Appendix 10.2. Example sentences for conveying substantive significance of coefficients from different OLS specifications

Type of OLS model	Model specification[a]	Units[b]	Example sentence
Unstandardized coefficients	Lin-lin: $Y = \beta_0 + \beta_1 X_1$	Absolute change in the original units of the dependent variable for a one-unit (absolute) increase in the independent variable.	"For each additional child under age 15 years, a woman's monthly earnings decreased by NT$475." ($p < 0.01$; Model I, table 10.4)."
	Lin-log: $Y = \beta_0 + \beta_1 \ln X_1$	Absolute change in the original units of the dependent variable for a 1 percent (relative) increase in the independent variable.	"A 1 percent increase in monthly hours worked is associated with a NT$ 67 increase in monthly earnings ($p < 0.01$; Model I, table 10.4)."[c]
	Log-lin: $\ln Y = \beta_0 + \beta_1 X_1$	Percentage change in the dependent variable for a one-unit (absolute) increase in the independent variable.	"For each additional child a woman has, her monthly earnings are reduced by 3.6 percent ($p < 0.01$; Model II, table 10.4)."[d]
	Log-log: $\ln Y = \beta_0 + \beta_1 \ln X_1$	Percentage change in the dependent variable for a 1 percent (relative) increase in the independent variable. This is the *elasticity*.	"A 1 percent increase in monthly hours worked is associated with a 0.6 percent increase in monthly earnings (Model II, table 10.4)."
Standardized coefficients	Lin-lin: $Y = \beta_0 + \beta_1 X_1$	Change (in number of standard-deviation units) of the dependent variable for a one standard-deviation increase in the independent variable.	"A one-standard-deviation increase in mother's age at the child's birth in the occupation is associated with an increase of 0.097 standard deviations; or about 10 percent of a standard deviation in birthweight ($p < 0.05$; Model A, table 10.1)."

Notes:

[a] Terminology refers to the specification of the dependent and independent variables. "Lin" refers to an untransformed continuous variable in its original units. "Log" refers to a logarithmic transformation of a continuous variable, as in $\ln(Y)$ for the dependent variable, $\ln(X_i)$ for an independent variable. Hence a "lin-log" specification refers to one in which the dependent variable is untransformed and the independent variable is logged, as in the corresponding equation.

[b] For categorical independent variables, the comparison is between the group specified and the reference (omitted) category of the independent variable.

[c] For lin-log models, β_1 divided by 100 gives the absolute change in the dependent variable (Y)for a 1 percent increase in X_1 (Gujarati 2002).

[d] For log-lin models, $100 \times (e^{\beta} - 1)$ gives the percentage change in the dependent variable (Y) for a one-unit absolute increase in X_1 (Allison 1999).