How do I do elementwise operations on a matrix in Stata?

Authored by

stats writer

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Elementwise operations on a matrix in Stata refers to the process of performing mathematical operations on individual elements of a matrix, rather than the entire matrix. This can be achieved by using the matrix operators provided by Stata, such as the elementwise addition, subtraction, multiplication, and division operators. These operations are useful for manipulating data in a matrix format, allowing for efficient and precise calculations. To perform elementwise operations on a matrix in Stata, one must first declare the matrix and then use the appropriate operator to carry out the desired operation. This allows for a more precise and efficient way of performing calculations on matrices in Stata.

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Here is a small (3×3) Stata example of a matrix in which each element is exponentiated. You can generalize this example to
any kind of elementwise matrix operation.

matrix x = (1,2,3 2,3,4 3,4,5)
matrix list x

symmetric x
c1 c2 c3
r1 1
r2 2 3
r3 3 4 5

matrix y = x /* create y */

```
/* begin loop */
local i=1
while `i'<=3 {
local j=1
while `j'<=3 {
matrix y = exp(x)
local j = `j' + 1
}
local i = `i' + 1
} /* end loop */

/* matrix y is now the exponentiated matrix */
matrix list y

symmetric y
c1 c2 c3
r1 2.7182818
r2 7.3890561 20.085537
r3 20.085537 54.59815 148.41316
```