CONVENTIONAL USE OF SYMBOLS IN REGRESSION ANALYSIS

| **Type of quantity** | **Sample** | **Population** |
|---|---|---|
| Parameters | a, b, c, d, e, p, q, r, s, t, … | $\alpha$, $\beta$, $\chi$, $\delta$, $\varepsilon$, $\pi$, $\theta$, $\rho$, $\sigma$, $\tau$, ... |
| Variables | x, y, z, … | x, y, z, … |
| Functions | f(), g(), F(), G() | f(), g(), F(), G() |
| Indexing variables or parameters or functions by subscripts or superscripts. Do not confuse superscripts with power. | i, j, k, l, m, n, … | i, j, k, l, m, n, … |
| Mean value of a variable X | | $\mu_x$ |
| Variance of a variable X | | $\sigma_x^2$ |
| Stanndard deviation of X | | Square root of var(x) = $\sigma_x$ |
| Co-variance of X and Y | | cov(x,y) = $\sigma_{xy}$ |

| Operators | Name | Meaning |
|---|---|---|
| $\Sigma_i$ $(\text{expression})_i$ | Sum operator | Find the sum by add together all elements $(\text{expression})_i$ as the index i varies. If nothing is specified for i it will be assumed to vary from the lower bound of 1 to the upper bound of n. |
| $\Pi_i$ $(\text{expression})_i$ | Product operator | Find the product by multiplying all elements $(\text{expression})_I$ as the index I varies. If nothing is specified for I it will be assumed to vary from the lower bound of 1 to the upper bound of n. |
| E(expression) | Expection operator | Find the average value of (expression) in a population |
| var(expression) | Variance operator | Find the variance of (expression) in a population |

See more in Hamiton, Appendix 1, page 289-301