

These are findings from an Ipsos poll conducted for Thomson Reuters from January 13-17, 2013. For the survey, a sample of 1,514 Americans ages 18+ were interviewed online. The precision of the Reuters/Ipsos online polls is measured using a [credibility interval](#). In this case, the poll has a credibility interval of plus or minus 2.9 percentage points. For more information about credibility intervals, please see the appendix.

The data were weighted to the U.S. current population data by gender, age, education, and ethnicity. Statistical margins of error are not applicable to online polls. All sample surveys and polls may be subject to other sources of error, including, but not limited to coverage error and measurement error. Figures marked by an asterisk (\*) indicate a percentage value of greater than zero but less than one half of one per cent. Where figures do not sum to 100, this is due to the effects of rounding.

### GUN REGULATIONS

Q1. How much, if anything, have you heard about the recent shooting at Sandy Hook Elementary School in Connecticut?

|                |     |
|----------------|-----|
| A great deal   | 63% |
| A fair amount  | 29% |
| A little bit   | 6%  |
| Nothing at all | 2%  |

Q2. When thinking about gun ownership rights and gun laws, which of the following comes closest to your personal opinion?

|                                                                |     |
|----------------------------------------------------------------|-----|
| Gun ownership should have strong regulations or restrictions   | 43% |
| Gun ownership should have moderate regulations or restrictions | 19% |
| Gun ownership should have basic regulations or restrictions    | 25% |
| Gun ownership should have no or very few restrictions          | 6%  |
| Unsure                                                         | 7%  |

Q3. Do you support or oppose the following laws or regulations?

|                                                                                                       |     |
|-------------------------------------------------------------------------------------------------------|-----|
| <b>Laws allowing law-abiding citizens to get a permit to carry a concealed weapon</b>                 |     |
| Strongly support                                                                                      | 51% |
| Somewhat support                                                                                      | 24% |
| Somewhat oppose                                                                                       | 10% |
| Strongly oppose                                                                                       | 9%  |
| Unsure                                                                                                | 6%  |
| Total support (net)                                                                                   | 75% |
| Total oppose (net)                                                                                    | 19% |
| <b>Laws allowing citizens to use deadly force to protect themselves from danger in their own home</b> |     |
| Strongly support                                                                                      | 64% |
| Somewhat support                                                                                      | 20% |
| Somewhat oppose                                                                                       | 6%  |
| Strongly oppose                                                                                       | 4%  |
| Unsure                                                                                                | 5%  |
| Total support (net)                                                                                   | 84% |
| Total oppose (net)                                                                                    | 10% |

Q3. Do you support or oppose the following laws or regulations?

|                                                                                                              |     |
|--------------------------------------------------------------------------------------------------------------|-----|
| <b>Laws allowing citizens to use deadly force to protect themselves from danger in public places</b>         |     |
| Strongly support                                                                                             | 37% |
| Somewhat support                                                                                             | 32% |
| Somewhat oppose                                                                                              | 14% |
| Strongly oppose                                                                                              | 9%  |
| Unsure                                                                                                       | 8%  |
| <i>Total support (net)</i>                                                                                   | 69% |
| <i>Total oppose (net)</i>                                                                                    | 22% |
| <b>Laws limiting the sale of automatic weapons (i.e. machine guns)</b>                                       |     |
| Strongly support                                                                                             | 57% |
| Somewhat support                                                                                             | 17% |
| Somewhat oppose                                                                                              | 10% |
| Strongly oppose                                                                                              | 11% |
| Unsure                                                                                                       | 6%  |
| <i>Total support (net)</i>                                                                                   | 74% |
| <i>Total oppose (net)</i>                                                                                    | 20% |
| <b>Laws allowing law-abiding citizen to bring a firearm into a church, workplace or retail establishment</b> |     |
| Strongly support                                                                                             | 22% |
| Somewhat support                                                                                             | 19% |
| Somewhat oppose                                                                                              | 18% |
| Strongly oppose                                                                                              | 34% |
| Unsure                                                                                                       | 8%  |
| <i>Total support (net)</i>                                                                                   | 40% |
| <i>Total oppose (net)</i>                                                                                    | 52% |
| <b>Laws requiring background checks before allowing the sale of a firearm</b>                                |     |
| Strongly support                                                                                             | 80% |
| Somewhat support                                                                                             | 12% |
| Somewhat oppose                                                                                              | 2%  |
| Strongly oppose                                                                                              | 1%  |
| Unsure                                                                                                       | 4%  |
| <i>Total support (net)</i>                                                                                   | 92% |
| <i>Total oppose (net)</i>                                                                                    | 4%  |
| <b>Laws limiting the number of guns one person can purchase in a particular time frame</b>                   |     |
| Strongly support                                                                                             | 53% |
| Somewhat support                                                                                             | 17% |
| Somewhat oppose                                                                                              | 9%  |
| Strongly oppose                                                                                              | 15% |
| Unsure                                                                                                       | 6%  |
| <i>Total support (net)</i>                                                                                   | 69% |
| <i>Total oppose (net)</i>                                                                                    | 24% |
| <b>Laws limiting the sale of semi-automatic weapons</b>                                                      |     |
| Strongly support                                                                                             | 53% |
| Somewhat support                                                                                             | 15% |
| Somewhat oppose                                                                                              | 11% |
| Strongly oppose                                                                                              | 15% |
| Unsure                                                                                                       | 6%  |
| <i>Total support (net)</i>                                                                                   | 68% |
| <i>Total oppose (net)</i>                                                                                    | 26% |

Q4. Do you favor or oppose the following? (asked of 559 respondents)

|                                                                                                    |            |
|----------------------------------------------------------------------------------------------------|------------|
| <b>Expanding background checks to include sales at gun shows and those between private parties</b> |            |
| Strongly favor                                                                                     | 64%        |
| Somewhat favor                                                                                     | 22%        |
| Somewhat oppose                                                                                    | 9%         |
| Strongly oppose                                                                                    | 5%         |
| <i>Total favor(net)</i>                                                                            | <i>86%</i> |
| <i>Total oppose (net)</i>                                                                          | <i>14%</i> |
| <b>Banning military-style assault weapons</b>                                                      |            |
| Strongly favor                                                                                     | 58%        |
| Somewhat favor                                                                                     | 17%        |
| Somewhat oppose                                                                                    | 13%        |
| Strongly oppose                                                                                    | 12%        |
| <i>Total favor(net)</i>                                                                            | <i>74%</i> |
| <i>Total oppose (net)</i>                                                                          | <i>26%</i> |
| <b>Banning semi-automatic weapons</b>                                                              |            |
| Strongly favor                                                                                     | 45%        |
| Somewhat favor                                                                                     | 21%        |
| Somewhat oppose                                                                                    | 17%        |
| Strongly oppose                                                                                    | 17%        |
| <i>Total favor(net)</i>                                                                            | <i>66%</i> |
| <i>Total oppose (net)</i>                                                                          | <i>34%</i> |
| <b>Banning high-capacity ammunition clips</b>                                                      |            |
| Strongly favor                                                                                     | 56%        |
| Somewhat favor                                                                                     | 17%        |
| Somewhat oppose                                                                                    | 15%        |
| Strongly oppose                                                                                    | 12%        |
| <i>Total favor(net)</i>                                                                            | <i>74%</i> |
| <i>Total oppose (net)</i>                                                                          | <i>26%</i> |
| <b>Banning online sales of ammunition</b>                                                          |            |
| Strongly favor                                                                                     | 51%        |
| Somewhat favor                                                                                     | 18%        |
| Somewhat oppose                                                                                    | 18%        |
| Strongly oppose                                                                                    | 13%        |
| <i>Total favor(net)</i>                                                                            | <i>69%</i> |
| <i>Total oppose (net)</i>                                                                          | <i>31%</i> |
| <b>Publicly funding gun classes for teachers and school personnel</b>                              |            |
| Strongly favor                                                                                     | 33%        |
| Somewhat favor                                                                                     | 26%        |
| Somewhat oppose                                                                                    | 22%        |
| Strongly oppose                                                                                    | 19%        |
| <i>Total favor(net)</i>                                                                            | <i>59%</i> |
| <i>Total oppose (net)</i>                                                                          | <i>41%</i> |

Q4. Do you favor or oppose the following? (asked of 559 respondents)

|                                                                         |            |
|-------------------------------------------------------------------------|------------|
| <b>Allowing school personnel to carry guns</b>                          |            |
| Strongly favor                                                          | 23%        |
| Somewhat favor                                                          | 32%        |
| Somewhat oppose                                                         | 22%        |
| Strongly oppose                                                         | 23%        |
| <i>Total favor(net)</i>                                                 | <i>55%</i> |
| <i>Total oppose (net)</i>                                               | <i>45%</i> |
| <b>Encouraging school personnel to carry guns</b>                       |            |
| Strongly favor                                                          | 22%        |
| Somewhat favor                                                          | 28%        |
| Somewhat oppose                                                         | 28%        |
| Strongly oppose                                                         | 23%        |
| <i>Total favor(net)</i>                                                 | <i>50%</i> |
| <i>Total oppose (net)</i>                                               | <i>50%</i> |
| <b>Placing armed security guards in schools</b>                         |            |
| Strongly favor                                                          | 38%        |
| Somewhat favor                                                          | 34%        |
| Somewhat oppose                                                         | 19%        |
| Strongly oppose                                                         | 9%         |
| <i>Total favor(net)</i>                                                 | <i>72%</i> |
| <i>Total oppose (net)</i>                                               | <i>28%</i> |
| <b>Banning people with a history of mental illness from buying guns</b> |            |
| Strongly favor                                                          | 77%        |
| Somewhat favor                                                          | 14%        |
| Somewhat oppose                                                         | 6%         |
| Strongly oppose                                                         | 2%         |
| <i>Total favor(net)</i>                                                 | <i>91%</i> |
| <i>Total oppose (net)</i>                                               | <i>9%</i>  |
| <b>Tracking gun sales through a federal database</b>                    |            |
| Strongly favor                                                          | 58%        |
| Somewhat favor                                                          | 24%        |
| Somewhat oppose                                                         | 10%        |
| Strongly oppose                                                         | 9%         |
| <i>Total favor(net)</i>                                                 | <i>81%</i> |
| <i>Total oppose (net)</i>                                               | <i>19%</i> |

Q5. Are you in the market for a gun?

|     |     |
|-----|-----|
| Yes | 17% |
| No  | 83% |

Q6. Would you say you are in the market for a gun..? (Select all that apply) *(Asked of those in the market for a gun; n=219)*

|                                     |     |
|-------------------------------------|-----|
| For hunting                         | 27% |
| As a gift                           | 4%  |
| For protection                      | 83% |
| Out of fear of increased regulation | 26% |
| As a collector                      | 12% |
| Other                               | 11% |

Q7. As you may know, there has been a rush to purchase semi-automatic weapons following the school shooting in Newtown, CT. How concerned are you about this?

|                      |     |
|----------------------|-----|
| Very concerned       | 33% |
| Somewhat concerned   | 30% |
| Not too concerned    | 23% |
| Not at all concerned | 15% |

## How to Calculate Bayesian Credibility Intervals

The calculation of credibility intervals assumes that  $Y$  has a binomial distribution conditioned on the parameter  $\theta$ , i.e.,  $Y|\theta \sim \text{Bin}(n, \theta)$ , where  $n$  is the size of our sample. In this setting,  $Y$  counts the number of “yes”, or “1”, observed in the sample, so that the sample mean ( $\bar{y}$ ) is a natural estimate of the true population proportion  $\theta$ . This model is often called the likelihood function, and it is a standard concept in both the Bayesian and the Classical framework. The Bayesian <sup>1</sup> statistics combines both the prior distribution and the likelihood function to create a posterior distribution. The posterior distribution represents our opinion about which are the plausible values for  $\theta$  adjusted after observing the sample data. In reality, the posterior distribution is one’s knowledge base updated using the latest survey information. For the prior and likelihood functions specified here, the posterior distribution is also a beta distribution ( $\pi(\theta|y) \sim \beta(y+a, n-y+b)$ ), but with updated hyper-parameters.

Our credibility interval for  $\vartheta$  is based on this posterior distribution. As mentioned above, these intervals represent our belief about which are the most plausible values for  $\vartheta$  given our updated knowledge base. There are different ways to calculate these intervals based on . Since we want only one measure of precision for all variables in the survey, analogous to what is done within the Classical framework, we will compute the largest possible credibility interval for any observed sample. The worst case occurs when we assume that  $a=1$  and  $b=1$  and . Using a simple approximation of the posterior by the normal distribution, the 95% credibility interval is given by, approximately:

$$\bar{y} \pm \frac{1}{\sqrt{n}}$$

For this poll, the Bayesian Credibility Interval was adjusted using standard weighting design effect  $1+L=1.3$  to account for complex weighting<sup>2</sup>

Examples of credibility intervals for different base sizes are below. Ipsos does not publish data for base sizes (sample sizes) below 100.

| Sample size | Credibility intervals |
|-------------|-----------------------|
| 2,000       | 2.5                   |
| 1,500       | 2.9                   |
| 1,000       | 3.5                   |
| 750         | 4.1                   |
| 500         | 5.0                   |
| 350         | 6.0                   |
| 200         | 7.9                   |
| 100         | 11.2                  |

<sup>1</sup> *Bayesian Data Analysis, Second Edition, Andrew Gelman, John B. Carlin, Hal S. Stern, Donald B. Rubin, Chapman & Hall/CRC | ISBN: 158488388X | 2003*

<sup>2</sup> Kish, L. (1992). *Weighting for unequal Pi*. *Journal of Official, Statistics*, 8, 2, 183200.