

error() — Issue error message

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Description

`error(rc)` displays the standard Stata error message associated with return code *rc* and returns *rc*; see [P] **error** for a listing of return codes. `error()` does not abort execution; standard usage is `exit(error(rc))`.

`_error()` aborts execution and produces a traceback log.

`_error(errnum)` produces a traceback log with standard Mata error message *errnum*; see [M-2] **Errors** for a listing of the standard Mata error codes.

`_error(errtxt)` produces a traceback log with error number 3498 and custom text *errtxt*.

`_error(errnum, errtxt)` produces a traceback log with error number *errnum* and custom text *errtxt*.

If *errtxt* is specified, it should contain straight text; SMCL codes are not interpreted.

Syntax

real scalar `error(real scalar rc)`

void `_error(real scalar errnum)`

void `_error(string scalar errtxt)`

void `_error(real scalar errnum, string scalar errtxt)`

Remarks and examples

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Remarks are presented under the following headings:

Use of _error()
Use of error()

Use of _error()

`_error()` aborts execution and produces a traceback log:

```
: myfunction(A,B)
      mysub(): 3200 conformability error
myfunction(): - function returned error
      <istmt>:  - function returned error
r(3200);
```

The above output was created because function `mymsub()` contained the line

```
_error(3200)
```

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and 3200 is the error number associated with the standard message “conformability error”; see [M-2] **Errors**. Possibly, the code read

```
if (rows(A)!=rows(B) | cols(A)!=cols(B)) {
    _error(3200)
}
```

Another kind of mistake might produce

```
: myfunction(A,B)
      mysub(): 3498 zeros on diagonal not allowed
myfunction(): - function returned error
<istmt>:      - function returned error
r(3498);
```

and that could be produced by the code

```
if (diag0cnt(A)>0) {
    _error("zeros on diagonal not allowed")
}
```

If we wanted to produce the same text but change the error number to 3300, we could have coded

```
if (diag0cnt(A)>0) {
    _error(3300, "zeros on diagonal not allowed")
}
```

Coding `_error()` is not always necessary. In our conformability-error example, imagine that more of the code read

```
...
if (rows(A)!=rows(B) | cols(A)!=cols(B)) {
    _error(3200)
}
C = A + B
...
```

If we simplified the code to read

```
...
C = A + B
...
```

the conformability error would still be detected because `+` requires p-conformability:

```
: myfunction(A,B)
      +: 3200 conformability error
      mysub(): - conformability error
myfunction(): - function returned error
<istmt>:      - function returned error
r(3200);
```

Sometimes, however, you must detect the error yourself. For instance,

```

...
if (rows(A)!=rows(B) | cols(A)!=cols(B) | rows(A)!=2*cols(A)) {
    _error(3200)
}
C = A + B
...

```

We assume we have some good reason to require that A has twice as many rows as columns. +, however, will not require that, and perhaps no other calculation we will make will require that, either. Or perhaps it will be subsequently detected, but in a way that leads to a confusing error message for the caller.

Use of error()

error(*rc*) does not cause the program to terminate. Standard usage is

```
exit(error(rc))
```

such as

```
exit(error(503))
```

In any case, error() does not produce a traceback log:

```

: myfunction(A,B)
conformability error
r(503);

```

error() is intended to be used in functions that are subroutines of ado-files:

```

----- begin example.ado -----
program example
    version 17.0
    ...
    mata: myfunction("`mat1'", "`mat2'")
    ...
end
version 17.0
mata:
void myfunction(string scalar matname1, string scalar matname2)
{
    ...
    A = st_matrix(matname1)
    B = st_matrix(matname2)
    if (rows(A)!=rows(B) | cols(A)!=cols(B)) {
        exit(error(503))
    }
    C = A + B
    ...
}
end
----- end example.ado -----

```

This way, when the example command is used incorrectly, the user will see

```

. example ...
conformability error
r(503);

```

rather than the traceback log that would have been produced had we omitted the test and `exit(error(503))`:

```
. example ...
      +: 3200 conformability error
myfunction(): - function returned error
      <istmt>: - function returned error
r(3200);
```

Conformability

`error(rc)`:

```
rc: 1 × 1
result: 1 × 1
```

`_error(errnum)`:

```
errnum: 1 × 1
result: void
```

`_error(errtxt)`:

```
errtxt: 1 × 1
result: void
```

`_error(errnum, errtxt)`:

```
errnum: 1 × 1
errtxt: 1 × 1
result: void
```

Diagnostics

`error(rc)` does not abort execution; code `exit(error(rc))` if that is your desire; see [\[M-5\] `exit\(\)`](#).

The code `error(rc)` returns can differ from `rc` if `rc` is not a standard code or if there is a better code associated with it.

`error(rc)` with `rc = 0` produces no output and returns 0.

`_error(errnum)`, `_error(errtxt)`, and `_error(errnum, errtxt)` always abort with error. `_error()` will abort with error because you called it wrong if you specify an `errnum` less than 1 or greater than 2,147,483,647 or if you specify an `errtxt` longer than 100 characters. If you specify an `errnum` that is not a standard code, the text of the error messages will read “Stata returned error”.

Also see

[\[M-2\] **Errors**](#) — Error codes

[\[M-5\] `exit\(\)`](#) — Terminate execution

[\[M-4\] **Programming**](#) — Programming functions