Title

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matrix get — Access system matrices

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Description

The `get()` matrix function obtains a copy of an internal Stata system matrix. Some system matrices can also be obtained more easily by directly referring to the returned result after a command. In particular, the coefficient vector can be referred to as `e(b)`, the variance–covariance matrix of estimators as `e(V)`, and the constraints matrix as `e(Cns)` after an estimation command.

`mat_put_rr` is a programmer's command that posts *matname* as the internal **Rr** matrix. *matname* must have one more than the number of columns in the `e(b)` or `e(V)` matrices. The extra column contains the r vector, and the earlier columns contain the **R** matrix for the Wald test

$$Rb = r$$

The `matrix ...get(Rr)` command provides a way to obtain the current **Rr** system matrix.

Syntax

Obtain copy of internal Stata system matrix

`matrix` [`define`] *matname* `=` `get(`*systemname*`)`

Post matrix as internal **Rr** *matrix*

`mat_put_rr` *matname*

where *systemname* is

`_b`	coefficients after any estimation command
`VCE`	covariance matrix of estimators after any estimation command
`Rr`	constraint matrix after `test`; see [R] **test**
`Cns`	constraint matrix after any estimation command

Remarks and examples

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`get()` obtains copies of matrices containing coefficients and the covariance matrix of the estimators after estimation commands (such as `regress` and `probit`) and obtains copies of matrices left behind by other Stata commands. The other side of `get()` is `ereturn post`, which allows ado-file estimation commands to post results to Stata's internal areas; see [P] **ereturn**.

Example 1

After any model-fitting command, the coefficients are available in _b and the variance–covariance matrix of the estimators in VCE.

```
. use https://www.stata-press.com/data/r18/auto
(1978 automobile data)
. regress price weight mpg
  (output omitted)
```

Here we can directly use e(b) and e(V) to obtain the matrices:

```
. matrix list e(b)
e(b)[1,3]
        weight         mpg       _cons
y1   1.7465592  -49.512221   1946.0687
. matrix list e(V)
symmetric e(V)[3,3]
            weight         mpg       _cons
weight   .41133468
   mpg   44.601659    7422.863
 _cons  -2191.9032  -292759.82    12938766
```

We can also use the matrix get() function to obtain these matrices:

```
. matrix b = get(_b)
. matrix V = get(VCE)
. matrix list b
b[1,3]
        weight         mpg       _cons
y1   1.7465592  -49.512221   1946.0687
. matrix list V
symmetric V[3,3]
            weight         mpg       _cons
weight   .41133468
   mpg   44.601659    7422.863
 _cons  -2191.9032  -292759.82    12938766
```

The columns of b and both dimensions of V are properly labeled.

▷ Example 2

After `test`, the restriction matrix is available in `Rr`. Having just estimated a regression of `price` on `weight` and `mpg`, we will run a test and then get the restriction matrix:

```
. test weight=1, notest
 ( 1)  weight = 1
. test mpg=40, accum
 ( 1)  weight = 1
 ( 2)  mpg = 40
       F(  2,    71) =    6.29
            Prob > F =    0.0030
. matrix rxtr=get(Rr)
. matrix list rxtr
rxtr[2,4]
    c1  c2  c3  c4
r1   1   0   0   1
r2   0   1   0  40
```

◁

Also see

[P] **matrix** — Introduction to matrix commands

[U] 13.5 Accessing coefficients and standard errors

[U] 14 Matrix expressions

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