

# Co2 Levels in the Atmosphere

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## **ABSTRACT**

**The basic idea of this research paper is to convey the levels of Co2 present in the economy and its adverse impacts. Co2 is a component of the air & is naturally present in the environment but due to pollution & the presence of toxic materials, the Co2 levels have shot up drastically. This research paper aims to bring out to light the adverse impact of increase in Co2 levels and the harm it will cause humans & the environment around it.**

## **OBJECTIVE**

The main objective of this research paper is to convey the Co2 levels around the globe. It also goes on to forecast the estimated increase that will be coming in the next few years. It shows the reality of the threat of climate change that is looming over our heads.

## I. INTRODUCTION

Field Name	Order	Type (Format)	Description
<b>Date</b>	1	date (%Y-%m-%d)	YYYY-MM-DD
<b>Decimal Date</b>	2	number	
<b>Average</b>	3	number	The monthly mean CO <sub>2</sub> mole fraction determined from daily averages. If there are missing days concentrated either early or late in the month, the monthly mean is corrected to the middle of the month using the average seasonal cycle. Missing months are denoted by -99.99.
<b>Interpolated</b>	4	number	Values from the average column and interpolated values where data are missing. Interpolated values are computed in two steps. First, we compute for each month the average seasonal cycle in a 7-year window around each monthly value. In this way the seasonal cycle is allowed to change slowly over time. We then determine the trend value for each month by removing the seasonal cycle; this result is shown in the trend column. Trend values are linearly interpolated for missing months. The interpolated monthly mean is then the sum of the average seasonal cycle value and the trend value for the missing month.
<b>Trend</b>	5	number	Seasonally corrected.
<b>Number of Days</b>	6	number	-1 denotes no data for number of daily averages in the month.

Table 1

Source: <https://datahub.io/core/co2-ppm#data>

**II. DATA**

<b>Sr. No.</b>	<b>Date</b>	<b>Decimal Date</b>	<b>Average</b>	<b>Interpolated</b>	<b>Trend</b>	<b>Number of Days</b>
1	01-03-1958	1958.2	315.71	315.71	314.62	-1
2	01-04-1958	1958.3	317.45	317.45	315.29	-1
3	01-05-1958	1958.4	317.5	317.5	314.71	-1
4	01-06-1958	1958.5	-99.99	317.1	314.85	-1
5	01-07-1958	1958.5	315.86	315.86	314.98	-1
6	01-08-1958	1958.6	314.93	314.93	315.94	-1
7	01-09-1958	1958.7	313.2	313.2	315.91	-1
8	01-10-1958	1958.8	-99.99	312.66	315.61	-1
9	01-11-1958	1958.9	313.33	313.33	315.31	-1
10	01-12-1958	1959	314.67	314.67	315.61	-1
11	01-01-1959	1959	315.62	315.62	315.7	-1
12	01-02-1959	1959.1	316.38	316.38	315.88	-1
13	01-03-1959	1959.2	316.71	316.71	315.62	-1
14	01-04-1959	1959.3	317.72	317.72	315.56	-1
15	01-05-1959	1959.4	318.29	318.29	315.5	-1
16	01-06-1959	1959.5	318.15	318.15	315.92	-1
17	01-07-1959	1959.5	316.54	316.54	315.66	-1
18	01-08-1959	1959.6	314.8	314.8	315.81	-1
19	01-09-1959	1959.7	313.84	313.84	316.55	-1
20	01-10-1959	1959.8	313.26	313.26	316.19	-1
21	01-11-1959	1959.9	314.8	314.8	316.78	-1
22	01-12-1959	1960	315.58	315.58	316.52	-1
23	01-01-1960	1960	316.43	316.43	316.51	-1
24	01-02-1960	1960.1	316.97	316.97	316.47	-1
25	01-03-1960	1960.2	317.58	317.58	316.49	-1
26	01-04-1960	1960.3	319.02	319.02	316.86	-1
27	01-05-1960	1960.4	320.03	320.03	317.24	-1

28	01-06-1960	1960.5	319.59	319.59	317.36	-1
29	01-07-1960	1960.5	318.18	318.18	317.3	-1
30	01-08-1960	1960.6	315.91	315.91	316.92	-1
31	01-09-1960	1960.7	314.16	314.16	316.87	-1
32	01-10-1960	1960.8	313.83	313.83	316.76	-1
33	01-11-1960	1960.9	315	315	316.98	-1
34	01-12-1960	1961	316.19	316.19	317.13	-1
35	01-01-1961	1961	316.93	316.93	317.03	-1
36	01-02-1961	1961.1	317.7	317.7	317.28	-1
37	01-03-1961	1961.2	318.54	318.54	317.47	-1
38	01-04-1961	1961.3	319.48	319.48	317.27	-1
39	01-05-1961	1961.4	320.58	320.58	317.7	-1
40	01-06-1961	1961.5	319.77	319.77	317.48	-1
41	01-07-1961	1961.5	318.57	318.57	317.7	-1
42	01-08-1961	1961.6	316.79	316.79	317.8	-1
43	01-09-1961	1961.7	314.8	314.8	317.49	-1
44	01-10-1961	1961.8	315.38	315.38	318.35	-1
45	01-11-1961	1961.9	316.1	316.1	318.13	-1
46	01-12-1961	1962	317.01	317.01	317.94	-1
47	01-01-1962	1962	317.94	317.94	318.06	-1
48	01-02-1962	1962.1	318.56	318.56	318.11	-1
49	01-03-1962	1962.2	319.68	319.68	318.57	-1
50	01-04-1962	1962.3	320.63	320.63	318.45	-1
51	01-05-1962	1962.4	321.01	321.01	318.2	-1
52	01-06-1962	1962.5	320.55	320.55	318.27	-1
53	01-07-1962	1962.5	319.58	319.58	318.67	-1
54	01-08-1962	1962.6	317.4	317.4	318.48	-1
55	01-09-1962	1962.7	316.26	316.26	319.03	-1
56	01-10-1962	1962.8	315.42	315.42	318.33	-1
57	01-11-1962	1962.9	316.69	316.69	318.62	-1
58	01-12-1962	1963	317.69	317.69	318.61	-1

59	01-01-1963	1963	318.74	318.74	318.91	-1
60	01-02-1963	1963.1	319.08	319.08	318.68	-1
61	01-03-1963	1963.2	319.86	319.86	318.69	-1
62	01-04-1963	1963.3	321.39	321.39	319.09	-1
63	01-05-1963	1963.4	322.25	322.25	319.39	-1
64	01-06-1963	1963.5	321.47	321.47	319.16	-1
65	01-07-1963	1963.5	319.74	319.74	318.77	-1
66	01-08-1963	1963.6	317.77	317.77	318.83	-1
67	01-09-1963	1963.7	316.21	316.21	319.06	-1
68	01-10-1963	1963.8	315.99	315.99	319	-1
69	01-11-1963	1963.9	317.12	317.12	319.1	-1
70	01-12-1963	1964	318.31	318.31	319.25	-1
71	01-01-1964	1964	319.57	319.57	319.67	-1
72	01-02-1964	1964.1	-99.99	320.07	319.61	-1
73	01-03-1964	1964.2	-99.99	320.73	319.55	-1
74	01-04-1964	1964.3	-99.99	321.77	319.48	-1
75	01-05-1964	1964.4	322.25	322.25	319.42	-1
76	01-06-1964	1964.5	321.89	321.89	319.69	-1
77	01-07-1964	1964.5	320.44	320.44	319.58	-1
78	01-08-1964	1964.6	318.7	318.7	319.81	-1
79	01-09-1964	1964.7	316.7	316.7	319.56	-1
80	01-10-1964	1964.8	316.79	316.79	319.78	-1
81	01-11-1964	1964.9	317.79	317.79	319.72	-1
82	01-12-1964	1965	318.71	318.71	319.59	-1
83	01-01-1965	1965	319.44	319.44	319.48	-1
84	01-02-1965	1965.1	320.44	320.44	319.97	-1
85	01-03-1965	1965.2	320.89	320.89	319.65	-1
86	01-04-1965	1965.3	322.13	322.13	319.8	-1
87	01-05-1965	1965.4	322.16	322.16	319.36	-1
88	01-06-1965	1965.5	321.87	321.87	319.65	-1
89	01-07-1965	1965.5	321.39	321.39	320.51	-1

90	01-08-1965	1965.6	318.81	318.81	319.93	-1
91	01-09-1965	1965.7	317.81	317.81	320.68	-1
92	01-10-1965	1965.8	317.3	317.3	320.36	-1
93	01-11-1965	1965.9	318.87	318.87	320.87	-1
94	01-12-1965	1966	319.42	319.42	320.26	-1
95	01-01-1966	1966	320.62	320.62	320.63	-1
96	01-02-1966	1966.1	321.59	321.59	321.1	-1
97	01-03-1966	1966.2	322.39	322.39	321.16	-1
98	01-04-1966	1966.3	323.87	323.87	321.51	-1
99	01-05-1966	1966.4	324.01	324.01	321.18	-1
100	01-06-1966	1966.5	323.75	323.75	321.52	-1
101	01-07-1966	1966.5	322.39	322.39	321.49	-1
102	01-08-1966	1966.6	320.37	320.37	321.5	-1
103	01-09-1966	1966.7	318.64	318.64	321.54	-1
104	01-10-1966	1966.8	318.1	318.1	321.18	-1
105	01-11-1966	1966.9	319.79	319.79	321.84	-1
106	01-12-1966	1967	321.08	321.08	321.95	-1
107	01-01-1967	1967	322.07	322.07	322.07	-1
108	01-02-1967	1967.1	322.5	322.5	321.94	-1
109	01-03-1967	1967.2	323.04	323.04	321.72	-1
110	01-04-1967	1967.3	324.42	324.42	322.05	-1
111	01-05-1967	1967.4	325	325	322.27	-1
112	01-06-1967	1967.5	324.09	324.09	321.94	-1
113	01-07-1967	1967.5	322.55	322.55	321.66	-1
114	01-08-1967	1967.6	320.92	320.92	322.04	-1
115	01-09-1967	1967.7	319.31	319.31	322.19	-1
116	01-10-1967	1967.8	319.31	319.31	322.36	-1
117	01-11-1967	1967.9	320.72	320.72	322.78	-1
118	01-12-1967	1968	321.96	321.96	322.86	-1
119	01-01-1968	1968	322.57	322.57	322.55	-1
120	01-02-1968	1968.1	323.15	323.15	322.56	-1

121	01-03-1968	1968.2	323.89	323.89	322.59	-1
122	01-04-1968	1968.3	325.02	325.02	322.73	-1
123	01-05-1968	1968.4	325.57	325.57	322.87	-1
124	01-06-1968	1968.5	325.36	325.36	323.2	-1
125	01-07-1968	1968.5	324.14	324.14	323.25	-1
126	01-08-1968	1968.6	322.03	322.03	323.15	-1
127	01-09-1968	1968.7	320.41	320.41	323.31	-1
128	01-10-1968	1968.8	320.25	320.25	323.32	-1
129	01-11-1968	1968.9	321.31	321.31	323.32	-1
130	01-12-1968	1969	322.84	322.84	323.69	-1
131	01-01-1969	1969	324	324	323.98	-1
132	01-02-1969	1969.1	324.42	324.42	323.89	-1
133	01-03-1969	1969.2	325.64	325.64	324.41	-1
134	01-04-1969	1969.3	326.66	326.66	324.35	-1
135	01-05-1969	1969.4	327.34	327.34	324.57	-1
136	01-06-1969	1969.5	326.76	326.76	324.63	-1
137	01-07-1969	1969.5	325.88	325.88	325.08	-1
138	01-08-1969	1969.6	323.67	323.67	324.8	-1
139	01-09-1969	1969.7	322.38	322.38	325.28	-1
140	01-10-1969	1969.8	321.78	321.78	324.84	-1
141	01-11-1969	1969.9	322.85	322.85	324.78	-1
142	01-12-1969	1970	324.11	324.11	324.88	-1
143	01-01-1970	1970	325.03	325.03	325.04	-1
144	01-02-1970	1970.1	325.99	325.99	325.42	-1
145	01-03-1970	1970.2	326.87	326.87	325.69	-1
146	01-04-1970	1970.3	328.13	328.13	325.86	-1
147	01-05-1970	1970.4	328.07	328.07	325.27	-1
148	01-06-1970	1970.5	327.66	327.66	325.52	-1
149	01-07-1970	1970.5	326.35	326.35	325.51	-1
150	01-08-1970	1970.6	324.69	324.69	325.76	-1
151	01-09-1970	1970.7	323.1	323.1	325.93	-1



152	01-10-1970	1970.8	323.16	323.16	326.15	-1
153	01-11-1970	1970.9	323.98	323.98	325.96	-1
154	01-12-1970	1971	325.13	325.13	326.06	-1
155	01-01-1971	1971	326.17	326.17	326.25	-1
156	01-02-1971	1971.1	326.68	326.68	326.1	-1
157	01-03-1971	1971.2	327.18	327.18	325.94	-1
158	01-04-1971	1971.3	327.78	327.78	325.47	-1
159	01-05-1971	1971.4	328.92	328.92	326.11	-1
160	01-06-1971	1971.5	328.57	328.57	326.4	-1
161	01-07-1971	1971.5	327.34	327.34	326.45	-1
162	01-08-1971	1971.6	325.46	325.46	326.49	-1
163	01-09-1971	1971.7	323.36	323.36	326.19	-1
164	01-10-1971	1971.8	323.57	323.57	326.58	-1
165	01-11-1971	1971.9	324.8	324.8	326.82	-1
166	01-12-1971	1972	326.01	326.01	327.02	-1
167	01-01-1972	1972	326.77	326.77	326.85	-1
168	01-02-1972	1972.1	327.63	327.63	327.04	-1
169	01-03-1972	1972.2	327.75	327.75	326.53	-1
170	01-04-1972	1972.3	329.72	329.72	327.42	-1
171	01-05-1972	1972.4	330.07	330.07	327.23	-1
172	01-06-1972	1972.5	329.09	329.09	326.92	-1
173	01-07-1972	1972.5	328.05	328.05	327.2	-1
174	01-08-1972	1972.6	326.32	326.32	327.37	-1
175	01-09-1972	1972.7	324.93	324.93	327.76	-1
176	01-10-1972	1972.8	325.06	325.06	328.06	-1
177	01-11-1972	1972.9	326.5	326.5	328.5	-1
178	01-12-1972	1973	327.55	327.55	328.55	-1
179	01-01-1973	1973	328.54	328.54	328.58	-1
180	01-02-1973	1973.1	329.56	329.56	328.86	-1
181	01-03-1973	1973.2	330.3	330.3	328.99	-1
182	01-04-1973	1973.3	331.5	331.5	329.14	-1

183	01-05-1973	1973.4	332.48	332.48	329.62	-1
184	01-06-1973	1973.5	332.07	332.07	329.94	-1
185	01-07-1973	1973.5	330.87	330.87	330.05	-1
186	01-08-1973	1973.6	329.31	329.31	330.42	-1
187	01-09-1973	1973.7	327.51	327.51	330.45	-1
188	01-10-1973	1973.8	327.18	327.18	330.23	-1
189	01-11-1973	1973.9	328.16	328.16	330.16	-1
190	01-12-1973	1974	328.64	328.64	329.66	-1
191	01-01-1974	1974	329.35	329.35	329.45	-1
192	01-02-1974	1974.1	330.71	330.71	330.12	-1
193	01-03-1974	1974.2	331.48	331.48	330.2	-1
194	01-04-1974	1974.3	332.65	332.65	330.26	-1
195	01-05-1974	1974.4	333.2	333.2	330.27	14
196	01-06-1974	1974.5	332.16	332.16	329.94	26
197	01-07-1974	1974.5	331.07	331.07	330.23	24
198	01-08-1974	1974.6	329.12	329.12	330.26	27
199	01-09-1974	1974.7	327.32	327.32	330.28	24
200	01-10-1974	1974.8	327.28	327.28	330.36	24
201	01-11-1974	1974.9	328.3	328.3	330.28	27
202	01-12-1974	1975	329.58	329.58	330.55	28
203	01-01-1975	1975	330.73	330.73	330.89	29
204	01-02-1975	1975.1	331.46	331.46	330.93	26
205	01-03-1975	1975.2	331.9	331.9	330.54	18
206	01-04-1975	1975.3	333.17	333.17	330.67	25
207	01-05-1975	1975.4	333.94	333.94	330.98	28
208	01-06-1975	1975.5	333.45	333.45	331.2	26
209	01-07-1975	1975.5	331.98	331.98	331.12	24
210	01-08-1975	1975.6	329.95	329.95	331.11	24
211	01-09-1975	1975.7	328.5	328.5	331.48	23
212	01-10-1975	1975.8	328.35	328.35	331.46	12
213	01-11-1975	1975.9	329.37	329.37	331.41	19

214	01-12-1975	1976	-99.99	330.59	331.6	0
215	01-01-1976	1976	331.59	331.59	331.79	20
216	01-02-1976	1976.1	332.75	332.75	332.2	22
217	01-03-1976	1976.2	333.52	333.52	332.05	20
218	01-04-1976	1976.3	334.64	334.64	332.13	19
219	01-05-1976	1976.4	334.77	334.77	331.84	22
220	01-06-1976	1976.5	334	334	331.65	17
221	01-07-1976	1976.5	333.06	333.06	332.14	16
222	01-08-1976	1976.6	330.68	330.68	331.88	23
223	01-09-1976	1976.7	328.95	328.95	331.94	13
224	01-10-1976	1976.8	328.75	328.75	331.92	20
225	01-11-1976	1976.9	330.15	330.15	332.29	25
226	01-12-1976	1977	331.62	331.62	332.66	20
227	01-01-1977	1977	332.66	332.66	332.76	24
228	01-02-1977	1977.1	333.13	333.13	332.51	19
229	01-03-1977	1977.2	334.95	334.95	333.35	23
230	01-04-1977	1977.3	336.13	336.13	333.51	21
231	01-05-1977	1977.4	336.93	336.93	333.98	20
232	01-06-1977	1977.5	336.17	336.17	333.8	22
233	01-07-1977	1977.5	334.88	334.88	334.02	21
234	01-08-1977	1977.6	332.56	332.56	333.91	18
235	01-09-1977	1977.7	331.29	331.29	334.36	19
236	01-10-1977	1977.8	331.27	331.27	334.52	23
237	01-11-1977	1977.9	332.41	332.41	334.64	21
238	01-12-1977	1978	333.6	333.6	334.61	26
239	01-01-1978	1978	334.95	334.95	335.01	22
240	01-02-1978	1978.1	335.25	335.25	334.58	25
241	01-03-1978	1978.2	336.66	336.66	335	28
242	01-04-1978	1978.3	337.69	337.69	335.06	18
243	01-05-1978	1978.4	338.03	338.03	335.06	26
244	01-06-1978	1978.5	338.01	338.01	335.59	17

245	01-07-1978	1978.5	336.41	336.41	335.57	22
246	01-08-1978	1978.6	334.41	334.41	335.87	19
247	01-09-1978	1978.7	332.37	332.37	335.51	17
248	01-10-1978	1978.8	332.41	332.41	335.68	23
249	01-11-1978	1978.9	333.75	333.75	335.99	24
250	01-12-1978	1979	334.9	334.9	335.88	27
251	01-01-1979	1979	336.14	336.14	336.22	27
252	01-02-1979	1979.1	336.69	336.69	336.01	26
253	01-03-1979	1979.2	338.27	338.27	336.54	21
254	01-04-1979	1979.3	338.95	338.95	336.24	21
255	01-05-1979	1979.4	339.21	339.21	336.21	12
256	01-06-1979	1979.5	339.26	339.26	336.84	19
257	01-07-1979	1979.5	337.54	337.54	336.72	26
258	01-08-1979	1979.6	335.75	335.75	337.24	23
259	01-09-1979	1979.7	333.98	333.98	337.2	19
260	01-10-1979	1979.8	334.19	334.19	337.53	24
261	01-11-1979	1979.9	335.31	335.31	337.57	27
262	01-12-1979	1980	336.81	336.81	337.79	22
263	01-01-1980	1980	337.9	337.9	338.09	29
264	01-02-1980	1980.1	338.34	338.34	337.82	26
265	01-03-1980	1980.2	340.01	340.01	338.43	25
266	01-04-1980	1980.3	340.93	340.93	338.3	24
267	01-05-1980	1980.4	341.48	341.48	338.43	25
268	01-06-1980	1980.5	341.33	341.33	338.84	22
269	01-07-1980	1980.5	339.4	339.4	338.54	21
270	01-08-1980	1980.6	337.7	337.7	339.12	17
271	01-09-1980	1980.7	336.19	336.19	339.33	17
272	01-10-1980	1980.8	336.15	336.15	339.42	25
273	01-11-1980	1980.9	337.27	337.27	339.42	24
274	01-12-1980	1981	338.32	338.32	339.26	19
275	01-01-1981	1981	339.29	339.29	339.38	28

276	01-02-1981	1981.1	340.55	340.55	339.93	25
277	01-03-1981	1981.2	341.61	341.61	340.06	25
278	01-04-1981	1981.3	342.53	342.53	339.94	24
279	01-05-1981	1981.4	343.03	343.03	339.98	30
280	01-06-1981	1981.5	342.54	342.54	340.07	25
281	01-07-1981	1981.5	340.78	340.78	339.92	24
282	01-08-1981	1981.6	338.44	338.44	339.86	26
283	01-09-1981	1981.7	336.95	336.95	340.17	27
284	01-10-1981	1981.8	337.08	337.08	340.43	28
285	01-11-1981	1981.9	338.58	338.58	340.74	25
286	01-12-1981	1982	339.88	339.88	340.79	19
287	01-01-1982	1982	340.96	340.96	341.1	27
288	01-02-1982	1982.1	341.73	341.73	341.1	23
289	01-03-1982	1982.2	342.81	342.81	341.21	18
290	01-04-1982	1982.3	343.97	343.97	341.37	8
291	01-05-1982	1982.4	344.63	344.63	341.56	26
292	01-06-1982	1982.5	343.79	343.79	341.35	26
293	01-07-1982	1982.5	342.32	342.32	341.55	28
294	01-08-1982	1982.6	340.09	340.09	341.51	24
295	01-09-1982	1982.7	338.28	338.28	341.47	21
296	01-10-1982	1982.8	338.29	338.29	341.65	26
297	01-11-1982	1982.9	339.6	339.6	341.73	25
298	01-12-1982	1983	340.9	340.9	341.79	26
299	01-01-1983	1983	341.68	341.68	341.84	28
300	01-02-1983	1983.1	342.9	342.9	342.32	24
301	01-03-1983	1983.2	343.33	343.33	341.82	26
302	01-04-1983	1983.3	345.25	345.25	342.66	24
303	01-05-1983	1983.4	346.03	346.03	342.87	28
304	01-06-1983	1983.5	345.63	345.63	343.15	20
305	01-07-1983	1983.5	344.19	344.19	343.44	20
306	01-08-1983	1983.6	342.27	342.27	343.66	16

307	01-09-1983	1983.7	340.35	340.35	343.49	15
308	01-10-1983	1983.8	340.38	340.38	343.72	20
309	01-11-1983	1983.9	341.59	341.59	343.71	26
310	01-12-1983	1984	343.05	343.05	343.96	19
311	01-01-1984	1984	344.1	344.1	344.2	23
312	01-02-1984	1984.1	344.79	344.79	344.22	23
313	01-03-1984	1984.2	345.52	345.52	344.09	19
314	01-04-1984	1984.3	-99.99	346.84	344.27	2
315	01-05-1984	1984.4	347.63	347.63	344.45	21
316	01-06-1984	1984.5	346.97	346.97	344.51	21
317	01-07-1984	1984.5	345.53	345.53	344.76	21
318	01-08-1984	1984.6	343.55	343.55	344.94	12
319	01-09-1984	1984.7	341.4	341.4	344.58	14
320	01-10-1984	1984.8	341.67	341.67	345.01	12
321	01-11-1984	1984.9	343.1	343.1	345.2	18
322	01-12-1984	1985	344.7	344.7	345.57	12
323	01-01-1985	1985	345.21	345.21	345.31	23
324	01-02-1985	1985.1	346.16	346.16	345.61	17
325	01-03-1985	1985.2	347.74	347.74	346.37	16
326	01-04-1985	1985.3	348.34	348.34	345.79	19
327	01-05-1985	1985.4	349.06	349.06	345.91	24
328	01-06-1985	1985.5	348.38	348.38	345.94	23
329	01-07-1985	1985.5	346.71	346.71	345.89	18
330	01-08-1985	1985.6	345.02	345.02	346.34	18
331	01-09-1985	1985.7	343.27	343.27	346.4	25
332	01-10-1985	1985.8	343.13	343.13	346.42	20
333	01-11-1985	1985.9	344.49	344.49	346.61	22
334	01-12-1985	1986	345.88	345.88	346.81	25
335	01-01-1986	1986	346.56	346.56	346.59	23
336	01-02-1986	1986.1	347.28	347.28	346.74	25
337	01-03-1986	1986.2	348.01	348.01	346.68	17

338	01-04-1986	1986.3	349.77	349.77	347.22	22
339	01-05-1986	1986.4	350.38	350.38	347.26	18
340	01-06-1986	1986.5	349.93	349.93	347.52	17
341	01-07-1986	1986.5	348.16	348.16	347.33	20
342	01-08-1986	1986.6	346.08	346.08	347.41	18
343	01-09-1986	1986.7	345.22	345.22	348.35	17
344	01-10-1986	1986.8	344.51	344.51	347.77	26
345	01-11-1986	1986.9	345.93	345.93	348.04	23
346	01-12-1986	1987	347.22	347.22	348.13	24
347	01-01-1987	1987	348.52	348.52	348.47	26
348	01-02-1987	1987.1	348.73	348.73	348.02	25
349	01-03-1987	1987.2	349.73	349.73	348.3	22
350	01-04-1987	1987.3	351.31	351.31	348.77	26
351	01-05-1987	1987.4	352.09	352.09	349.01	27
352	01-06-1987	1987.5	351.53	351.53	349.2	21
353	01-07-1987	1987.5	350.11	350.11	349.39	16
354	01-08-1987	1987.6	348.08	348.08	349.5	14
355	01-09-1987	1987.7	346.52	346.52	349.7	23
356	01-10-1987	1987.8	346.59	346.59	349.86	22
357	01-11-1987	1987.9	347.96	347.96	350.07	22
358	01-12-1987	1988	349.16	349.16	350.05	27
359	01-01-1988	1988	350.39	350.39	350.38	24
360	01-02-1988	1988.1	351.64	351.64	350.94	24
361	01-03-1988	1988.2	352.41	352.41	350.87	25
362	01-04-1988	1988.3	353.69	353.69	351.01	27
363	01-05-1988	1988.4	354.21	354.21	351.06	28
364	01-06-1988	1988.5	353.72	353.72	351.37	26
365	01-07-1988	1988.5	352.69	352.69	352.02	27
366	01-08-1988	1988.6	350.4	350.4	351.9	26
367	01-09-1988	1988.7	348.92	348.92	352.13	27
368	01-10-1988	1988.8	349.13	349.13	352.41	26

369	01-11-1988	1988.9	350.2	350.2	352.34	25
370	01-12-1988	1989	351.41	351.41	352.35	28
371	01-01-1989	1989	352.91	352.91	352.85	27
372	01-02-1989	1989.1	353.27	353.27	352.54	25
373	01-03-1989	1989.2	353.96	353.96	352.47	29
374	01-04-1989	1989.3	355.64	355.64	352.97	28
375	01-05-1989	1989.4	355.86	355.86	352.67	28
376	01-06-1989	1989.5	355.37	355.37	352.97	26
377	01-07-1989	1989.5	353.99	353.99	353.3	25
378	01-08-1989	1989.6	351.81	351.81	353.37	24
379	01-09-1989	1989.7	350.05	350.05	353.32	23
380	01-10-1989	1989.8	350.25	350.25	353.52	25
381	01-11-1989	1989.9	351.49	351.49	353.65	27
382	01-12-1989	1990	352.85	352.85	353.8	27
383	01-01-1990	1990	353.8	353.8	353.75	25
384	01-02-1990	1990.1	355.04	355.04	354.33	28
385	01-03-1990	1990.2	355.73	355.73	354.24	28
386	01-04-1990	1990.3	356.32	356.32	353.68	28
387	01-05-1990	1990.4	357.32	357.32	354.16	29
388	01-06-1990	1990.5	356.34	356.34	353.97	29
389	01-07-1990	1990.5	354.84	354.84	354.19	30
390	01-08-1990	1990.6	353.01	353.01	354.61	22
391	01-09-1990	1990.7	351.31	351.31	354.61	27
392	01-10-1990	1990.8	351.62	351.62	354.89	28
393	01-11-1990	1990.9	353.07	353.07	355.13	24
394	01-12-1990	1991	354.33	354.33	355.19	28
395	01-01-1991	1991	354.84	354.84	354.82	28
396	01-02-1991	1991.1	355.73	355.73	355.02	27
397	01-03-1991	1991.2	357.23	357.23	355.67	30
398	01-04-1991	1991.3	358.66	358.66	356.02	30
399	01-05-1991	1991.4	359.13	359.13	356	29



400	01-06-1991	1991.5	358.13	358.13	355.8	29
401	01-07-1991	1991.5	356.19	356.19	355.59	24
402	01-08-1991	1991.6	353.85	353.85	355.46	25
403	01-09-1991	1991.7	352.25	352.25	355.56	27
404	01-10-1991	1991.8	352.35	352.35	355.61	27
405	01-11-1991	1991.9	353.81	353.81	355.8	28
406	01-12-1991	1992	355.12	355.12	355.93	30
407	01-01-1992	1992	356.25	356.25	356.2	31
408	01-02-1992	1992.1	357.11	357.11	356.38	27
409	01-03-1992	1992.2	357.86	357.86	356.27	24
410	01-04-1992	1992.3	359.09	359.09	356.39	27
411	01-05-1992	1992.4	359.59	359.59	356.41	26
412	01-06-1992	1992.5	359.33	359.33	356.97	30
413	01-07-1992	1992.5	357.01	357.01	356.44	26
414	01-08-1992	1992.6	354.94	354.94	356.62	23
415	01-09-1992	1992.7	352.96	352.96	356.29	26
416	01-10-1992	1992.8	353.32	353.32	356.63	29
417	01-11-1992	1992.9	354.32	354.32	356.38	29
418	01-12-1992	1993	355.57	355.57	356.39	31
419	01-01-1993	1993	357	357	356.96	28
420	01-02-1993	1993.1	357.31	357.31	356.44	28
421	01-03-1993	1993.2	358.47	358.47	356.76	30
422	01-04-1993	1993.3	359.27	359.27	356.59	25
423	01-05-1993	1993.4	360.19	360.19	357.03	30
424	01-06-1993	1993.5	359.52	359.52	357.12	28
425	01-07-1993	1993.5	357.33	357.33	356.76	25
426	01-08-1993	1993.6	355.64	355.64	357.32	27
427	01-09-1993	1993.7	354.03	354.03	357.39	23
428	01-10-1993	1993.8	354.12	354.12	357.49	28
429	01-11-1993	1993.9	355.41	355.41	357.54	29
430	01-12-1993	1994	356.91	356.91	357.8	30

431	01-01-1994	1994	358.24	358.24	358.13	27
432	01-02-1994	1994.1	358.92	358.92	358.09	25
433	01-03-1994	1994.2	359.99	359.99	358.29	29
434	01-04-1994	1994.3	361.23	361.23	358.46	28
435	01-05-1994	1994.4	361.65	361.65	358.46	30
436	01-06-1994	1994.5	360.81	360.81	358.44	27
437	01-07-1994	1994.5	359.38	359.38	358.79	31
438	01-08-1994	1994.6	357.46	357.46	359.16	24
439	01-09-1994	1994.7	355.73	355.73	359.17	24
440	01-10-1994	1994.8	356.07	356.07	359.49	28
441	01-11-1994	1994.9	357.53	357.53	359.68	28
442	01-12-1994	1995	358.98	358.98	359.83	28
443	01-01-1995	1995	359.92	359.92	359.79	30
444	01-02-1995	1995.1	360.86	360.86	360.05	28
445	01-03-1995	1995.2	361.83	361.83	360.22	29
446	01-04-1995	1995.3	363.3	363.3	360.62	29
447	01-05-1995	1995.4	363.69	363.69	360.58	29
448	01-06-1995	1995.5	363.19	363.19	360.84	27
449	01-07-1995	1995.5	361.64	361.64	360.97	28
450	01-08-1995	1995.6	359.12	359.12	360.73	25
451	01-09-1995	1995.7	358.17	358.17	361.55	24
452	01-10-1995	1995.8	357.99	357.99	361.37	29
453	01-11-1995	1995.9	359.45	359.45	361.59	27
454	01-12-1995	1996	360.68	360.68	361.53	30
455	01-01-1996	1996	362.07	362.07	361.85	29
456	01-02-1996	1996.1	363.24	363.24	362.35	27
457	01-03-1996	1996.2	364.17	364.17	362.53	27
458	01-04-1996	1996.3	364.57	364.57	361.86	29
459	01-05-1996	1996.4	365.13	365.13	362.1	30
460	01-06-1996	1996.5	364.92	364.92	362.69	30
461	01-07-1996	1996.5	363.55	363.55	362.85	31

462	01-08-1996	1996.6	361.38	361.38	362.98	28
463	01-09-1996	1996.7	359.54	359.54	362.99	25
464	01-10-1996	1996.8	359.58	359.58	362.97	29
465	01-11-1996	1996.9	360.89	360.89	363.03	29
466	01-12-1996	1997	362.24	362.24	363.08	29
467	01-01-1997	1997	363.09	363.09	362.88	31
468	01-02-1997	1997.1	364.03	364.03	363.22	27
469	01-03-1997	1997.2	364.51	364.51	362.88	31
470	01-04-1997	1997.3	366.35	366.35	363.68	21
471	01-05-1997	1997.4	366.64	366.64	363.74	29
472	01-06-1997	1997.5	365.59	365.59	363.41	27
473	01-07-1997	1997.5	364.31	364.31	363.6	24
474	01-08-1997	1997.6	362.25	362.25	363.84	25
475	01-09-1997	1997.7	360.29	360.29	363.68	26
476	01-10-1997	1997.8	360.82	360.82	364.12	27
477	01-11-1997	1997.9	362.49	362.49	364.56	30
478	01-12-1997	1998	364.38	364.38	365.15	30
479	01-01-1998	1998	365.26	365.26	365.07	30
480	01-02-1998	1998.1	365.98	365.98	365.17	28
481	01-03-1998	1998.2	367.24	367.24	365.6	31
482	01-04-1998	1998.3	368.66	368.66	366.03	29
483	01-05-1998	1998.4	369.42	369.42	366.55	30
484	01-06-1998	1998.5	368.99	368.99	366.8	28
485	01-07-1998	1998.5	367.82	367.82	367.14	23
486	01-08-1998	1998.6	365.95	365.95	367.55	30
487	01-09-1998	1998.7	364.02	364.02	367.37	28
488	01-10-1998	1998.8	364.4	364.4	367.67	30
489	01-11-1998	1998.9	365.52	365.52	367.56	23
490	01-12-1998	1999	367.13	367.13	367.88	26
491	01-01-1999	1999	368.18	368.18	367.96	27
492	01-02-1999	1999.1	369.07	369.07	368.26	22

493	01-03-1999	1999.2	369.68	369.68	368.08	25
494	01-04-1999	1999.3	370.99	370.99	368.45	29
495	01-05-1999	1999.4	370.96	370.96	368.15	26
496	01-06-1999	1999.5	370.3	370.3	368.13	26
497	01-07-1999	1999.5	369.45	369.45	368.77	27
498	01-08-1999	1999.6	366.9	366.9	368.48	25
499	01-09-1999	1999.7	364.81	364.81	368.13	28
500	01-10-1999	1999.8	365.37	365.37	368.64	31
501	01-11-1999	1999.9	366.72	366.72	368.71	28
502	01-12-1999	2000	368.1	368.1	368.77	26
503	01-01-2000	2000	369.29	369.29	369.08	26
504	01-02-2000	2000.1	369.54	369.54	368.83	19
505	01-03-2000	2000.2	370.6	370.6	369.09	30
506	01-04-2000	2000.3	371.81	371.81	369.28	27
507	01-05-2000	2000.4	371.58	371.58	368.71	28
508	01-06-2000	2000.5	371.7	371.7	369.5	28
509	01-07-2000	2000.5	369.86	369.86	369.2	25
510	01-08-2000	2000.6	368.13	368.13	369.72	27
511	01-09-2000	2000.7	367	367	370.3	26
512	01-10-2000	2000.8	367.03	367.03	370.26	30
513	01-11-2000	2000.9	368.37	368.37	370.32	25
514	01-12-2000	2001	369.67	369.67	370.3	30
515	01-01-2001	2001	370.59	370.59	370.43	30
516	01-02-2001	2001.1	371.51	371.51	370.78	26
517	01-03-2001	2001.2	372.43	372.43	370.87	26
518	01-04-2001	2001.3	373.37	373.37	370.81	29
519	01-05-2001	2001.4	373.85	373.85	370.94	24
520	01-06-2001	2001.5	373.21	373.21	370.99	26
521	01-07-2001	2001.5	371.51	371.51	370.9	25
522	01-08-2001	2001.6	369.61	369.61	371.22	27
523	01-09-2001	2001.7	368.18	368.18	371.44	28

524	01-10-2001	2001.8	368.45	368.45	371.69	31
525	01-11-2001	2001.9	369.76	369.76	371.74	24
526	01-12-2001	2002	371.24	371.24	371.92	29
527	01-01-2002	2002	372.53	372.53	372.3	28
528	01-02-2002	2002.1	373.2	373.2	372.33	28
529	01-03-2002	2002.2	374.12	374.12	372.44	24
530	01-04-2002	2002.3	375.02	375.02	372.37	29
531	01-05-2002	2002.4	375.76	375.76	372.81	29
532	01-06-2002	2002.5	375.52	375.52	373.3	28
533	01-07-2002	2002.5	374.01	374.01	373.42	26
534	01-08-2002	2002.6	371.85	371.85	373.52	28
535	01-09-2002	2002.7	370.75	370.75	374.11	23
536	01-10-2002	2002.8	370.55	370.55	373.88	31
537	01-11-2002	2002.9	372.25	372.25	374.34	29
538	01-12-2002	2003	373.79	373.79	374.53	31
539	01-01-2003	2003	374.88	374.88	374.63	30
540	01-02-2003	2003.1	375.64	375.64	374.77	27
541	01-03-2003	2003.2	376.45	376.45	374.8	28
542	01-04-2003	2003.3	377.73	377.73	375.06	27
543	01-05-2003	2003.4	378.6	378.6	375.55	30
544	01-06-2003	2003.5	378.28	378.28	376.03	25
545	01-07-2003	2003.5	376.7	376.7	376.19	29
546	01-08-2003	2003.6	374.38	374.38	376.08	23
547	01-09-2003	2003.7	373.17	373.17	376.48	25
548	01-10-2003	2003.8	373.14	373.14	376.47	30
549	01-11-2003	2003.9	374.66	374.66	376.81	26
550	01-12-2003	2004	375.99	375.99	376.75	27
551	01-01-2004	2004	377	377	376.78	30
552	01-02-2004	2004.1	377.87	377.87	377.02	29
553	01-03-2004	2004.2	378.88	378.88	377.23	28
554	01-04-2004	2004.3	380.35	380.35	377.62	26

555	01-05-2004	2004.4	380.62	380.62	377.48	28
556	01-06-2004	2004.5	379.69	379.69	377.39	21
557	01-07-2004	2004.5	377.47	377.47	376.94	25
558	01-08-2004	2004.6	376.01	376.01	377.74	16
559	01-09-2004	2004.7	374.25	374.25	377.62	15
560	01-10-2004	2004.8	374.46	374.46	377.82	29
561	01-11-2004	2004.9	376.16	376.16	378.31	29
562	01-12-2004	2005	377.51	377.51	378.31	30
563	01-01-2005	2005	378.46	378.46	378.21	31
564	01-02-2005	2005.1	379.73	379.73	378.93	24
565	01-03-2005	2005.2	380.77	380.77	379.27	26
566	01-04-2005	2005.3	382.29	382.29	379.65	26
567	01-05-2005	2005.4	382.45	382.45	379.31	31
568	01-06-2005	2005.5	382.21	382.21	379.88	28
569	01-07-2005	2005.5	380.74	380.74	380.18	29
570	01-08-2005	2005.6	378.74	378.74	380.42	26
571	01-09-2005	2005.7	376.7	376.7	380.01	26
572	01-10-2005	2005.8	377	377	380.3	14
573	01-11-2005	2005.9	378.35	378.35	380.5	23
574	01-12-2005	2006	380.11	380.11	380.9	26
575	01-01-2006	2006	381.38	381.38	381.14	24
576	01-02-2006	2006.1	382.19	382.19	381.38	25
577	01-03-2006	2006.2	382.67	382.67	381.14	30
578	01-04-2006	2006.3	384.61	384.61	381.91	25
579	01-05-2006	2006.4	385.03	385.03	381.87	24
580	01-06-2006	2006.5	384.05	384.05	381.75	28
581	01-07-2006	2006.5	382.46	382.46	381.91	24
582	01-08-2006	2006.6	380.41	380.41	382.08	27
583	01-09-2006	2006.7	378.85	378.85	382.16	27
584	01-10-2006	2006.8	379.13	379.13	382.46	23
585	01-11-2006	2006.9	380.15	380.15	382.33	29

586	01-12-2006	2007	381.82	381.82	382.64	27
587	01-01-2007	2007	382.89	382.89	382.67	24
588	01-02-2007	2007.1	383.9	383.9	383.01	21
589	01-03-2007	2007.2	384.58	384.58	382.94	26
590	01-04-2007	2007.3	386.5	386.5	383.71	26
591	01-05-2007	2007.4	386.56	386.56	383.34	29
592	01-06-2007	2007.5	386.1	386.1	383.84	26
593	01-07-2007	2007.5	384.5	384.5	384.02	27
594	01-08-2007	2007.6	381.99	381.99	383.7	22
595	01-09-2007	2007.7	380.96	380.96	384.32	21
596	01-10-2007	2007.8	381.12	381.12	384.47	29
597	01-11-2007	2007.9	382.45	382.45	384.65	30
598	01-12-2007	2008	383.95	383.95	384.83	21
599	01-01-2008	2008	385.52	385.52	385.28	31
600	01-02-2008	2008.1	385.82	385.82	384.96	26
601	01-03-2008	2008.2	386.03	386.03	384.48	30
602	01-04-2008	2008.3	387.21	387.21	384.58	24
603	01-05-2008	2008.4	388.54	388.54	385.45	25
604	01-06-2008	2008.5	387.76	387.76	385.46	23
605	01-07-2008	2008.5	386.36	386.36	385.8	10
606	01-08-2008	2008.6	384.09	384.09	385.75	25
607	01-09-2008	2008.7	383.18	383.18	386.46	27
608	01-10-2008	2008.8	382.99	382.99	386.27	23
609	01-11-2008	2008.9	384.19	384.19	386.37	28
610	01-12-2008	2009	385.56	385.56	386.41	29
611	01-01-2009	2009	386.94	386.94	386.63	30
612	01-02-2009	2009.1	387.48	387.48	386.59	26
613	01-03-2009	2009.2	388.82	388.82	387.32	28
614	01-04-2009	2009.3	389.55	389.55	386.92	29
615	01-05-2009	2009.4	390.14	390.14	387.02	30
616	01-06-2009	2009.5	389.48	389.48	387.24	29

617	01-07-2009	2009.5	388.03	388.03	387.55	22
618	01-08-2009	2009.6	386.11	386.11	387.8	27
619	01-09-2009	2009.7	384.74	384.74	388.01	28
620	01-10-2009	2009.8	384.43	384.43	387.68	30
621	01-11-2009	2009.9	386.02	386.02	388.16	30
622	01-12-2009	2010	387.42	387.42	388.23	20
623	01-01-2010	2010	388.71	388.71	388.41	30
624	01-02-2010	2010.1	390.2	390.2	389.26	20
625	01-03-2010	2010.2	391.17	391.17	389.65	25
626	01-04-2010	2010.3	392.46	392.46	389.89	26
627	01-05-2010	2010.4	393	393	389.88	28
628	01-06-2010	2010.5	392.15	392.15	389.89	28
629	01-07-2010	2010.5	390.2	390.2	389.72	29
630	01-08-2010	2010.6	388.35	388.35	390.01	26
631	01-09-2010	2010.7	386.85	386.85	390.14	29
632	01-10-2010	2010.8	387.24	387.24	390.53	31
633	01-11-2010	2010.9	388.67	388.67	390.79	28
634	01-12-2010	2011	389.79	389.79	390.6	29
635	01-01-2011	2011	391.33	391.33	391.03	29
636	01-02-2011	2011.1	391.86	391.86	390.94	28
637	01-03-2011	2011.2	392.6	392.6	391.07	29
638	01-04-2011	2011.3	393.25	393.25	390.63	28
639	01-05-2011	2011.4	394.19	394.19	391.02	30
640	01-06-2011	2011.5	393.73	393.73	391.44	28
641	01-07-2011	2011.5	392.51	392.51	392.04	26
642	01-08-2011	2011.6	390.13	390.13	391.83	27
643	01-09-2011	2011.7	389.08	389.08	392.4	26
644	01-10-2011	2011.8	389	389	392.33	31
645	01-11-2011	2011.9	390.28	390.28	392.44	28
646	01-12-2011	2012	391.86	391.86	392.66	28
647	01-01-2012	2012	393.12	393.12	392.89	30



648	01-02-2012	2012.1	393.86	393.86	393.04	26
649	01-03-2012	2012.2	394.4	394.4	392.8	30
650	01-04-2012	2012.3	396.18	396.18	393.43	29
651	01-05-2012	2012.4	396.74	396.74	393.54	30
652	01-06-2012	2012.5	395.71	395.71	393.45	28
653	01-07-2012	2012.5	394.36	394.36	393.92	26
654	01-08-2012	2012.6	392.39	392.39	394.17	30
655	01-09-2012	2012.7	391.11	391.11	394.54	27
656	01-10-2012	2012.8	391.05	391.05	394.41	28
657	01-11-2012	2012.9	392.98	392.98	395.02	29
658	01-12-2012	2013	394.34	394.34	395.04	29
659	01-01-2013	2013	395.55	395.55	395.4	28
660	01-02-2013	2013.1	396.8	396.8	396.01	25
661	01-03-2013	2013.2	397.43	397.43	395.84	30
662	01-04-2013	2013.3	398.41	398.41	395.53	22
663	01-05-2013	2013.4	399.78	399.78	396.4	28
664	01-06-2013	2013.5	398.61	398.61	396.28	26
665	01-07-2013	2013.5	397.32	397.32	396.92	21
666	01-08-2013	2013.6	395.2	395.2	397.08	27
667	01-09-2013	2013.7	393.45	393.45	396.99	27
668	01-10-2013	2013.8	393.7	393.7	397.04	28
669	01-11-2013	2013.9	395.16	395.16	397.15	30
670	01-12-2013	2014	396.84	396.84	397.59	30
671	01-01-2014	2014	397.85	397.85	397.55	31
672	01-02-2014	2014.1	398.01	398.01	397.21	26
673	01-03-2014	2014.2	399.77	399.77	398.24	24
674	01-04-2014	2014.3	401.38	401.38	398.49	28
675	01-05-2014	2014.4	401.78	401.78	398.37	22
676	01-06-2014	2014.5	401.25	401.25	398.93	28
677	01-07-2014	2014.5	399.1	399.1	398.67	25
678	01-08-2014	2014.6	397.03	397.03	398.92	21

679	01-09-2014	2014.7	395.38	395.38	398.97	21
680	01-10-2014	2014.8	396.03	396.03	399.43	24
681	01-11-2014	2014.9	397.28	397.28	399.36	27
682	01-12-2014	2015	398.91	398.91	399.64	29
683	01-01-2015	2015	399.98	399.98	399.69	30
684	01-02-2015	2015.1	400.28	400.28	399.51	27
685	01-03-2015	2015.2	401.54	401.54	400.05	24
686	01-04-2015	2015.3	403.28	403.28	400.49	27
687	01-05-2015	2015.4	403.96	403.96	400.63	30
688	01-06-2015	2015.5	402.8	402.8	400.5	28
689	01-07-2015	2015.5	401.31	401.31	400.92	23
690	01-08-2015	2015.6	398.93	398.93	400.84	28
691	01-09-2015	2015.7	397.63	397.63	401.15	25
692	01-10-2015	2015.8	398.29	398.29	401.59	28
693	01-11-2015	2015.9	400.16	400.16	402.13	27
694	01-12-2015	2016	401.85	401.85	402.52	30
695	01-01-2016	2016	402.56	402.56	402.27	27
696	01-02-2016	2016.1	404.12	404.12	403.34	25
697	01-03-2016	2016.2	404.87	404.87	403.38	28
698	01-04-2016	2016.3	407.45	407.45	404.65	25
699	01-05-2016	2016.4	407.72	407.72	404.4	29
700	01-06-2016	2016.5	406.83	406.83	404.53	26
701	01-07-2016	2016.5	404.41	404.41	404.03	28
702	01-08-2016	2016.6	402.27	402.27	404.18	23
703	01-09-2016	2016.7	401.05	401.05	404.56	24
704	01-10-2016	2016.8	401.59	401.59	404.89	29
705	01-11-2016	2016.9	403.55	403.55	405.53	27
706	01-12-2016	2017	404.45	404.45	405.11	30
707	01-01-2017	2017	406.17	406.17	405.88	26
708	01-02-2017	2017.1	406.46	406.46	405.68	26
709	01-03-2017	2017.2	407.22	407.22	405.73	23

710	01-04-2017	2017.3	409.04	409.04	406.25	25
711	01-05-2017	2017.4	409.69	409.69	406.36	27
712	01-06-2017	2017.5	408.88	408.88	406.58	26
713	01-07-2017	2017.5	407.12	407.12	406.74	28
714	01-08-2017	2017.6	405.13	405.13	407.04	29
715	01-09-2017	2017.7	403.37	403.37	406.88	26
716	01-10-2017	2017.8	403.63	403.63	406.93	27
717	01-11-2017	2017.9	405.12	405.12	407.09	26
718	01-12-2017	2018	406.81	406.81	407.47	31
719	01-01-2018	2018	407.96	407.96	407.67	29
720	01-02-2018	2018.1	408.32	408.32	407.54	28
721	01-03-2018	2018.2	409.41	409.41	407.92	30
722	01-04-2018	2018.3	410.24	410.24	407.45	21
723	01-05-2018	2018.4	411.24	411.24	407.91	24
724	01-06-2018	2018.5	410.79	410.79	408.49	29
725	01-07-2018	2018.5	408.71	408.71	408.32	27
726	01-08-2018	2018.6	406.99	406.99	408.9	30
727	01-09-2018	2018.7	405.51	405.51	409.02	29

(Table 2)

**III. ANALYSIS**

Years	Average Trend of Co2 Levels	Years 2	X- Mid	Value
1958	315.283	1958	-30.5	1744.470191
1959	315.9741667	1959	-29.5	1745.103968
1960	316.9075	1960	-28.5	1745.737745
1961	317.6366667	1961	-27.5	1746.371521
1962	318.45	1962	-26.5	1747.005298
1963	318.9941667	1963	-25.5	1747.639075
1964	319.6216667	1964	-24.5	1748.272852
1965	320.0433333	1965	-23.5	1748.906629
1966	321.3833333	1966	-22.5	1749.540406
1967	322.1566667	1967	-21.5	1750.174183
1968	323.045	1968	-20.5	1750.80796
1969	324.6241667	1969	-19.5	1751.441737
1970	325.6808333	1970	-18.5	1752.075513
1971	326.3183333	1971	-17.5	1752.70929
1972	327.4525	1972	-16.5	1753.343067
1973	329.675	1973	-15.5	1753.976844
1974	330.1833333	1974	-14.5	1754.610621
1975	331.1158333	1975	-13.5	1755.244398
1976	332.0408333	1976	-12.5	1755.878175
1977	333.8308333	1977	-11.5	1756.511952
1978	335.4	1978	-10.5	1757.145729
1979	336.8425	1979	-9.5	1757.779505
1980	338.75	1980	-8.5	1758.413282
1981	340.1058333	1981	-7.5	1759.047059
1982	341.4491667	1982	-6.5	1759.680836
1983	343.0533333	1983	-5.5	1760.314613
1984	344.65	1984	-4.5	1760.94839

1985	346.1166667	1985	-3.5	1761.582167
1986	347.42	1986	-2.5	1762.215944
1987	349.195	1987	-1.5	1762.84972
1988	351.565	1988	-0.5	1763.483497
1989	353.1191667	1989	0.5	1764.117274
1990	354.3958333	1990	1.5	1764.751051
1991	355.6066667	1991	2.5	1765.384828
1992	356.4475	1992	3.5	1766.018605
1993	357.1	1993	4.5	1766.652382
1994	358.8325	1994	5.5	1767.286159
1995	360.82	1995	6.5	1767.919936
1996	362.6066667	1996	7.5	1768.553712
1997	363.73	1997	8.5	1769.187489
1998	366.6991667	1998	9.5	1769.821266
1999	368.3775	1999	10.5	1770.455043
2000	369.5491667	2000	11.5	1771.08882
2001	371.1441667	2001	12.5	1771.722597
2002	373.2791667	2002	13.5	1772.356374
2003	375.8016667	2003	14.5	1772.990151
2004	377.5216667	2004	15.5	1773.623928
2005	379.7966667	2005	16.5	1774.257704
2006	381.8975	2006	17.5	1774.891481
2007	383.7916667	2007	18.5	1775.525258
2008	385.6058333	2008	19.5	1776.159035
2009	387.4291667	2009	20.5	1776.792812
2010	389.8975	2010	21.5	1777.426589
2011	391.6525	2011	22.5	1778.060366
2012	393.8541667	2012	23.5	1778.694143
2013	396.5191667	2013	24.5	1779.327919
2014	398.6483333	2014	25.5	1779.961696
2015	400.835	2015	26.5	1780.595473

2016	404.2391667	2016	27.5	1781.22925
2017	406.5525	2017	28.5	1781.863027
2018	408.1355556	2018	29.5	1782.496804

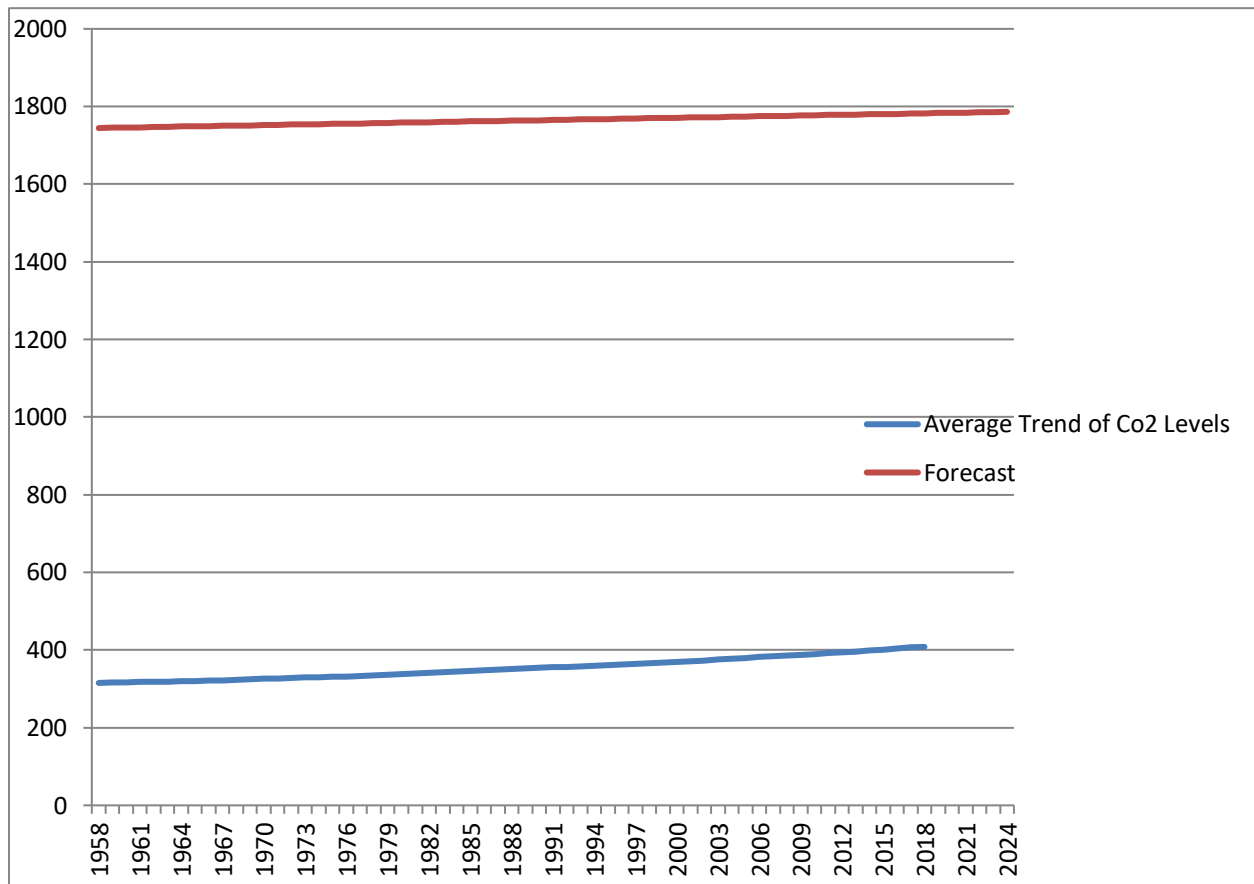
(Table 3)

**IV. REGRESSION:**

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.991569851							
R Square	0.98321077							
Adjusted R Square	0.982926207							
Standard Error	2.319717778							
Observations	61							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	18592.51566	18592.51566	3455.15754	4.53563E-54			
Residual	59	317.4843437	5.381090571					
Total	60	18910						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1763.800386	3.82572436	461.0369749	1.2328E-106	1756.145129	1771.455642	1756.145129	1771.455642
Average Trend of Co2 Levels	0.633776885	0.010782078	58.78058812	4.53563E-54	0.612201997	0.655351773	0.612201997	0.655351773
a=	1763.800386							
b=	0.633776885							
y=	1764.434163							

(Table 4)

### V. COMBINED GRAPH ON AVERAGE TREND OF CO2 LEVELS & FORECASTED VALUES



(Graph 1) Graph interpreting the forecasted values and values of average Co2 levels in the global atmosphere from 1958- 2024.



**VI. CORRELATION**

<b>Years</b>	<b>Average Trend of Co2 Levels</b>
1958	315.283
1959	315.9741667
1960	316.9075
1961	317.6366667
1962	318.45
1963	318.9941667
1964	319.6216667
1965	320.0433333
1966	321.3833333
1967	322.1566667
1968	323.045
1969	324.6241667
1970	325.6808333
1971	326.3183333
1972	327.4525
1973	329.675
1974	330.1833333
1975	331.1158333
1976	332.0408333
1977	333.8308333
1978	335.4
1979	336.8425
1980	338.75
1981	340.1058333
1982	341.4491667
1983	343.0533333
1984	344.65

1985	346.1166667
1986	347.42
1987	349.195
1988	351.565
1989	353.1191667
1990	354.3958333
1991	355.6066667
1992	356.4475
1993	357.1
1994	358.8325
1995	360.82
1996	362.6066667
1997	363.73
1998	366.6991667
1999	368.3775
2000	369.5491667
2001	371.1441667
2002	373.2791667
2003	375.8016667
2004	377.5216667
2005	379.7966667
2006	381.8975
2007	383.7916667
2008	385.6058333
2009	387.4291667
2010	389.8975
2011	391.6525
2012	393.8541667
2013	396.5191667
2014	398.6483333
2015	400.835

2016	404.2391667
2017	406.5525
2018	408.1355556

Table 5

	<i>Years</i>	<i>Average of Co2 Levels</i>
Years	1	
Average Trend of Co2 Levels	0.99157	1

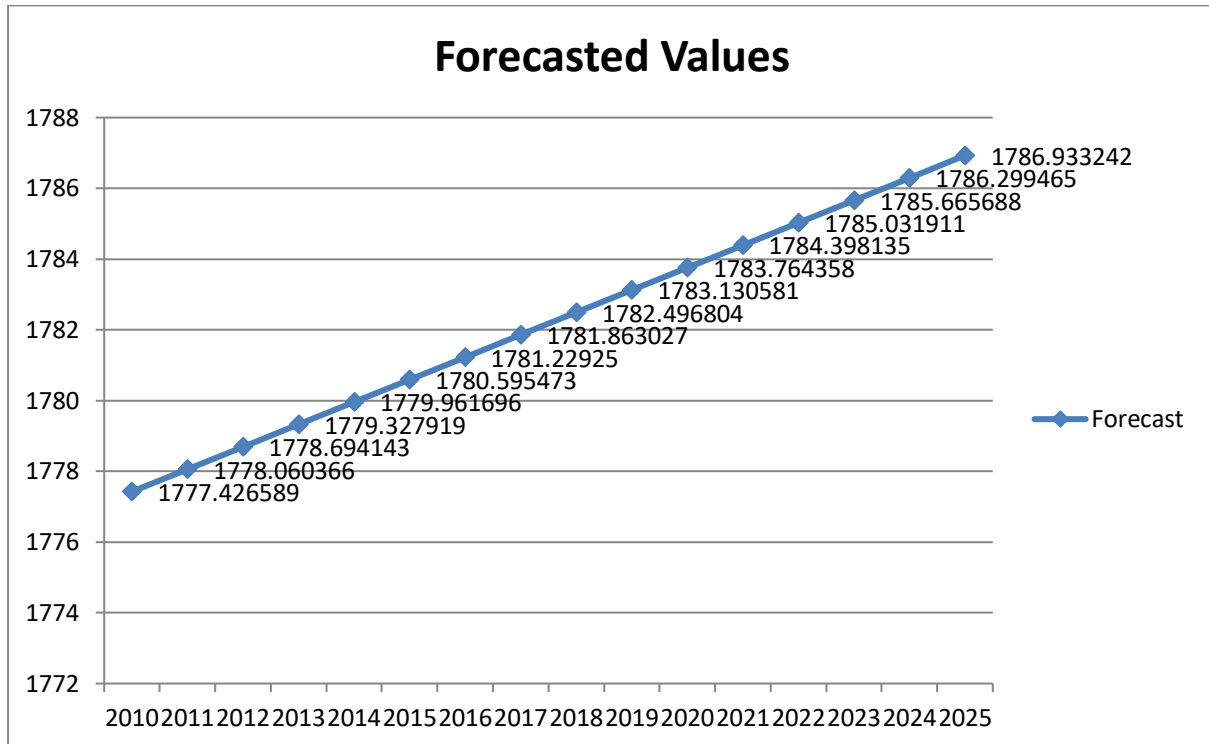
(Table 6)

Interpretation: As we can see, per year, the Average Trend value of Co2 levels increases by 0.99157 parts per million. There is positive correlation.

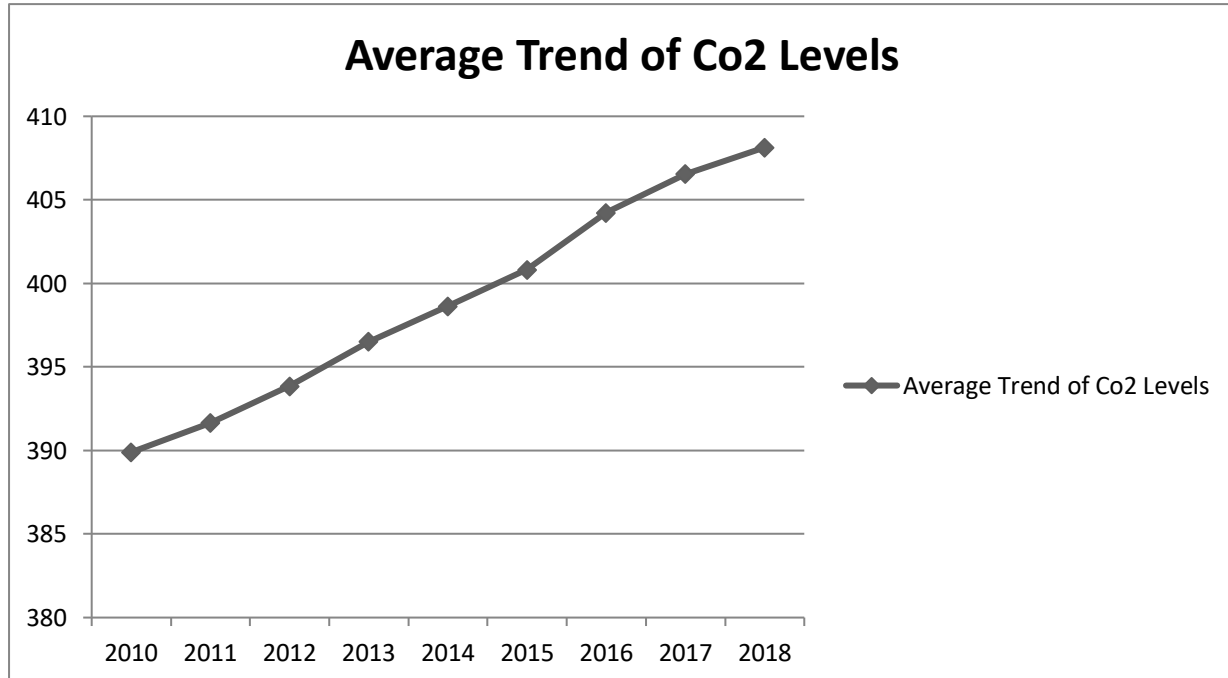
**VII. FORECASTED VALUES**

<b>Years</b>	<b>X</b>	<b>Average Trend of Co2 Levels</b>	<b>Forecast</b>
2010	21.5	389.8975	1777.427
2011	22.5	391.6525	1778.06
2012	23.5	393.8541667	1778.694
2013	24.5	396.5191667	1779.328
2014	25.5	398.6483333	1779.962
2015	26.5	400.835	1780.595
2016	27.5	404.2391667	1781.229
2017	28.5	406.5525	1781.863
2018	29.5	408.1355556	1782.497
2019	30.5		1783.131
2020	31.5		1783.764
2021	32.5		1784.398
2022	33.5		1785.032
2023	34.5		1785.666
2024	35.5		1786.299
2025	36.5		1786.933

(Table 7)



(Graph 2) Graph showing the forecasted values from 2010- 2025.



(Graph 3) Graph showing only the average trend of Co2 levels from 2010- 2018.

## **VIII. DATA**

This is a secondary data is collected from "<https://datahub.io/core/co2-ppm#data>" (<https://datahub.io/core/co2-ppm/r/0.html>) which shows the level of Co2 emissions from the year 1958 to 2018.

## **IX. DESCRIPTION OF DATA:**

"Trends in Atmosphere Carbon Dioxide. Data are sourced from the US Government's Earth System Research Laboratory, Global Monitoring Division. Two main series are provided: the Mauna Loa series (which has the longest continuous series since 1958) and a Global Average series (a global average over marine surface sites). Data is reported as a dry air mole fraction defined as the number of molecules of carbon dioxide divided by the number of all molecules in air, including CO<sub>2</sub> itself, after water vapor has been removed. The mole fraction is expressed as parts per million (ppm). Example: 0.000400 is expressed as 400 ppm." Source: <https://datahub.io/core/co2-ppm#data>.

## **X. CONCLUSION**

Overall, this research paper is created to show the average trend value of the increase in Co2 levels and its adverse impact on the environment, globally. It focuses on the need to take action and protect the Earth from global warming and climate change. The highlighted numbers in Table 5 help us predict the future values of the Co2 levels using Least Square Method of Time Series Analysis. Graph 2 shows the values predicted from the year 2018- 2025.



## REFERENCES

- [1]. <https://datahub.io/core/co2-ppm#data>
- [2]. <https://datahub.io/core/co2-ppm/r/0.html>