

st_data() — Load copy of current Stata dataset

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Description

`_st_data(i, j)` returns the numeric value of the *i*th observation of the *j*th Stata variable. Observations are numbered 1 through `st_nobs()`. Variables are numbered 1 through `st_nvar()`.

`st_data(i, j)` is similar to `_st_data(i, j)` except

1. *i* may be specified as a vector or matrix to obtain multiple observations simultaneously,
2. *j* may be specified using names or indices (indices are faster), and
3. *j* may be specified to obtain multiple variables simultaneously.

The net effect is that `st_data()` can return a scalar (the value of one variable in one observation), a row vector (the value of many variables in an observation), a column vector (the value of a variable in many observations), or a matrix (the value of many variables in many observations).

`st_data(i, j, selectvar)` works like `st_data(i, j)` except that only observations for which *selectvar* $\neq 0$ are returned.

`_st_sdata()` and `st_sdata()` are the string variants of `_st_data()` and `st_data()`. `_st_data()` and `st_data()` are for use with numeric variables; they return missing (.) when used with string variables. `_st_sdata()` and `st_sdata()` are for use with string variables; they return empty string ("") when used with numeric variables.

Syntax

real scalar `_st_data(real scalar i, real scalar j)`

real matrix `st_data(real matrix i, rowvector j)` (1,2)

real matrix `st_data(real matrix i, rowvector j, scalar selectvar)` (1,2,3)

string scalar `_st_sdata(real scalar i, real scalar j)`

string matrix `st_sdata(real matrix i, rowvector j)` (1,2)

string matrix `st_sdata(real matrix i, rowvector j, scalar selectvar)` (1,2,3)

where

1. *i* may be specified as a 1×1 scalar, as a 1×1 scalar containing missing, as a column vector of observation numbers, as a row vector specifying an observation range, or as a $k \times 2$ matrix specifying both.
 - a. `st_data(1, 2)` returns the first observation on the second variable.

- b. `st_data(., 2)` returns all observations on the second variable.
- c. `st_data((1\2\5), 2)` returns observations 1, 2, and 5 on the second variable.
- d. `st_data((1,5), 2)` returns observations 1 through 5 on the second variable.
- e. `st_data((1,5\7,9), 2)` returns observations 1 through 5 and observations 7 through 9 on the second variable.

When a range is specified, any element of the range (i_1, i_2) may be specified to contribute zero observations if $i_2 = i_1 - 1$.

- 2. j may be specified as a real row vector or as a string scalar or string row vector.
 - a. `st_data(., .)` returns the values of all variables, all observations of the Stata dataset.
 - b. `st_data(., 1)` returns the value of the first variable, all observations.
 - c. `st_data(., (3,1,9))` returns the values of the third, first, and ninth variables of all observations.
 - d. `st_data(., ("mpg", "weight"))` returns the values of variables `mpg` and `weight`, all observations.
 - e. `st_data(., ("mpg weight"))` does the same as d above.
 - f. `st_data(., ("gnp", "l.gnp"))` returns the values of `gnp` and the lag of `gnp`, all observations.
 - g. `st_data(., ("gnp l.gnp"))` does the same as f above.
 - h. `st_data(., ("mpg i.rep78"))` returns the value of `mpg` and the 5 pseudovariables associated with `i.rep78`. There are 5 pseudovariables because we are imagining that `auto.dta` is in memory; the actual number is a function of the values taken on by the variable in the sample specified. Factor variables can be specified only with string scalars; specifying ("`mpg`", "`i.rep78`") will not work.
- 3. *selectvar* may be specified as real or as a string. Observations for which *selectvar* $\neq 0$ will be selected. If *selectvar* is real, it is interpreted as a variable number. If string, *selectvar* should contain the name of a Stata variable.

Specifying *selectvar* as "" or as missing (.) has the same result as not specifying *selectvar*; no observations are excluded.

Specifying *selectvar* as 0 means that observations with missing values of the variables specified by j are to be excluded.

Remarks and examples

[stata.com](http://www.stata.com)

Remarks are presented under the following headings:

Description of `_st_data()` and `_st_sdata()`

Description of `st_data()` and `st_sdata()`

Details of observation subscripting using `st_data()` and `st_sdata()`

Description of `_st_data()` and `_st_sdata()`

`_st_data()` returns one variable's value in one observation. You refer to variables and observations by their numbers. The first variable in the Stata dataset is 1; the first observation is 1.

<code>_st_data(1, 1)</code>	value of 1st obs., 1st variable
<code>_st_data(1, 2)</code>	value of 1st obs., 2nd variable
<code>_st_data(2, 1)</code>	value of 2nd obs., 1st variable

`_st_sdata()` works the same way. `_st_data()` is for use with numeric variables, and `_st_sdata()` is for use with string variables.

`_st_data()` and `_st_sdata()` are the fastest way to obtain the value of a variable in one observation.

Description of `st_data()` and `st_sdata()`

`st_data()` can be used just like `_st_data()`, and used that way, it produces the same result.

Variables, however, can be referred to by their names or their numbers:

<code>st_data(1, 1)</code>	value of 1st obs., 1st variable
<code>st_data(1, 2)</code>	value of 1st obs., 2nd variable
<code>st_data(2, 1)</code>	value of 2nd obs., 1st variable
<code>st_data(1, "mpg")</code>	value of 1st obs, variable mpg
<code>st_data(2, "mpg")</code>	value of 2nd obs, variable mpg

Also, you may specify more than one variable:

<code>st_data(2, (1,2,3))</code>	value of 2nd obs., variables 1, 2, and 3
<code>st_data(2, ("mpg", "weight", "displ"))</code>	value of 2nd obs., variables mpg, weight, and displ
<code>st_data(2, "mpg weight displ")</code>	(same as previous)

Used this way, `st_data()` returns a row vector.

Similarly, you may obtain multiple observations:

<code>st_data((1\2\3), 10)</code>	values of obs. 1, 2, and 3, variable 10
<code>st_data((1,5), 10)</code>	values of obs. 1 through 5, variable 10
<code>st_data((1,5)\(7,9), 10)</code>	values of obs. 1 through 5 and 7 through 9, variable 10

`st_sdata()` works the same way as `st_data()`.

Details of observation subscripting using `st_data()` and `st_sdata()`

1. i may be specified as a scalar: the specified, single observation is returned. i must be between 1 and `st_nobs()`; see [M-5] `st_nvar()`.
2. i may be specified as a scalar containing missing value: all observations are returned.
3. i may be specified as a column vector: the specified observations are returned. Each element of i must be between 1 and `st_nobs()` or may be missing. Missing is interpreted as `st_nobs()`.
4. i may be specified as a 1×2 row vector: the specified range of observations is returned; (c_1, c_2) returns the $c_2 - c_1 + 1$ observations c_1 through c_2 .

 $c_2 - c_1 + 1$ must evaluate to a number greater than or equal to 0. In general, c_1 and c_2 must be between 1 and `st_nobs()`, but if $c_2 - c_1 + 1 = 0$, then c_1 may be between 1 and `st_nobs()` + 1 and c_2 may be between 0 and `st_nobs()`. Regardless, $c_1 == .$ or $c_2 == .$ is interpreted as `st_nobs()`.
5. i may be specified as a $k \times 2$ matrix: $((1,5)\(7,7)\(20,30))$ specifies observations 1 through 5, 7, and 20 through 30.

Conformability

`_st_data(i, j)`, `_st_sdata(i, j)`:

i : 1×1
 j : 1×1
 result: 1×1

`st_data(i, j)`, `st_sdata(i, j)`:

i : $n \times 1$ or $n_2 \times 2$
 j : $1 \times k$ or 1×1 containing k elements when expanded
 result: $n \times k$

`st_data(i, j, selectvar)`, `st_sdata(i, j, selectvar)`:

i : $n \times 1$ or $n_2 \times 2$
 j : $1 \times k$ or 1×1 containing k elements when expanded
 $selectvar$: 1×1
 result: $(n - e) \times k$, where e is number of observations excluded by $selectvar$

Diagnostics

`_st_data(i, j)` returns missing (`.`) if i or j is out of range; it does not abort with error.

`_st_sdata(i, j)` returns "" if i or j is out of range; it does not abort with error.

`st_data(i, j)` and `st_sdata(i, j)` abort with error if any element of i or j is out of range. j may be specified as variable names or variable indices. If names are specified, abbreviations are allowed. If you do not want this and no factor variables nor time-series-operated variables are specified, use `st_varindex()` (see [M-5] `st_varindex()`) to translate variable names into variable indices.

Also see

[M-5] [st_view\(\)](#) — Make matrix that is a view onto current Stata dataset

[M-5] [st_store\(\)](#) — Modify values stored in current Stata dataset

[M-4] [Stata](#) — Stata interface functions

[D] [putmata](#) — Put Stata variables into Mata and vice versa