

## Quiz 2 — Interpreting OLS

| Questions                                                                                                                                                                                               | Answers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| 1. Consider the empirical regression $\ln(\text{wage}) = \alpha + \beta \text{education} + \varepsilon$ . How should $\beta$ be interpreted?                                                            | <input type="checkbox"/> A 1% increase in education implies $\beta$ more units of wage.<br><input type="checkbox"/> One more year of education implies $\beta$ more units of wage.<br><input type="checkbox"/> One more year of education implies $\beta$ more percent of wage.<br><input type="checkbox"/> One more year of education implies $\beta$ more percentage points of wage.<br><input type="checkbox"/> None of the above.                                                                                               |
| 2. The invertibility condition on $\mathbb{E}[XX']$ is fulfilled if:                                                                                                                                    | <input type="checkbox"/> You regress $\ln(\text{wage})$ on an intercept, a dummy for men and a dummy for women.<br><input type="checkbox"/> You regress $\ln(\text{wage})$ on an intercept, age at graduation, age, time spent unemployed and years of professional experience.<br><input type="checkbox"/> You regress $\ln(\text{wage})$ on an intercept and the number of pets you have had in your life.<br><input type="checkbox"/> You regress the real estate assets you own on an intercept, your age and your age squared. |
| 3. Consider the empirical regression $Y = \alpha + \beta X + \varepsilon$ . The true model has the same form, $Y$ is standard normal and $X$ follows a Cauchy distribution. Which statement is correct? | <input type="checkbox"/> A one-unit increase in $X$ implies a one-unit increase in $X$ .<br><input type="checkbox"/> A one-unit increase in $X$ implies a $\beta$ percent increase in $Y$ .<br><input type="checkbox"/> A one-unit increase in $X$ implies a $\beta$ unit increase in $Y$ .<br><input type="checkbox"/> None of the above.                                                                                                                                                                                          |
| 4. In which situation does the empirical $R^2$ equal 1?                                                                                                                                                 | <input type="checkbox"/> When the true model is $Y = X'\beta_0$ .<br><input type="checkbox"/> When the residuals are homoskedastic.<br><input type="checkbox"/> When $\mathbb{P}(\hat{\beta} = \beta_0) = 1$ .<br><input type="checkbox"/> None of the above.                                                                                                                                                                                                                                                                       |
| 5. If you regress $\ln(\text{quantity of a good}) = \alpha + \beta (\text{price of the good}) + \varepsilon$ , what can you say about $\beta$ ?                                                         | <input type="checkbox"/> $\beta$ is stochastic.<br><input type="checkbox"/> $\beta$ is the price elasticity of this good.<br><input type="checkbox"/> $\beta$ is the optimal price maximizing the quantity sold.<br><input type="checkbox"/> None of the above.                                                                                                                                                                                                                                                                     |