
Contents**NASA temperatures, 1880-2018**

[Metadata](#)

Information about this file

[LandOceanW](#)

Annual average land and ocean temperatures, base period 1951-1980, with the five-year lowess smooth, worldwide, 1880-2018, (degrees celsius)

[LandW](#)

Annual average land temperatures, base period 1951-1980, with the five-year lowess smooth, worldwide, 1880-2018, (degrees celsius)

[OceanW](#)

Annual average ocean temperatures, base period 1951-1980, with the five-year lowess smooth, worldwide, 1880-2018, (degrees celsius)

[LandOceanUS](#)

Annual average land and ocean temperatures, base period 1951-1980, with the five-year lowess smooth, US, 1880-2018, (degrees celsius)

<http://www.dannydorling.org/>

Metadata

These reference tables contain statistics of the temperatures measured by NASA since 1880. Shown are the global average figures, separate land and ocean data and then the temperatures in the US. The graphs beside each table do not give the actual temperatures but show the ‘temperature anomaly’ comparing each year to the average temperatures 1951-1980, and the absolute change in this temperature anomaly over time. The x-axis shows the latter while the y-axis is the temperature anomaly. NASA has used a lowess smooth to convert a scatter plot of diverse locations into a smooth line. Each circle represents a certain year.

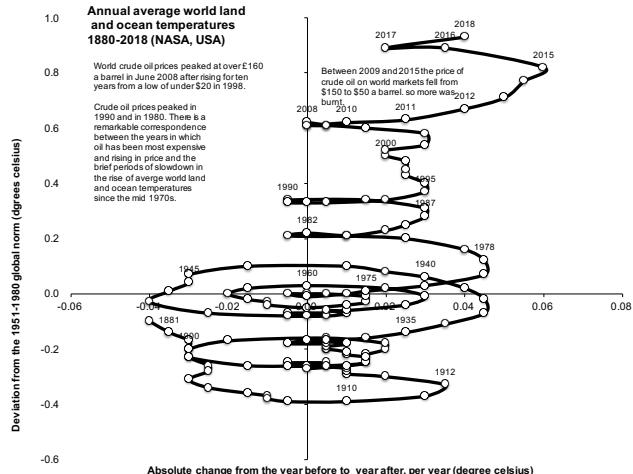
[Contents](#)

Annual average land and ocean temperatures, base period 1951-1980, with the five-year lowess smooth, worldwide, 1880-2018, (degrees celsius)

Source: GISS Surface Temperature Analysis (v4), National Aeronautics and Space Administration; <https://data.giss.nasa.gov/gistemp/graphs/>; 24 June 2019

Frequency: Yearly, End of period

Observation date	Absolute change (degree celsius)	Temperature anomaly (degree celsius)	Label
1880	-0.0400	-0.10	
1881	-0.0360	-0.14	1881
1882	-0.0300	-0.17	
1883	-0.0300	-0.20	
1884	-0.0300	-0.23	
1885	-0.0150	-0.26	
1886	0.0000	-0.26	
1887	0.0000	-0.26	
1888	0.0050	-0.26	
1889	0.0050	-0.25	
1890	-0.0050	-0.25	
1891	-0.0050	-0.26	
1892	0.0050	-0.26	
1893	0.0150	-0.25	
1894	0.0150	-0.23	
1895	0.0150	-0.22	
1896	0.0200	-0.20	
1897	0.0200	-0.18	
1898	0.0050	-0.16	
1899	-0.0200	-0.17	
1900	-0.0300	-0.20	1900
1901	-0.0300	-0.23	
1902	-0.0250	-0.26	
1903	-0.0250	-0.28	
1904	-0.0300	-0.31	
1905	-0.0250	-0.34	
1906	-0.0160	-0.36	
1907	-0.0100	-0.37	
1908	-0.0100	-0.38	
1909	-0.0050	-0.39	
1910	0.0100	-0.39	1910
1911	0.0300	-0.37	
1912	0.0300	-0.33	1912
1913	0.0200	-0.30	
1914	0.0100	-0.29	
1915	0.0100	-0.28	
1916	0.0100	-0.27	
1917	0.0000	-0.26	
1918	0.0000	-0.27	
1919	0.0100	-0.26	
1920	0.0100	-0.25	
1921	0.0150	-0.25	
1922	0.0100	-0.22	
1923	0.0100	-0.21	
1924	0.0050	-0.20	
1925	0.0050	-0.20	
1926	0.0050	-0.19	
1927	0.0050	-0.19	
1928	0.0100	-0.18	
1929	0.0050	-0.17	
1930	-0.0050	-0.18	
1931	0.0050	-0.18	
1932	0.0050	-0.17	
1933	0.0050	-0.17	
1934	0.0150	-0.16	
1935	0.0250	-0.14	1935
1936	0.0350	-0.11	
1937	0.0450	-0.07	
1938	0.0450	-0.02	
1939	0.0400	0.02	
1940	0.0300	0.06	1940
1941	0.0200	0.08	
1942	0.0100	0.10	
1943	-0.0150	0.10	
1944	-0.0300	0.07	
1945	-0.0300	0.06	1945
1946	-0.0350	0.04	
1947	-0.0400	0.03	
1948	-0.0250	0.07	
1949	0.0000	0.08	
1950	0.0050	0.07	
1951	-0.0050	0.07	
1952	-0.0050	0.08	
1953	0.0050	0.08	
1954	0.0100	0.07	
1955	0.0050	0.06	
1956	0.0100	0.06	
1957	0.0250	0.04	
1958	0.0300	0.01	
1959	0.0200	0.02	
1960	0.0000	0.03	1960
1961	<-0.0150	0.02	
1962	-0.0200	0.00	
1963	-0.0150	-0.02	
1964	-0.0100	-0.03	
1965	-0.0100	-0.04	
1966	0.0000	-0.05	
1967	0.0100	-0.04	
1968	0.0150	-0.03	
1969	0.0150	-0.01	
1970	0.0050	0.00	
1971	0.0000	0.00	
1972	-0.0050	0.00	
1973	0.0000	-0.01	
1974	0.0100	0.00	
1975	0.0150	0.01	1975
1976	0.0300	0.03	
1977	0.0450	0.07	
1978	0.0450	0.12	1978
1979	0.0400	0.16	
1980	0.0250	0.20	
1981	0.0100	0.21	
1982	0.0000	0.22	1982
1983	-0.0050	0.21	
1984	0.0100	0.21	
1985	0.0200	0.23	
1986	0.0250	0.25	
1987	0.0300	0.28	1987
1988	0.0300	0.31	
1989	0.0150	0.34	
1990	-0.0050	0.34	1990
1991	-0.0050	0.33	
1992	0.0000	0.33	
1993	0.0050	0.33	
1994	0.0200	0.34	
1995	0.0300	0.37	1995
1996	0.0300	0.40	
1997	0.0250	0.43	
1998	0.0250	0.45	
1999	0.0250	0.48	
2000	0.0200	0.50	2000
2001	0.0200	0.52	
2002	0.0200	0.54	
2003	0.0300	0.55	
2004	0.0150	0.60	
2005	0.0050	0.61	
2006	0.0000	0.61	
2007	0.0050	0.61	
2008	0.0000	0.62	2008
2009	0.0000	0.61	
2010	0.0100	0.62	2010
2011	0.0200	0.63	2011
2012	0.0400	0.67	2012
2013	0.0500	0.71	
2014	0.0550	0.77	
2015	0.0600	0.82	2015
2016	0.0350	0.89	2016
2017	0.0200	0.89	2017
2018	0.0400	0.93	2018

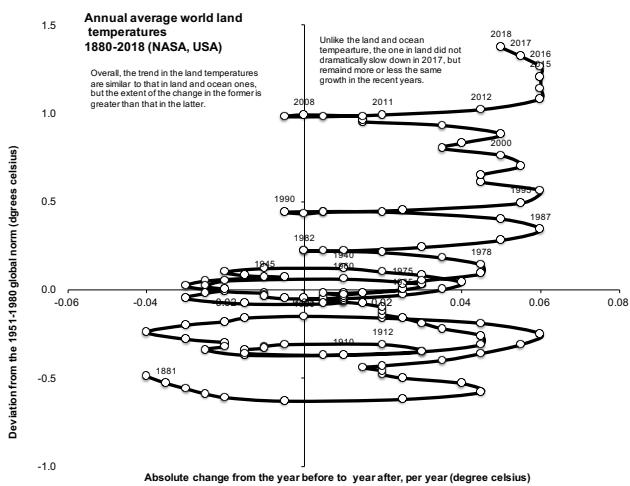


[Contents](#)

Annual average land temperatures, base period 1951-1980, with the five-year lowess smooth, worldwide, 1880-2018, (degrees celsius)

Source: GISS Surface Temperature Analysis (v4), National Aeronautics and Space Administration; <https://data.giss.nasa.gov/gistemp/graphs/>; 24 June 2019
Frequency: Yearly, End of period

Observation date	Absolute change (degree celsius)	Temperature anomaly (degree celsius)	Label
1880	-0.0400	-0.56	
1881	-0.0360	-0.53	1881
1882	-0.0300	-0.56	
1883	-0.0250	-0.59	
1884	-0.0200	-0.61	
1885	-0.0050	-0.63	
1886	0.0250	-0.62	
1887	0.0450	-0.58	
1888	0.0400	-0.55	
1889	0.0250	-0.50	
1890	0.0200	-0.48	
1891	0.0200	-0.46	
1892	0.0150	-0.44	
1893	0.0200	-0.43	
1894	0.0350	-0.40	
1895	0.0450	-0.36	
1896	0.0500	-0.31	
1897	0.0600	-0.25	
1898	0.0450	-0.19	
1899	0.0200	-0.16	
1900	0.0000	-0.15	
1901	-0.0150	-0.16	1900
1902	-0.0200	-0.18	
1903	-0.0300	-0.20	
1904	-0.0400	-0.24	
1905	-0.0300	-0.28	
1906	-0.0200	-0.30	
1907	-0.0200	-0.32	
1908	-0.0250	-0.34	
1909	-0.0150	-0.37	
1910	0.0100	-0.37	1910
1911	0.0300	-0.35	
1912	0.0200	-0.31	1912
1913	-0.0300	-0.31	
1914	-0.0100	-0.32	
1915	-0.0100	-0.33	
1916	-0.0150	-0.34	
1917	-0.0150	-0.36	
1918	0.0050	-0.37	
1919	0.0300	-0.35	
1920	0.0450	-0.31	
1921	0.0450	-0.28	
1922	0.0350	-0.22	
1923	0.0300	-0.19	
1924	0.0250	-0.16	
1925	0.0200	-0.14	
1926	0.0200	-0.12	
1927	0.0200	-0.10	
1928	0.0150	-0.08	
1929	0.0100	-0.07	
1930	0.0050	-0.06	
1931	0.0050	-0.06	
1932	0.0050	-0.05	
1933	0.0000	-0.05	
1934	0.0100	-0.05	
1935	0.0250	-0.03	1935
1936	0.0350	0.00	
1937	0.0400	0.04	
1938	0.0300	0.05	
1939	0.0200	0.10	
1940	0.0100	0.12	1940
1941	-0.0100	0.12	
1942	-0.0200	0.10	
1943	-0.0150	0.08	
1944	-0.0050	0.07	
1945	-0.0100	0.07	1945
1946	-0.0250	0.05	
1947	-0.0300	0.02	
1948	-0.0200	0.01	
1949	-0.0100	-0.02	
1950	-0.0100	-0.03	
1951	-0.0100	-0.04	
1952	-0.0050	-0.05	
1953	0.0050	-0.05	
1954	0.0100	-0.04	
1955	0.0100	-0.03	
1956	0.0050	-0.02	
1957	0.0100	-0.02	
1958	0.0250	0.00	
1959	0.0300	0.03	
1960	0.0100	0.06	1960
1961	-0.0200	0.05	
1962	-0.0250	0.02	
1963	-0.0200	0.00	
1964	-0.0250	-0.02	
1965	-0.0300	-0.05	
1966	-0.0150	-0.08	
1967	0.0050	-0.08	
1968	0.0100	-0.07	
1969	0.0100	-0.06	
1970	0.0100	-0.05	
1971	0.0100	-0.04	
1972	0.0100	-0.03	
1973	0.0150	-0.02	
1974	0.0250	0.00	
1975	0.0250	0.03	1975
1976	0.0300	0.05	
1977	0.0450	0.09	
1978	0.0450	0.14	1978
1979	0.0350	0.16	
1980	0.0200	0.21	
1981	0.0050	0.22	
1982	0.0000	0.22	1982
1983	0.0000	0.22	
1984	0.0100	0.22	
1985	0.0300	0.24	
1986	0.0500	0.25	
1987	0.0600	0.34	1987
1988	0.0500	0.40	
1989	0.0200	0.44	
1990	-0.0050	0.44	1990
1991	0.0000	0.43	
1992	0.0050	0.44	
1993	0.0050	0.44	
1994	0.0250	0.45	
1995	0.0550	0.49	1995
1996	0.0600	0.56	
1997	0.0450	0.61	
1998	0.0450	0.65	
1999	0.0550	0.70	
2000	0.0500	0.76	2000
2001	0.0350	0.80	
2002	0.0400	0.83	
2003	0.0500	0.86	
2004	0.0350	0.93	
2005	0.0150	0.95	
2006	0.0150	0.96	
2007	0.0150	0.98	
2008	0.0000	0.99	2008
2009	-0.0050	0.98	
2010	0.0050	0.98	
2011	0.0200	0.99	2011
2012	0.0450	1.02	2012
2013	0.0600	1.08	
2014	0.0600	1.14	
2015	0.0600	1.20	2015
2016	0.0600	1.26	2016
2017	0.0550	1.32	2017
2018	0.0500	1.37	2018

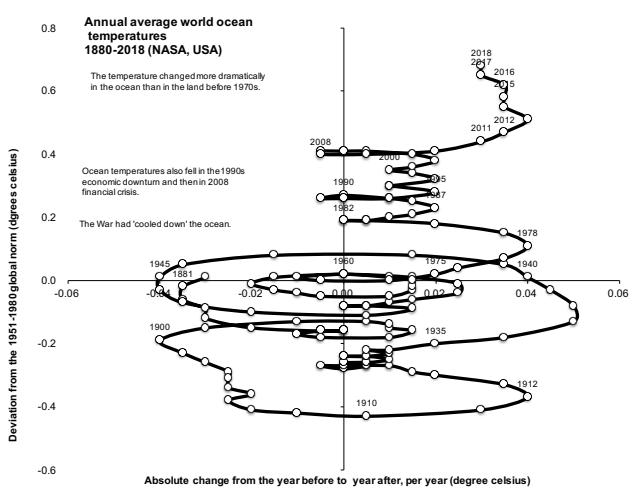


[Contents](#)

Annual average ocean temperatures, base period 1951-1980, with the five-year lowess smooth, worldwide, 1880-2018, (degrees celsius)

Source: GISS Surface Temperature Analysis (v4), National Aeronautics and Space Administration; <https://data.giss.nasa.gov/gistemp/graphs/>; 24 June 2019
Notes: averaged over the part of the ocean that is free of ice at all times (open ocean).
Frequency: Yearly, End of period

Observation date	Absolute change (degree celsius)	Temperature anomaly (degree celsius)	Label
1880	-0.0300	0.01	
1881	-0.0350	-0.02	1881
1882	-0.0350	-0.06	
1883	-0.0300	0.09	
1884	-0.0300	0.12	
1885	-0.0200	0.15	
1886	-0.0050	0.16	
1887	0.0000	0.16	
1888	0.0000	0.16	
1889	-0.0050	0.16	
1890	-0.0050	0.16	
1891	-0.0100	0.17	
1892	-0.0050	0.18	
1893	0.0100	0.18	
1894	0.0150	0.16	
1895	0.0100	0.15	
1896	0.0100	0.14	
1897	0.0050	0.13	
1898	-0.0100	0.13	
1899	-0.0300	0.15	
1900	-0.0400	0.19	1900
1901	-0.0350	0.23	
1902	-0.0300	0.26	
1903	-0.0200	0.29	
1904	-0.0250	0.31	
1905	-0.0250	0.34	
1906	-0.0200	0.36	
1907	-0.0250	0.38	
1908	-0.0200	0.41	
1909	-0.0100	0.42	
1910	0.0050	0.43	1910
1911	0.0000	0.44	
1912	0.0400	0.37	1912
1913	0.0350	0.33	
1914	0.0200	0.30	
1915	0.0150	0.29	
1916	0.0100	0.27	
1917	0.0000	0.27	
1918	-0.0050	0.27	
1919	0.0000	0.28	
1920	0.0050	0.27	
1921	0.0000	0.27	
1922	0.0000	0.27	
1923	0.0050	0.27	
1924	0.0050	0.26	
1925	0.0000	0.26	
1926	0.0050	0.26	
1927	0.0100	0.25	
1928	0.0050	0.24	
1929	0.0000	0.24	
1930	0.0000	0.24	
1931	0.0050	0.24	
1932	0.0100	0.23	
1933	0.0050	0.22	
1934	0.0100	0.22	
1935	0.0200	0.20	1935
1936	0.0350	0.18	
1937	0.0500	0.15	
1938	0.0500	0.08	
1939	0.0450	0.03	
1940	0.0400	0.01	1940
1941	0.0350	0.05	
1942	0.0150	0.08	
1943	-0.0150	0.08	
1944	-0.0300	0.05	
1945	-0.0400	0.01	1945
1946	-0.0400	0.03	
1947	-0.0350	0.07	
1948	-0.0200	0.10	
1949	0.0050	0.11	
1950	0.0150	0.09	
1951	0.0050	0.08	
1952	0.0000	0.08	
1953	0.0000	0.08	
1954	0.0050	0.08	
1955	0.0100	0.07	
1956	0.0150	0.06	
1957	0.0250	0.04	
1958	0.0250	0.01	
1959	0.0150	0.01	
1960	0.0000	0.02	1960
1961	-0.0150	0.01	
1962	-0.0200	-0.01	
1963	-0.0150	-0.03	
1964	-0.0100	-0.04	
1965	-0.0050	-0.05	
1966	0.0100	-0.05	
1967	0.0150	-0.03	
1968	0.0150	-0.02	
1969	0.0150	0.00	
1970	0.0100	0.01	
1971	0.0000	0.02	
1972	-0.0100	0.01	
1973	-0.0050	0.00	
1974	0.0100	0.00	
1975	0.0200	0.02	1975
1976	0.0250	0.04	
1977	0.0350	0.07	
1978	0.0400	0.11	1978
1979	0.0350	0.15	
1980	0.0200	0.18	
1981	0.0050	0.19	
1982	0.0000	0.19	1982
1983	0.0000	0.19	
1984	0.0050	0.19	
1985	0.0100	0.20	
1986	0.0150	0.21	
1987	0.0200	0.23	1987
1988	0.0150	0.25	
1989	0.0100	0.26	
1990	0.0000	0.27	1990
1991	-0.0050	0.26	
1992	0.0000	0.26	
1993	0.0000	0.26	
1994	0.0100	0.26	
1995	0.0200	0.28	1995
1996	0.0100	0.30	
1997	0.0100	0.30	
1998	0.0200	0.32	
1999	0.0150	0.34	
2000	0.0100	0.35	2000
2001	0.0150	0.36	
2002	0.0200	0.38	
2003	0.0150	0.40	
2004	0.0050	0.41	
2005	0.0000	0.41	
2006	0.0000	0.41	
2007	-0.0050	0.41	
2008	-0.0050	0.40	2008
2009	0.0050	0.40	
2010	0.0000	0.41	
2011	0.0300	0.44	2011
2012	0.0350	0.47	2012
2013	0.0400	0.51	
2014	0.0350	0.55	
2015	0.0350	0.58	2015
2016	0.0350	0.62	2016
2017	0.0300	0.65	2017
2018	0.0300	0.68	2018



[Contents](#)

Annual average land and ocean temperatures, base period 1951-1980, with the five-year lowess smooth, US, 1880-2018, (degrees celsius)

Source: GISS Surface Temperature Analysis (v4), National Aeronautics and Space Administration; <https://data.giss.nasa.gov/gistemp/graphs/>; 24 June 2019
Frequency: Yearly, End of period

Observation date	Absolute change (degree celsius)	Temperature anomaly (degree celsius)	Label
1880	-0.0400	-0.20	
1881	-0.0400	-0.24	
1882	-0.0300	-0.28	
1883	-0.0200	-0.30	
1884	-0.0200	-0.32	
1885	0.0200	-0.34	
1886	0.0800	-0.28	
1887	0.0850	-0.18	1887
1888	0.0400	-0.11	
1889	-0.0150	-0.10	
1890	-0.0400	-0.14	
1891	-0.0450	-0.18	
1892	-0.0500	-0.23	
1893	-0.0350	-0.28	
1894	-0.0050	-0.30	
1895	0.0200	-0.29	
1896	0.0400	-0.26	
1897	0.0450	-0.21	
1898	0.0350	-0.17	
1899	0.0000	-0.14	
1900	-0.0350	-0.17	
1901	-0.0350	-0.21	
1902	-0.0350	-0.24	
1903	-0.0350	-0.28	
1904	-0.0150	-0.31	
1905	0.0200	-0.31	
1906	0.0650	-0.27	
1907	0.0800	-0.18	
1908	0.0500	-0.11	
1909	0.0100	-0.08	
1910	-0.0100	-0.09	
1911	-0.0150	-0.10	
1912	-0.0400	-0.12	
1913	-0.0600	-0.18	1913
1914	-0.0700	-0.28	1914
1915	-0.0200	-0.32	
1916	-0.0100	-0.32	
1917	-0.0100	-0.34	
1918	0.0300	-0.34	
1919	0.0650	-0.28	
1920	0.0650	-0.21	
1921	0.0850	-0.17	
1922	0.0400	-0.14	
1923	0.0500	-0.09	
1924	0.0300	-0.04	
1925	0.0050	-0.03	
1926	0.0100	-0.03	
1927	0.0300	-0.01	
1928	0.0400	0.03	
1929	0.0500	0.07	
1930	0.0750	0.15	
1931	0.0750	0.22	
1932	0.0450	0.28	
1933	0.0050	0.31	
1934	-0.0150	0.29	
1935	0.0000	0.28	
1936	0.0000	0.29	
1937	-0.0050	0.28	
1938	0.0050	0.25	
1939	0.0100	0.29	
1940	-0.0200	0.30	
1941	-0.0650	0.25	
1942	-0.0600	0.17	1942
1943	-0.0300	0.13	
1944	-0.0200	0.11	
1945	-0.0100	0.09	
1946	-0.0200	0.08	
1947	-0.0300	0.06	
1948	-0.0250	0.02	
1949	0.0100	0.00	
1950	0.0650	0.04	
1951	0.0750	0.13	
1952	0.0500	0.19	
1953	0.0450	0.23	
1954	0.0350	0.25	
1955	-0.0200	0.30	
1956	-0.0750	0.24	1956
1957	-0.0800	0.15	1957
1958	-0.0500	0.08	
1959	-0.0250	0.05	
1960	-0.0200	0.03	
1961	-0.0200	0.01	
1962	-0.0200	-0.01	
1963	-0.0200	-0.03	
1964	-0.0300	-0.03	1964
1965	-0.0400	-0.09	
1966	-0.0350	-0.13	
1967	-0.0250	-0.16	
1968	-0.0100	-0.18	
1969	0.0150	-0.18	
1970	0.0350	-0.15	
1971	0.0400	-0.11	
1972	0.0250	-0.07	
1973	0.0150	-0.06	
1974	0.0050	-0.04	
1975	-0.0250	-0.05	
1976	-0.0350	-0.09	
1977	-0.0050	-0.12	
1978	0.0250	-0.10	
1979	0.0200	-0.07	
1980	0.0100	-0.06	
1981	0.0250	-0.05	
1982	0.0500	-0.01	
1983	0.0650	0.05	
1984	0.0750	0.12	
1985	0.0750	0.20	1985
1986	0.0600	0.27	
1987	0.0950	0.36	
1988	0.0650	0.46	
1989	-0.0100	0.49	
1990	-0.0450	0.44	1990
1991	-0.0250	0.40	1991
1992	-0.0250	0.39	
1993	-0.0550	0.35	
1994	-0.0200	0.28	
1995	0.0650	0.30	
1996	0.1100	0.40	
1997	0.1050	0.52	
1998	0.0900	0.61	
1999	0.0900	0.70	
2000	0.0550	0.79	2000
2001	0.0000	0.81	
2002	-0.0100	0.79	
2003	0.0150	0.60	
2004	-0.0050	0.82	2004
2005	-0.0400	0.79	2005
2006	-0.0500	0.74	
2007	-0.0450	0.69	
2008	-0.0550	0.65	2008
2009	-0.0700	0.58	2009
2010	-0.0400	0.51	2010
2011	-0.0500	0.50	
2012	0.1350	0.61	
2013	0.1400	0.77	2013
2014	0.1200	0.89	
2015	0.1250	1.01	
2016	0.1300	1.14	
2017	0.1300	1.27	
2018	0.1300	1.40	2018

