.5
1993	3.121	4.44	5.87	6.59	7.22	5.63	2.8	3.6
1994	4.470	6.27	7.09	7.37	7.96	6.19	3.3	3.1
1995	5.787	6.25	6.57	6.88	7.59	5.95	2.2	2.6
1996	5.256	5.99	6.44	6.71	7.37	5.75	3.1	3.1
1997	5.310	6.10	6.35	7.27	7.87	5.55	4.5	3.4
1998	5.029	5.14	5.26	5.58	6.53	5.12	4.0	3.8
1999	4.868	5.49	5.65	5.87	7.04	5.43	3.3	3.3
5 Year Average	5.25	5.79	6.05	6.46	7.28	5.56	3.42	3.24
10 Year Average	5.11	6.01	6.66	7.07	7.78	6.02	3.17	3.54
15 Year Average	5.82	6.75	7.33	7.67	8.44	6.63	3.00	3.69
20 Year Average	7.33	8.12	8.59	8.81	9.56	7.52	3.72	4.60
23 Year Average	7.42	8.14	8.57	8.77	9.89	7.65	4.45	n.a.
25 Year Average	7.28	8.06	8.51	n.a.	9.39	7.26	4.44	n.a.
30 Year Average	7.12	7.83	8.23	n.a.	9.12	7.01	4.73	n.a.
35 Year Average	6.85	7.49	7.81	n.a.	8.62	6.69	4.72	n.a.
40 Year Average	6.38	7.02	7.34	n.a.	8.09	6.28	4.50	n.a.

Interest Rates in Table 1 are based on Table B-71 of the *Economic Report of the President: 2000*. Percentage increases in average weekly earnings are taken from Table B-47. Percentage Increases in the Employer Cost Index are taken from Table B-46. Abbreviations are explained in Table 2. The 3 Month Treasury Bill rate is converted from "Bank Discount" to "yield to maturity."

Table 2--Calculation of Net Discount Rates Based on Comparisons of Various Interest Rates to Average Weekly Earnings for All American Workers and the Employer Cost Index (after 1979)

Year	3-month	3-year	10-year	30 year	Corp Aaa	Muni Aaa	Av. Wk%	E Cost %
5 Year Average	5.25	5.79	6.05	6.46	7.28	5.56	3.42	3.24
10 Year Average	5.11	6.01	6.66	7.07	7.78	6.02	3.17	3.54
15 Year Average.	5.82	6.75	7.33	7.67	8.44	6.63	3.00	3.69
20 Year Average	7.33	8.12	8.59	8.81	9.56	7.52	3.72	4.60
23 Year Average	7.42	8.14	8.57	8.77	9.89	7.65	4.45	n.a.
25 Year Average	7.28	8.06	8.51	n.a.	9.39	7.26	4.44	n.a.
30 Year Average	7.12	7.83	8.23	n.a.	9.12	7.01	4.73	n.a.
35 Year Average	6.85	7.49	7.81	n.a.	8.62	6.69	4.72	n.a.
40 Year Average	6.38	7.02	7.34	n.a.	8.09	6.28	4.50	n.a.
5 Year NDP	1.77	2.30	2.55	2.94	3.73	2.07	0.00	-0.17
10 Year NDP	1.88	2.75	3.39	3.78	4.47	2.76	0.00	0.36
15 Year NDP	2.73	3.64	4.20	4.53	5.28	3.52	0.00	0.67
20 Year NDP	3.48	4.25	4.70	4.91	5.63	3.66	0.00	0.85
23 Year NDP	2.84	3.53	3.95	4.13	5.21	3.06	0.00	n.a.
25 Year NDP	2.72	3.46	3.90	n.a.	4.74	2.70	-0.00	n.a.
30 Year NDP	2.28	2.96	3.34	n.a.	4.19	2.18	-0.00	n.a.
35 Year NDP	2.04	2.64	2.95	n.a.	3.73	1.88	-0.00	n.a.
40 Year NDP	1.80	2.41	2.72	n.a.	3.43	1.71	0.00	n.a.
5 Year EDP	1.95	2.47	2.73	3.12	3.91	2.25	0.17	0.00
10 Year EDP	1.52	2.38	3.02	3.41	4.10	2.39	-0.36	0.00
15 Year EDP	2.05	2.95	3.51	3.84	4.58	2.84	-0.67	0.00
20 Year EDP	2.61	3.37	3.82	4.02	4.74	2.79	-0.84	0.00

In Tables 1 and 2, "3-month" refers to the ending rate on 91 Day U.S. Treasury Bills. "3-Year" refers to the ending rate on three year U.S. Treasury Notes, "10-Year" and "30-Year" to the ending rates on 10 and 30 year U.S. Treasury Bonds, respectively. "Corp Aaa" refers to the ending rate on Aaa rated corporate bonds. "Muni Aaa" refers to the ending rate on Aaa rated state and local bonds that are not subject to federal income taxation. "Av. Wk. %" refers to the annual rate of change in average weekly earnings of all American workers during that year. "E Cost %" refers to the annual rate of change in the Employer Cost Index, starting after 1979. All Data is taken from *The Economic Report of the President: 2000* with tables and page numbers indicated in the notes to Table 1. NDP refers to the Net Discount Rate, as calculated from the Average Weekly Earnings Series. EDP refers to the Net Discount Rate, as calculated from the Employer Cost Series.

Table 2 was developed from data reported in Table 1, based on the general formula $(1 + i)/(1 + g) = 1 +$ the appropriate net rate. Thus, in the first calculation reported above, the period was a five year average. Using the five year average rate of interest for 10 year U.S. Treasury Bonds of 6.05 percent and the five year average rate of increase in average weekly earnings of 3.42 percent, those numbers would be substituted into the general formula as $1.0605/1.0342 = 1.0254$. Therefore, 2.54 is the net discount rate based on a five year average of the interest rate on 10 Year U.S. Treasury Bonds and the five year average of annual rates of increase in average weekly earnings of all American workers. The numbers reported in the final two columns are not net discount rates, but comparisons of data in the average weekly earnings series with the employer cost series. The number zero appears for values in the "Ave. Wk. %" for all NDP entries the value is equal to the rate of change in average weekly earnings divided by itself minus one, which equals zero. The first figure of -0.17 in the "E Cost %" column implies that average weekly earnings percentage was larger than the employer cost percentage for that five year period. A positive 0.17 appears in the comparison for the "5 Year EDP" where the formula is based on the rate of change in the Employer Cost Index. Numbers vary slightly due to rounding in some instances.

Since the Employer Cost Index figures only began to be reported in 1980, the longest possible comparison of that data source is 20 years, which is why that calculation is only reported for that period. Likewise, the U.S. Treasury only began to issue 30 Year bonds in 1977, which is why a 23 year period is included.

Table 3--Comparison of Various Interest Rates to Rates of Increase in the CPI and MCPI

Year	3-month	3-year	10-year	30 year	Corp Aaa	Muni Aaa	CPI Incr.	Med CPI
1959	3.528	4.46	4.33	n.a.	4.38	3.95	0.7	4.4
1960	3.025	3.98	4.12	n.a.	4.41	3.73	1.7	4.3
1961	2.448	3.54	3.88	n.a.	4.35	3.73	1.0	3.6
1962	2.867	3.47	3.88	n.a.	4.33	3.18	1.0	3.5
1963	3.266	3.67	4.00	n.a.	4.26	3.23	1.3	2.9
1964	3.681	4.03	4.19	n.a.	4.40	3.22	1.3	2.3
1965	4.111	4.22	4.28	n.a.	4.49	3.27	1.6	3.2
1966	5.106	5.23	4.92	n.a.	5.13	3.82	2.9	5.3
1967	4.504	5.03	5.07	n.a.	5.51	3.98	3.1	8.8
1968	5.601	5.68	5.65	n.a.	6.18	6.94	4.2	7.3
1969	7.066	7.02	6.67	n.a.	7.03	5.81	5.5	8.2
1970	6.825	7.29	7.35	n.a.	8.04	6.51	5.7	7.0
1971	4.533	5.65	6.16	n.a.	7.39	5.70	4.4	7.4
1972	4.236	5.72	6.21	n.a.	7.21	5.27	3.2	3.5
1973	7.469	6.95	6.84	n.a.	7.44	5.18	6.2	4.5
1974	8.411	7.82	7.56	n.a.	8.57	6.09	11.0	10.4
1975	6.145	7.49	7.99	n.a.	8.83	6.89	9.1	12.6
1976	5.222	6.77	7.61	n.a.	8.43	6.49	5.8	10.1
1977	5.521	6.69	7.42	7.75	8.02	5.56	6.5	9.6
1978	7.669	8.29	8.41	8.49	8.73	5.90	7.6	8.4
1979	10.862	9.71	9.44	9.28	9.63	6.39	11.3	9.2
1980	12.568	11.55	11.46	11.29	11.94	8.51	13.5	11.0
1981	15.583	14.44	13.91	13.45	14.17	11.23	10.3	10.7
1982	11.609	12.92	13.00	12.76	13.79	11.57	6.2	11.6
1983	9.250	10.45	11.10	11.18	12.04	9.47	3.2	8.8
1984	10.332	11.89	12.44	12.41	12.71	10.15	4.3	6.2
1985	7.957	9.64	10.62	10.79	11.37	9.18	3.6	6.3
1986	6.300	7.06	7.68	7.78	9.02	7.38	1.9	7.5
1987	6.125	7.68	7.68	8.39	9.38	7.73	3.6	6.6
1988	7.080	8.26	8.85	8.96	9.71	7.76	4.1	6.5
1989	8.674	8.55	8.49	8.45	9.26	7.24	4.8	7.7
1990	7.991	8.26	8.55	8.61	9.32	7.25	5.4	9.0
1991	5.689	6.82	7.85	8.14	8.77	6.89	4.2	8.7
1992	3.576	5.30	7.01	7.67	8.14	6.41	3.0	7.4
1993	3.121	4.44	5.87	6.59	7.22	5.63	3.0	5.9
1994	4.470	6.27	7.09	7.37	7.96	6.19	2.6	4.8
1995	5.787	6.25	6.57	6.88	7.59	5.95	2.8	4.5
1996	5.256	5.99	6.44	6.71	7.37	5.75	3.0	3.5
1997	5.310	6.10	6.35	7.27	7.87	5.55	2.3	2.8
1998	5.029	5.14	5.26	5.58	6.53	5.12	1.6	3.2
1999	4.868	5.49	5.65	5.87	7.04	5.43	2.2	3.5
5 Year Average	5.25	5.79	6.05	6.46	7.28	5.56	2.38	3.50
10 Year Average	5.11	6.01	6.66	7.07	7.78	6.02	3.01	5.33
15 Year Average.	5.82	6.75	7.33	7.67	8.44	6.63	3.21	5.86
20 Year Average	7.33	8.12	8.59	8.81	9.56	7.52	4.28	6.81
23 Year Average	7.42	8.14	8.57	8.77	9.46	7.31	4.83	7.10
25 Year Average	7.28	8.06	8.51	8.07	9.39	7.26	5.04	7.44
30 Year Average	7.12	7.83	8.23	6.72	9.12	7.01	5.21	7.30
35 Year Average	6.85	7.49	7.81	5.76	8.62	6.69	4.96	7.19
40 Year Average	6.38	7.02	7.34	5.04	8.09	6.28	4.50	6.71

Interest Rates in Table 3 are taken from Table B-71 of the *Economic Report of the President: 2000*. Increases in the CPI and MCPI are taken from Table B-63. Abbreviations are explained in Table 4. The 3 Month Treasury Bill rate is converted from "Bank Discount" to "yield to maturity."

Table 4--Real Interest Rates and Medical Care Net Discount Rates Calculated from Comparisons of Various Interest Rates, Rates of Change in the CPI and the Medical CPI

Year	3-month	3-year	10-year	30 year	Corp Aaa	Muni Aaa	CPI Incr.	Med CPI
5 Year Average	5.25	5.79	6.05	6.46	7.28	5.56	2.38	3.50
10 Year Average	5.11	6.01	6.66	7.07	7.78	6.02	3.01	5.33
15 Year Average.	5.82	6.75	7.33	7.67	8.44	6.63	3.21	5.86
20 Year Average	7.33	8.12	8.59	8.81	9.56	7.52	4.28	6.81
23 Year Average	7.42	8.14	8.57	8.77	9.46	7.31	4.83	7.10
25 Year Average	7.28	8.06	8.51	8.07	9.39	7.26	5.04	7.44
30 Year Average	7.12	7.83	8.23	6.72	9.12	7.01	5.21	7.30
35 Year Average	6.85	7.49	7.81	5.76	8.62	6.69	4.96	7.19
40 Year Average	6.38	7.02	7.34	5.04	8.09	6.28	4.50	6.71
5 Year RDR	2.80	3.33	3.59	3.99	4.79	3.11	0.00	1.09
10 Year RDR	2.04	2.91	3.55	3.94	4.63	2.92	0.00	2.25
15 Year RDR	2.52	3.43	3.99	4.32	5.06	3.31	-0.00	2.57
20 Year RDR	2.92	3.69	4.14	4.34	5.06	3.11	0.00	2.43
23 Year RDR	2.47	3.16	3.57	3.76	4.42	2.37	-0.00	2.17
25 Year RDR	2.13	2.87	3.30	n.a.	4.14	2.12	-0.00	2.29
30 Year RDR	1.81	2.49	2.87	n.a.	3.71	1.71	0.00	1.98
35 Year RDR	1.80	2.41	2.72	n.a.	3.49	1.65	0.00	2.13
40 Year RDR	1.80	2.41	2.72	n.a.	3.43	1.71	0.00	2.11
5 Year MDR	1.69	2.22	2.47	2.86	3.65	1.99	-1.08	0.00
10 Year MDR	-0.21	0.64	1.27	1.65	2.33	0.65	-2.20	0.00
15 Year MDR	-0.04	0.84	1.39	1.71	2.43	0.73	-2.51	0.00
20 Year MDR	0.49	1.23	1.67	1.87	2.57	0.66	-2.37	0.00
23 Year MDR	0.30	0.97	1.37	1.56	2.20	0.20	-2.12	0.00
25 Year MDR	-0.15	0.58	1.00	n.a.	1.82	-0.16	-2.24	0.00
30 Year MDR	-0.17	0.49	0.87	n.a.	1.69	-0.27	-1.94	-0.00
35 Year MDR	-0.31	0.28	0.58	n.a.	1.34	-0.47	-2.08	0.00
40 Year MDR	-0.31	0.29	0.59	n.a.	1.29	-0.40	-2.07	-0.00

In Tables 3 and 4, "3-month" refers to the ending rate on 91 Day U.S. Treasury Bills. "3-Year" refers to the ending rate on three year U.S. Treasury Notes, "10-Year" and "30-Year" to the ending rates on 10 and 30 year U.S. Treasury Bonds, respectively. "Corp Aaa" refers to the ending rate on Aaa rated corporate bonds. "Muni Aaa" refers to the ending rate on Aaa rated state and local bonds that are not subject to federal income taxation. "CPI Increase" refers to the annual rate of increase in the Consumer Price Index. "Med CPI" refers to the annual rate of increase in the medical care component of the Consumer Price Index. All data is taken from the Economic Report of the President 2000, with tables and pages indicated in the notes in Table . RDR refers to the real net discount rate. MDR refers to the Medical Care Component Net Discount Rate.

Table 4 was developed from data reported in Table 3, based on the general formula $(1 + i)/(1 + g) = 1 +$ the appropriate net rate. Thus, in the first calculation reported above, the period was a five year average. Using the five year average rate of interest for 10 year U.S. Treasury Bonds of 6.05 percent and the five year average rate of increase in the Consumer Price Index of 2.38 percent, those numbers would be substituted into the general formula as $1.0605/1.0238 = 1.0359$. Therefore, 3.59 is the real discount rate based on a five year average of the interest rate on 10 Year U.S. Treasury Bonds and the five year average of annual rates of increase in the Consumer Price Index. The same process is involved in the calculation of the Medical Discount Rate, MDR. The numbers reported in the final two columns are not net discount rates, but comparisons of data in the CPI and Med CPI columns. The number zero appears for all values in the "CPI" column for the RDR categories because the value is equal to the rate of change in average weekly earnings divided by itself minus one, which equals zero. The first figure of 1.09 in the for the MDR column implies that the MCPI was greater than the CPI by that amount. The 1.08 value that appears in the comparison for the "5 Year MDR" column where the formula is based on the rate of change in the MCPI. Numbers vary slightly due to rounding in some instances.

The U.S. Treasury only began to issue 30 Year bonds in 1977, which is why an "n.a." is used for comparisons that would require more than 23 years.