

# Life Expectancy Analysis: U.S. President-Elect Donald J. Trump

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Should Donald J. Trump become the 45th President of the U.S. on January 20, 2017, he will be 70 years and 220 days old, and will therefore be the oldest<sup>1</sup> person ever to assume the U.S. Presidency. For this reason, it might be of interest to Americans, but also to political observers around the world, to have a statistical estimate of how likely it is for the future U.S. president to survive his first, or even a potential second term. The results of this brief analysis show that

1. there is a more than 1-in-10 chance (10.69%) that Donald Trump would not survive the first term.
2. there is almost a 1-in-4 chance (24.23%) that Donald Trump would not survive a two-term presidency.
3. Trump's one year mortality would in the last year of a two-term presidency be almost double his mortality in the first year (4.63% vs. 2.42%).

## Detailed results

Based on the newest United States life tables as published by the CDC / NCHS<sup>2</sup>, the following statistics will apply to Donald Trump on Inauguration Day (January 20th, 2017):

1. Life expectancy: ca. 13.88 years.
2. Probability to survive the first term: ca. 89.31%.

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<sup>1</sup>The second oldest being Ronald Reagan at 69 years and 349 days.

<sup>2</sup>“Table 5. Life table for white males: United States, 2011” in: Elizabeth Arias, “United States Life Tables, 2011”, U.S. National Vital Statistics Reports, Volume 64, Nr. 11 (September 22, 2015).

3. Probability to die during the first term<sup>3</sup>: ca. 10.69%.
4. Probability to survive the first and a second term: ca. 75.77%.
5. Probability to die during either the first or a second term: ca. 24.23%.
6. Probability to die during a second term based on 1st term Inauguration Day: ca. 13.55%.
7. Probability to die during a second term based on 2nd term Inauguration Day: ca. 15.17%.

Based on Inauguration Day	
Years	Prob. to survive no. of years
1	97.5756%
2	94.9908%
3	92.2388%
4	89.3104%
5	86.2035%
6	82.9178%
7	79.4426%
8	75.7650%

Table 1: Probability for Trump surviving the specified number of years measured from Inauguration Day. See also Figure 1.

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<sup>3</sup>This compares to a value of only 6.54% for Hillary Clinton, if she had won the presidential election.

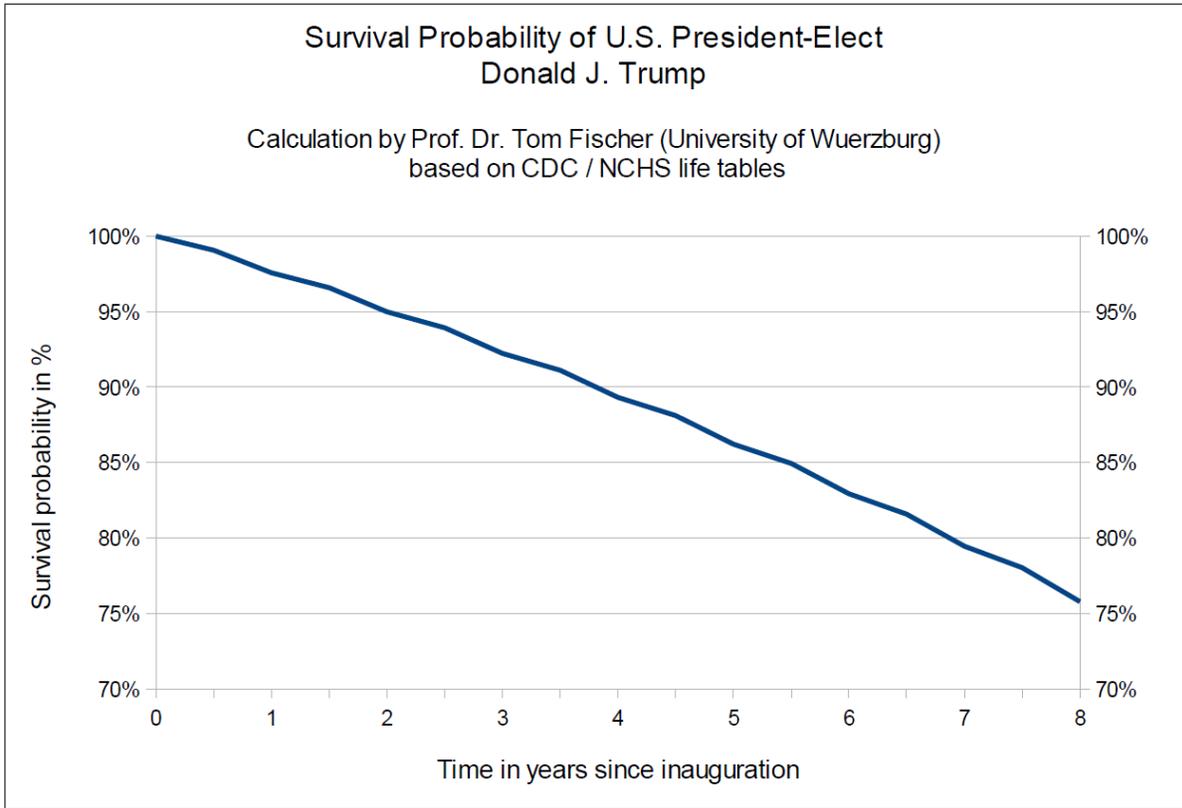


Figure 1: Probability for Trump surviving the specified number of years measured from Inauguration Day.

The following breakdown of approximate mortality probabilities by year over a potential two-term presidency of Trump could be derived from the source data:

Based on Inauguration Day	
Year	Prob. of death in year
1	2.4244%
2	2.5847%
3	2.7521%
4	2.9283%
5	3.1070%
6	3.2857%
7	3.4752%
8	3.6776%

Table 2: Probability for Trump dying in certain years measured from Inauguration Day.

Based on start of year	
Year	Mortality rate in year
1	2.4244%
2	2.6490%
3	2.8972%
4	3.1747%
5	3.4788%
6	3.8115%
7	4.1912%
8	4.6292%

Table 3: Probability for Trump dying in certain years measured from the start of that year. See also Figure 2.

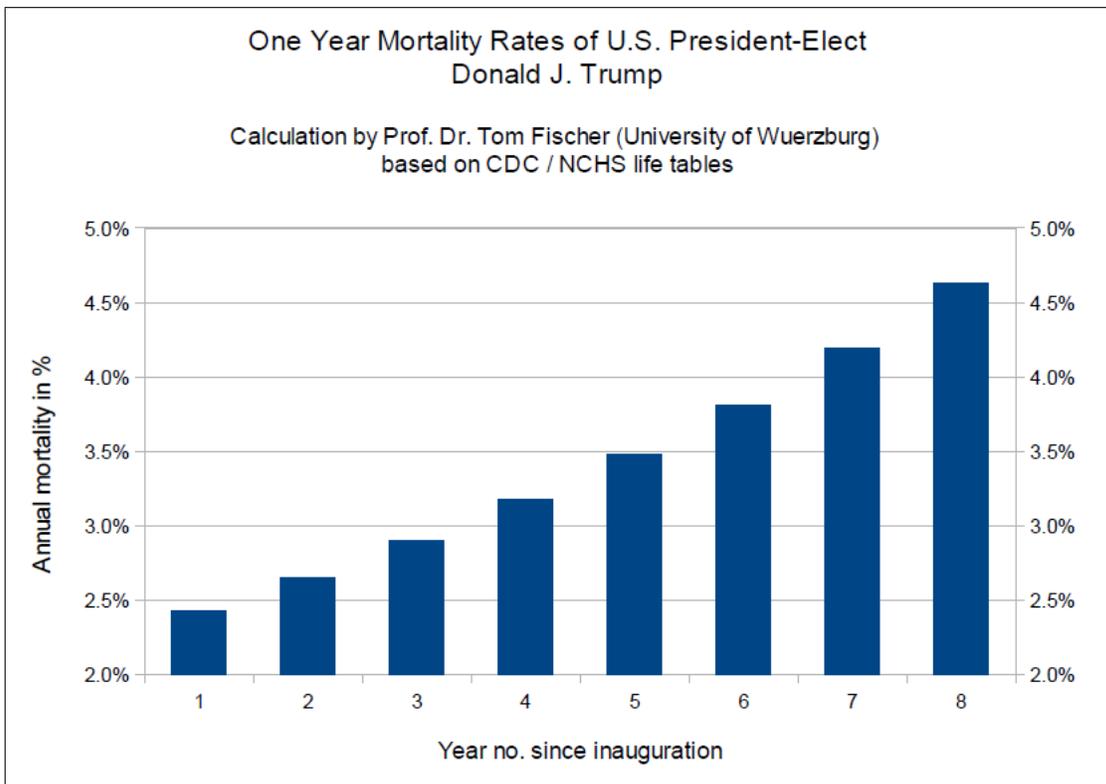


Figure 2: Probability for Trump dying in certain years measured from the start of that year.

## Appendix: Technical assumptions

1. Donald J. Trump is subject to the mortality statistics of “Table 5. Life table for white males: United States, 2011” as published in “United States Life Tables, 2011”, U.S. National Vital Statistics Reports, Volume 64, Nr. 11 (September 22, 2015) by author Elizabeth Arias.
2. Trump’s personal medical history, his social status, as well as the outstanding medical care, the extraordinary stress levels, but also the assassination risk specific to U.S. presidents, are not reflected.
3. 30/360 day count for age determination.
4. In survival or mortality probabilities: Uniform distribution of deaths assumption, meaning linear interpolation of integer age life table values for fractional ages and/or fractional time intervals.
5. Determination of Trump’s life expectancy (expected future lifetime) through linear interpolation of  $e_x$  values of source data.

## Disclaimer

While the author believes all results to be correct given the stated assumptions, and while all calculations were carried out with great diligence, complete absence of errors cannot be warranted. The author denies assuming any liability related to such errors.