<u>Title</u>

estout - Making regression tables from stored estimates

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<u>Syntax</u>

```
estout [ namelist ] [ using filename ] [ , options ]
```

```
where namelist is _all | * | name [name ...]
name is identifier | .
```

options

Description

Parameter statistics	
cells(elements and subopts)	<pre>contents of the table cells, where an element's subopts are in paren- theses, i.e. element[(subopts)]</pre>
elements:	
b	raw coefficients
se	standard errors
t	t-statistics
р	p-values
ci	confidence intervals
ci_l	lower bounds of confidence intervals
ci_u	upper bounds of confidence intervals
myel	results from e (myel)
subopts (for each element):
[<u>no]s</u> tar	attach "significance stars"
fmt (<u>fmt</u> [<u>fmt</u>])	set the display format(s)
<u>l</u> abel(string)	define a label for <i>element</i>
par[(1 r)] nopar	place results in parentheses
<u>k</u> eep(keeplist)	drop certain individual results
<u>d</u> rop(droplist)	keep certain individual results
<pre>pattern(pattern)</pre>	model selection
[no]abs	use absolute t-statistics

```
drop(droplist)
                                  drop individual parameters
  keep(keeplist)
                                 keep individual parameters
  order(orderlist)
                                 change order of parameters
  indicate(groups [, subopt])
                                  indicate presence of parameters
                                  redefine "Yes" and "No" labels
    subopt: labels(yes no)
  equations(eqmatchlist)
                                 match the models' equations
  eform[(pattern)] | noeform
                                 report exponentiated coefficients
                                  apply transformations to coefficients
  transform(list [, subopt])
    subopt: pattern(pattern)])
                                  select models
  margin[(u|c|p)] | nomargin
                                  report marginal effects/elasticities
  discrete(string) | nodiscrete identify 0/1 variables (if margin)
                                  select equations for marginal effects
  meqs(eq list)
  level(#)
                                  set level for confidence intervals
Summary statistics
  stats(scalarlist[, subopts])
                                 display summary statistics at the
                                 bottom of the table
    subopts:
      fmt(<u>fmt</u> [<u>fmt</u> ...])
                                  set the display formats
                                 label the summary statistics
      labels(strlist[,
         label subopts])
      star[(sca'list)] | nostar denote the model significance
Significance stars
  starlevels(levelslist)
                                  define thresholds and symbols, where
                                    where 'levelslist' is 'symbol #
                                    [symbol # ...]' with # in (0,1] and
                                    listed in descending order
  [<u>no]stard</u>etach
                                  display the stars in their own column
Layout
  varwidth(#)
                                  set width of the table's left stub
  modelwidth(#)
                                  set width of the results columns
  [<u>no</u>]<u>ab</u>brev
                                 abbreviate long names and labels
                                 place equations from multiple-
  [no]unstack
                                    equation models in separate columns
  begin(string)
                                  specify the beginning of the rows
  delimiter(string)
                                  specify the column delimiter
                                  specify the ending of the table rows
  end(string)
  dmarker(string)
                                 define the decimal marker
                                 define the minus sign
  msign(string)
                                 print the leading zero of fixed
  [no]lz
                                    format numbers in (-1,1)
  extracols(numlist)
                                  add empty column to the table
  substitute(subst)
                                  apply end-of-pipe substitutions, where
                                    'subst' is 'from to [from to ... ]'
```

```
Labeling
  title(string)
                                   specify a title for the table
                                   add a significance symbols legend
  [no]legend
  prehead(strlist)
                                   add text before the table heading
                                   add text after the table heading
  posthead(strlist)
                                   add text before the table footer
  prefoot(strlist)
  postfoot(strlist)
                                   add text after the table footer
  hlinechar(string)
                                   specify look of Chline
                                   make use of variable labels
  [<u>no]</u>label
  varlabels(matchlist[, sub.])
                                   relabel the parameters
    subopts:
      blist(matchlist)
                                   assign prefixes to certain rows
      elist(matchlist)
                                   assign suffixes to certain rows
      label subopts
  refcat(matchlist[, subopts])
                                   add reference category information
    subopts:
      label(string)
                                   redefine the "ref." label
      <u>b</u>elow
                                   change positioning of refcat
  mlabels(strlist[, subopts])
                                   label the models
    subopts:
                                   use the name/label of the dependent
      [<u>no]dep</u>vars
                                       variable as model label
                                   number models labels consecutively
      [<u>no</u>]<u>num</u>bers
      <u>label subopts</u>
                                   label the columns within models
  <u>coll</u>abels(strlist[,
    label subopts])
                                   label the equations
  eqlabels(strlist[,
    label_subopts])
                                   define and label groups of models
  mgroups(strlist[, subopts])
    subopts:
      pattern(pattern)
                                   define the grouping of the models
      <u>label subopts</u>
                                   add a row containing model numbers
  <u>numbers[(1 r)]</u> <u>nonumbers</u>
Output
                                   overwrite an existing file
  [<u>no]</u>replace
  [<u>no</u>]append
                                   append the output to an existing file
                                   print the table in the results window
  [no]type
  [no]showtabs
                                   display tabs as <T>s
<u>Defaults</u>
  style(style)
                                   specify a style for the output table
    styles:
      tab
                                   tab delimited table
      fixed
                                   fixed format table
                                   table for use with LaTeX
      tex
                                   table for use with HTML
      html
                                   user defined addition
      mystyle
```

label_subopts	Description
[mo]mone	suppress the labels
prefix(string)	add a common prefix
suffix(string)	add a common suffix
<u>b</u> egin(strlist)	add an overall prefix
<u>e</u> nd(strlist)	add an overall suffix
[<u>mo]l</u> ast	print the last occurrence of end
[mo]span	span columns if appropriate
<u>er</u> epeat(string)	add a "span" suffix
lhs(string)	label the table's left stub

Description

estout assembles a table of coefficients, "significance stars", summary statistics, standard errors, t- or z-statistics, p-values, confidence intervals, and other statistics for one or more models previously fitted and stored by <u>estimates store</u> or <u>esto</u>. It then writes the table to the Stata log and/or to a text file specified by using. *namelist* provides the names of the stored estimation sets to be tabulated. You may use the * and ? wildcards in *namelist*. The results estimated last may be indicated by a period (.), even if they have not yet been stored. If no model is specified, estout tabulates the estimation sets stored by esto (see help <u>esto</u>) or, if no such estimates are present, the currently active estimates (i.e. the model fit last). estout may be used after any estimation command that correctly returns its results in e().

See the <u>Introduction</u> in the <u>Examples</u> section for an introduction on using **estout**. See help <u>estimates</u> for general information about managing estimation results. Furthermore, see help <u>esto</u> for an alternative to the estimates store command.

The default for **estout** is to produce a plain, tab-separated table containing point estimates. Producing a fully formatted end-product may involve specifying many options. However, note that a simple-to-use **estout** wrapper producing pre-formatted publication style tables is available as **esta**. Furthermore, use **estadd** to make additional results available for tabulation such as the standardized coefficients or the means and standard deviations of the regressors.

Programms similar to **estout** include **outreg** by John Luke Gallup, **outreg2** by Roy Wada, **modltbl** by John H. Tyler, **mktab** by Nicholas Winter, **outtex** by Antoine Terracol, or **est2tex** by Marc Muendler. Also see Newson (2003) for a very appealing approach.

Options

Contents

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Parameter statistics

cells(array) specifies the parameter statistics to be reported and how they are to be arranged. The default is for cells to report raw coefficients only, i.e. cells(b). cells(none) may be used to completely suppress the printing of parameter statistics. Alternatively, cells(b se) would result in the reporting of raw coefficients and standard errors. Multiple statistics are placed in separate rows beneath one another by default. However, elements of array that are listed in quotes, e.g. cells("b se"), are placed beside one another. For example, cells("b p" se) would produce a table with raw coefficients and standard errors beneath one another in the first column and p-values in the top row of the second column for each model.

The parameter statistics available are **b** (coefficients), **se** (standard errors), **t** (t/z-statistics), **p** (p-values), and **ci** (confidence intervals; to display the lower and upper bounds in separate cells use **ci_l** and **ci_u**). Any additional parameter statistics included in the **e**()-returns for the models can be tabulated as well. If, for example, **e**(**beta**) contains the standardized coefficients, type **cells(beta**) to tabulate them. Use **estadd** to add statistics such as the standardized coefficients to the **e**()-returns of a model. Also see the **eform** and **margin** options for more information on the kinds of statistics that can be displayed.

A set of suboptions may be specified in parentheses for each statistic named in *array*. For example, to add significance stars to the coefficients and place the standard errors in parentheses, specify **cells(b(star) se(par))**. The following suboptions are available. Use:

- star to specify that stars denoting the significance of the coefficients be attached to the statistic: * for p<.05, ** for p<.01, and *** for p<.001. The symbols and the values for the thresholds and the number of levels are fully customizable (see the <u>Significance stars</u> options).
- fmt(<u>fmt [fmt</u> ...]) to specify the display format(s) of a statistic. It defaults to the display format for raw coefficients (b), or %9.0g. If only one format is specified, it is used for all occurrences of the statistic. For example, type

. estout ..., cells("b(fmt(3)) t(fmt(2))")

to print coefficients and t-values beside one another using three decimal places for coefficients and two decimal places for t-values. If multiple formats are specified, the first format is used for the first regressor in the estimates table, the second format for the second regressor, and so on. The last format is used for the remaining regressors if the number of regressors in the table is greater than the number of specified formats. For instance, type

. estout ..., cells(b(fmt(3 4 2)))

to use three decimal places for the first coefficient, four decimal places for the second, and two decimal places for all remaining coefficients. Note that, regardless of the display format chosen, leading and trailing blanks are removed from the numbers. White space can be added by specifying a **modelwidth()** (see the <u>Layout</u> options). <u>fmt</u> may be any of Stata's numerical display formats, e.g., **%9.0g** or **%8.2f**, an integer # such as **1** or **3** to use a fixed format with # decimal places, or **a**# such as **a1** or **a3** to use **estout**'s automatic display format (see <u>Numerical</u> <u>formats</u> in the <u>Remarks</u> section for details).

- label(string) to specify a label to appear in the column heading. The default is the name of the statistic.
- par[(l r)] to specify that the statistic in question be placed in
 parentheses. It is also possible to specify custom "parentheses".
 For example, se(par({ })) would display the standard errors in
 curly brackets. Or, se(par(`"="("' `")""')) will write
 parentheses in a way that Excel can recognize. For ci the syntax
 is:

ci(par[(l m r)])

- drop(droplist) to cause certain individual statistics to be dropped. For example, specifying t(drop(_cons)) suppresses the t-statistics for the constants. A droplist comprises one or more specifications, separated by white space. A specification can be either a parameter name (e.g. price), an equation name followed by a colon (e.g. mean:), or a full name (e.g. mean:price). You may use the * and ? wildcards in equation names and parameter names. Be sure to refer to the matched equation names, and not to the original equation names in the models, when using the equations() option to match equations.
- keep(keeplist) to cause certain individual statistics to be kept. For example, the specification t(keep(mpg)) would display the t-statistics exclusively for the variable mpg. See the drop() suboption above for further details.

- pattern(pattern) to designate a pattern of models for which the
 statistics are to be reported, where the pattern consists of
 zeros and ones. A 1 indicates that the statistic be printed; 0
 indicates that it be suppressed. For example beta(pattern(1 0 1))
 would result in beta being reported for the first and third
 models, but not for the second.
- **abs** to specify that absolute t-statistics be used instead of regular t-statistics (relevant only if used with t()).
- drop(droplist) identifies the coefficients to be dropped from the table. A
 droplist comprises one or more specifications, separated by white space.
 A specification can be either a parameter name (e.g. price), an equation
 name followed by a colon (e.g. mean:), or a full name (e.g. mean:price).
 You may use the * and ? wildcards in equation names and parameter names.
 Be sure to refer to the matched equation names, and not to the original
 equation names in the models, when using the equations() option to match
 equations.
- keep(keeplist) selects the coefficients to be included in the table. keeplist
 is specified analogous to droplist in drop() (see above). Note that
 keep() does not change the the order of the coefficients. Use order() to
 change the order of coefficients.
- order(orderlist) changes the order of the coefficients and equations within the table. orderlist is specified analogous to droplist in drop() (see above). Reordering of coefficients is performed equation by equation, unless equations are explicitly specified. Coefficients and equations that do not appear in orderlist are placed last (in their original order).
- indicate(groups [, labels(yes no)]) indicates for each model (or, if unstack
 is specified, for each equation) the presence of certain groups of
 coefficients at the end of the table body. The syntax for groups is

group [group ...]
where a group is

[name =] list

and *list* is a list of coefficient specifications as defined in **drop()** above. The single groups should be enclosed in quotes unless there is only one group and "*name* =" is specified. If "*name* =" is omitted, the first element of *list* is used as name. Note that *name* may contain spaces.

For example, if some of the models contain a set of year dummies, say **y1 y2 y3**, specify

estout ..., indicate(year effects = y1 y2 y3)

to drop the dummies from the table and add a "year effects" row containing "Yes" for models in which *at least one* of the dummies is present, and "No" for the other models.

Use the **labels()** suboption to redefine the indication labels to be printed in the table. The default is **labels(Yes No)**. Use quotes if the labels include spaces, e.g. **labels("in model" "not in model")**.

- equations(eqmatchlist) specifies how the models' equations are to be matched.
 This option is passed to the internal call of estimates table. See help
 estimates on how to specify this option. Note that estout automatically
 matches the models' first equations into an equation called main if the
 equations have different names. Specify equations("") to suppress this
 behavior.
- eform[(pattern)] displays the coefficient table in exponentiated form. The
 exponent of b is displayed in lieu of the untransformed coefficient;
 standard errors and confidence intervals are transformed as well. Specify
 a pattern if the exponentiation is to be applied only for certain models.
 For instance, eform(1 0 1) would transform the statistics for Models 1
 and 3, but not for Model 2. Note that, unlike regress and estimates
 table, estout in eform-mode does not suppress the display of the
 intercept. To drop the intercept in eform-mode, specify drop(_cons).
 Note: eform is implemented via the transform() option. If both options
 are specified, transform() takes precedence over eform.
- transform(list [, pattern(pattern)]) displays transformed coefficients, standard errors and confidence intervals. list may be

fx dfx

where fx is the transformation function and dfx is its first derivative. fx is applied to coefficients and confidence intervals, that is, $fx(\mathbf{b})$ and $fx(\mathbf{ci})$ is displayed instead of **b** and **ci**. dfx is used to delta transform standard errors, i.e. $\mathbf{se}*dfx(\mathbf{b})$ is displayed instead of \mathbf{se} . Use \mathbf{e} as a placeholder for the function's argument in fx and dfx. For example, type

estout ..., transform(exp(@) exp(@))

to report exponentiated results (this is equivalent to specifying the **eform** option).

Alternatively, *list* may be specified as

coefs fx dfx [... [coefs] fx dfx]

where *coefs* identifies the coefficients to be transformed. Syntax for *coefs* is as explained above in the description of the **drop()** option (however, include *coefs* in quotes if it contains multiple elements). Say, a model has two equations, **price** and **select**, and you want to exponentiate the **price** equation but not the **select** equation. You could then type

estout ..., transform(price: exp(@) exp(@))

Note that omitting *coef* in the last transformation specification causes the last transformation to be applied to all remaining coefficients.

Specify the **pattern()** suboption if the transformations are to be applied only for certain models. For instance, **pattern(1 0 1)** would apply the transformation to Models 1 and 3, but not Model 2.

margin[(u|c|p)] indicates that the marginal effects or elasticities be reported instead of the raw coefficients. This option has an effect only if mfx has been applied to a model before its results were stored (see help mfx) or if a dprobit (see help probit), truncreg,marginal (help truncreg), or dtobit (Cong 2000) model is estimated. One of the parameters u, c, or p, corresponding to the unconditional, conditional, and probability marginal effects, respectively, is required for dtobit. Note that the standard errors, confidence intervals, t-statistics, and p-values are transformed as well.

Using the **margin** option with multiple-equation models can be tricky. The marginal effects of variables that are used in several equations are printed repeatedly for each equation because the equations per se are meaningless for **mfx**. To display the effects for certain equations only, specify the **meqs()** option. Alternatively, use the **keep()** and **drop()** options to eliminate redundant rows. The **equations()** option might also be of help here.

discrete(string) may be used to override the default symbol and explanatory
 text used to identify dummy variables when reporting marginal effects.
 The first token in string is used as the symbol. The default is:

discrete(" (d)" for discrete change of dummy variable from 0 to 1)

To display explanatory text, specify either the **legend** option or use the **@discrete** variable.

Use **nodiscrete** to disable the identification of dummy variables as such. The default is to indicate the dummy variables unless they have been interpreted as continuous variables in all of the models for which results are reported (for **dprobit** and **dtobit**, however, dummy variables will always be listed as discrete variables unless **nodiscrete** is specified).

- meqs(eq_list) specifies that marginals be printed only for the equations in eq_list. Specifying this option does not affect how the marginals are calculated. An eq_list comprises one or more equation names (without colons) separated by white space. If you use the equations() option to match equations, be sure to refer to the matched equation names and not to the original equation names in the models.
- level(#) assigns the confidence level, in percent, for the confidence
 intervals of the coefficients (see help level).

- Summary statistics

stats(scalarlist[, stats_subopts]) specifies one or more scalar statistics separated by white space - to be displayed at the bottom of the table.
 The scalarlist may contain e()-scalars (such as, e.g., N, r2, or chi2)
 and the following statistics:

aic	Akaike's information criterion
bic	Schwarz's information criterion
rank	rank of $\textbf{e}(\textbf{V}),$ i.e. the number of free parameters in model
р	the p-value of the model (overall model significance)

See help <u>estimates</u> for details on the **aic** and **bic** statistics. The rules for the determination of **p** are as follows (note that although the procedure outlined below is appropriate for most models, there might be some models for which it is not):

- p-value provided: If the e(p) scalar is provided by the estimation command, it will be interpreted as indicating the p-value of the model.
- 2) F test: If e(p) is not provided, estout checks for the presence of the e(df_m), e(df_r), and e(F) scalars and, if they are present, the p-value of the model will be calculated as Ftail(df_m,df_r,F). This p-value corresponds to the standard overall F test of linear regression.
- 3) chi2 test: Otherwise, if neither e(p) nor e(F) is provided, estout checks for the presence of e(df_m) and e(chi2) and, if they are present, calculates the p-value as chi2tail(df_m,chi2). This p-value corresponds to the Likelihood-Ratio or Wald chi2 test.
- If neither e(p), e(F), nor e(chi2) is available, no p-value will be reported.

Type **ereturn list** after estimating a model to see a list of the returned **e**()-scalars (see help <u>ereturn</u>). Use <u>estadd</u> (available from the SSC Archive) to add extra statistics to the **e**()-returns.

The following stats_subopts are available. Use:

fmt(<u>fmt [fmt</u> ...]) to set the display formats for the scalar
statistics in scalarlist. <u>fmt</u> may be any of Stata's numerical
display formats, e.g., %9.0g or %8.2f, an integer # such as 1 or
3 to use a fixed format with # decimal places, or a# such as a1
or a3 to use estout's automatic display format (see <u>Numerical
formats</u> in the <u>Remarks</u> section for details). For example, fmt(3
0) would be suitable for stats(r2_a N). Note that the last
specified format is used for the remaining scalars if the list of
scalars is longer than the list of formats. Thus, only one format
need be specified if all scalars are to be displayed in the same
format. If no format is specified, the default format is the
display format of the coefficients.

labels(strlist[, <u>label_subopts</u>]) to specify labels for the scalars in scalarlist. If specified, the labels are used instead of the scalar names. For example:

```
. estout ..., stats(r2_a N, labels("Adj. R-Square" "Number of
Cases"))
```

Note that names like **r2_a** produce an error in LaTeX because the underscore character has a special meaning in LaTeX (to print the underscore in LaTeX, type _). Use the **label()** suboption to rename such statistics, e.g. **stats(r2_a, labels(r2_a))**. An alternative approach is to use **estout**'s **substitute()** option (see the <u>Layout</u> options).

star[(scalarlist)] to specify that the overall significance of the model be denoted by stars. The stars are attached to the scalar statistics specified in scalarlist. If scalarlist is omitted, the stars are attached to the first reported scalar statistic. The printing of the stars is suppressed in empty results cells (i.e. if the scalar statistic in question is missing for a certain model). The determination of the model significance is based on the p-value of the model (see above).

Hint: It is possible to attach the stars to different scalar statistics within the same table. For example, specify **stats(,star(r2_a r2_p))** when tabulating OLS estimates and, say, probit estimates. For the OLS models, the F test will be carried out and the significance stars will be attached to the **r2_a**; for the probit models, the chi2 test will be used and the stars will appear next to the **r2_p**.

J Significance stars

- starlevels(levelslist) overrides the default thresholds and symbols for
 "significance stars". For instance, starlevels(+ 0.10 * 0.05) sets the
 following thresholds: + for p<.10 and * for p<.05. Note that the
 thresholds must lie in the (0,1] interval and must be specified in
 descending order. To, for example, denote insignificant results, type
 starlevels(* 1 "" 0.05).</pre>
- **stardetach** specifies that a delimiter be placed between the statistics and the significance stars (i.e. that the stars are to be displayed in their own column).

Layout

- varwidth(#) specifies the number of characters used to display the names
 (labels) of regressors and statistics (i.e. varwidth specifies the width
 of the table's left stub). Long names (labels) are abbreviated (depending
 on the abbrev option) and short or empty cells are padded out with blanks
 to fit the width specified by the user. varwidth defaults to 0, which
 means that the names are not abbreviated and no white space is added.
 Specifying low values may cause misalignment.
- modelwidth(#) designates the number of characters used to display the results columns. If a non-zero modelwidth is specified, model names are abbreviated if necessary (depending on the abbrev option) and short or empty results cells are padded out with blanks. In contrast, modelwidth does not shorten or truncate the display of the results themselves (coefficients, t-statistics, summary statistics, etc.) although it may add blanks if needed. modelwidth defaults to 0, which means that the model names are not abbreviated and no white space is added. Specifying low values may cause misalignment.

The purpose of **modelwidth** is to be able to construct a fixed-format table and thus make the raw table more readable. Be aware, however, that the added blanks may cause problems with the conversion to a table in word processors or spreadsheets.

- abbrev specifies that long names and labels be abbreviated if a modelwidth()
 and/or a varwidth() is specified.
- unstack specifies that the individual equations from multiple-equation models
 (e.g. mlogit, reg3, heckman) be placed in separate columns. The default
 is to place the equations below one another in a single column. Summary
 statistics will be reported for each equation if unstack is specified and
 the estimation command is either reg3, sureg, or mvreg (see help reg3,
 help sureg, help mvreg).
- begin(string) specifies a string to be printed at the beginning of every table row. The default is an empty string. It is possible to use special functions such as _tab or _skip in begin(). For more information on using such functions, see the description of the functions in help <u>file</u>.
- delimiter(string) designates the delimiter used between the table columns.
 The default is a tab character. See the begin option above for further
 details.
- end(string) specifies a string to be printed at the end of every table row. The default is an empty string. See the begin option above for further details.
- dmarker(string) specifies the form of the decimal marker. The standard decimal symbol (a period or a comma, depending on the input provided to set dp; see help <u>format</u>) is replaced by string.
- msign(string) determines the form of the minus sign. The standard minus sign
 (-) is replaced by string.

- 1z specifies that the leading zero of fixed format numbers in the interval (-1,1) be printed. This is the default. Use nolz to advise estout to omit the leading zeros (that is, to print numbers like 0.021 or -0.33 as .021 and -.33).
- extracols(<u>numlist</u>) inserts empty table columns at the indicated positions.
 For example, extracols(1) adds an extra column between the left stub of
 the table and the first column.
- substitute(subst_list) specifies that the substitutions specified in subst_list be applied to the estimates table after it has been created. Specify subst_list as a list of substitution pairs, that is:

from to [from to ...]

For example, specify **substitute(_ _)** to replace the underscore character (as in **_cons** or F_p) with it's LaTeX equivalent **_**.

Labeling

title(string) may be used to specify a title for the table. The string is
 printed at the top of the table unless prehead(), posthead(), prefoot(),
 or postfoot() is specified. In the latter case, the variable @title can
 be used to insert the title.

legend adds a legend explaining the significance symbols and thresholds.

prehead(strlist), posthead(strlist), prefoot(strlist), and postfoot(strlist)
 may be used to define lists of text lines to appear before and after the
 table heading or the table footer. For example, the specification

. estout ..., prehead("\S DATE \S TIME" "")

would add a line containing the current date and time followed by an empty line before the table. Various substitution functions can be used as part of the text lines specified in *strlist*, including **(span** to print the total number of physical columns in the table (including the left stub that holds the variable names), **(M** to print the number of models included, **(discrete** to print the contents of the **discrete()** option, **(starlegend** to print a legend explaining the significance symbols, **(title** to print the contents of the **title()** option, and **(hline** to plot a horizontal "line" (series of dashes, by default; see the **hlinechar()** option). For example, a table heading to be used with LaTEX might be formatted as follows:

. estout ..., prehead(\begin{tabular}{l*{@M}{r}})

hlinechar(string) specifies the character(s) to be used in @hline. The
 default is hlinechar(-), resulting in a dashed line. To produce a solid
 line, specify hlinechar(`=char(151)') (Windows only; other systems may
 use other codes).

- **label** specifies that variable labels be displayed instead of variable names in the left stub of the table.
- varlabels(matchlist[, suboptions]) may be used to relabel the regressors from the models, where matchlist is

name label [name label ...]

A name is a parameter name (e.g. **price**) or a full name (e.g. **mean:price**) (abbreviation and wildcards not allowed). For example, specify **varlabels(_cons Constant)** to replace each occurrence of **_cons** with **Constant**. (Note that, in LaTeX, the underscore character produces an error unless it is specified as _. Thus, names such as **_cons** should always be changed if the estimates table is to be used with LaTeX. The **substitute()** may also be helpful; see the <u>Layout</u> options.) The *suboptions* are:

blist(matchlist) to assign specific prefixes to certain rows in the table body. Specify the matchlist as pairs of regressors and prefixes, that is:

name prefix [name prefix ...]

A name is a parameter name (e.g. **price**), an equation name followed by a colon (e.g. **mean:**), or a full name (e.g. **mean:price**) (abbreviation and wildcards not allowed). Note that equation names cannot be used if the **unstack** option is specified. The prefix will include the total number of physical columns in the table if the **@span** token is used in its definition.

elist(matchlist) to assign specific suffixes to certain rows in the table body (see the analogous blist() option above). This option may, for example, be useful for separating thematic blocks of variables by adding vertical space at the end of each block. A LaTeX example:

. estout ..., varlabels(,elist(price \addlinespace mpg \addlinespace))

(the macro **\addlinespace** is provided by the **booktabs** package in LaTeX)

label subopts, which are explained in their own section.

refcat(matchlist[, suboptions]) may be used to insert a row containing
information on the reference category of a categorical variable in the
model. matchlist is

name refcat [name refcat ...]

A name is a parameter name (e.g. **_Irep78_2**) (abbreviation and wildcards not allowed). For example, assume that you include the categorical variable **rep78** ("Repair Record 1978" from the auto dataset) in some of your models using **xi** (see help <u>xi</u>). Since **rep78** has five levels, 1 through 5, **xi** will create 4 dummy variables, **_Irep78_2** through **_Irep78_5**. You can now type

. estout ..., refcat(_Irep78_2 _Irep78_1)

to add a table row containing "_Irep78_1" in the left stub and "ref." in each column in which the _Irep78_2 dummy appears. The *suboptions* are:

- label(string) to specify the label that is printed in the table columns. The default is label(ref.)
- below to position the reference category row below the specified coefficient's row. The default is above. For example, if the 5th category of rep78 is used as reference category, i.e. if _Irep78_1 through _Irep78_4 are included in the models, you might want to type refcat(_Irep78_4 _Irep78_5, below).
- mlabels(strlist[, suboptions]) determines the model captions printed in the table heading. The default is to use the names of the stored estimation sets (or their titles, if the label option is specified and titles are available). The suboptions for use with mlabels are:
 - **depvars** to specify that the name (or label) of the (first) dependent variable of the model be used as model label.
 - numbers to cause the model labels to be numbered consecutively.

label subopts, which are explained in their own section.

- collabels(strlist[, label_subopts]) specifies labels for the columns within
 models or equations. The default is to compose a label from the names or
 labels of the statistics printed in the cells of that column. The
 label_subopts are explained in their own section below.
- eqlabels(strlist[, label_subopts]) labels the equations. The default is to
 use the equation names as stored by the estimation command, or to use the
 variable labels if the equation names correspond to individual variables
 and the label option is specified. The label_subopts are explained in
 their own section below. Note that eqlabels(, none) causes _cons to be
 replaced with the equation name or label, if _cons is the only parameter
 in an equation. This is useful, e.g., for tabulating ologit or oprobit
 results in Stata 9. Specify eqlabels("", none) to not replace cons.
- mgroups(strlist[, suboptions]) may be used to labels groups of (consecutive) models at the top of the table heading. The labels are placed in the first physical column of the output for the group of models to which they apply. The suboptions for use with mgroups are:

pattern(pattern) to establish how the models are to be grouped. pattern should be a list of zeros and ones, with ones indicating the start of a new group of models. For example,

```
. estout ..., mgroups("Group 1" "Group 2", pattern(1 0 0 1
0))
```

would group Models 1, 2, and 3 together and then groups Models 4 and 5 together as well. Note that the first group will always start with the first model regardless of whether the first token of *pattern* is a one or a zero.

- <u>label_subopts</u>, which are explained in their own section. In particular, the **span** suboption might be of interest here.
- numbers[(l r)] adds a row to the table header displaying consecutive model
 numbers. The default is to enclose the numbers in parentheses, i.e. (1),
 (2), etc. Alternatively, specify l and r to change the tokens on the
 left and right of each number. For example, numbers("" ")") would result
 in 1), 2), etc.

_ Output

replace permits estout to overwrite an existing file.

- **append** specifies that the output be appended to an existing file. It may be used even if the file does not yet exist.
- type specifies that the assembled estimates table be printed in the results window and the log file. This is the default. Use **notype** to suppress the display of the table.
- showtabs requests that tabs be displayed as <T>s in both the results window and the log file instead of in expanded form. This option does not affect how tabs are written to the text file specified by using.



style(style) specifies a "style" for the output table. <u>defaults(style)</u> is a synonym for style(style). A "style" is a named combination of options that is saved in an auxiliary file called estout_style.def. In addition, there are four internal styles called tab, fixed, tex, and html. Their particulars are:

settings		sty	les	
_	tab	fixed	tex	html
begin				
delimiter	_tab		&	
end			\\	
varwidth	0	12/20*	12/20*	12/20*
modelwidth	0	12	12	12
abbrev	off	on	off	off
			(* if]	abel is on)

The **tab** style is the default. See <u>Defaults files</u> in the <u>Remarks</u> section to make available your own style.

Note that explicitly specified options take precedence over settings provided by a style. For example, if you type

. estout, delimiter("") style(tab)

then the column delimiter will be set to empty string since the **delimiter()** option overwrites the default from the **tab** style. Similarly, specifying **noabbrev** will turn abbreviation off if using the **fixed** style.

label subopts

The following suboptions may be used within the **mgroups()**, **mlabels()**, **collabels()**, **eqlabels()**, **varlabels()**, and **stats(, labels())** options:

none suppresses the printing of the labels or drops the part of the table heading to which it applies.

prefix(string) specifies a common prefix to be added to each label.

suffix(string) specifies a common suffix to be added to each label.

- begin(strlist) specifies a prefix to be printed at the beginning of the part
 of the table to which it applies. If begin is specified in varlabels() or
 stats(,labels()), the prefix will be repeated for each regressor or
 summary statistic.
- end(strlist) specifies a suffix to be printed at the end of the part of the table to which it applies. If end is specified in varlabels() or stats(,labels()), the suffix will be repeated for each regressor or summary statistic.
- last specifies that the last occurrence of the end()-suffix in varlabels() or stats(,labels()) be printed. This is the default. Use nolast to suppress the last occurrence of the suffix.

span causes labels to span columns, i.e. extends the labels across several columns, if appropriate. This suboption is relevant only for the mgroups(), mlabels(), eqlabels(), and collabels() options. The @span string returns the number of spanned columns if it is included in the label, prefix, or suffix. A LaTeX example:

. estout ..., mlabels(, span prefix(\multicolumn{@span}{c}) suffix()))

erepeat(string) specifies a string that is repeated for each group of spanned columns at the very end of the row if the span suboption is specified. This suboption is relevant only for the mgroups(), mlabels(), eqlabels(), and collabels() options. If the @span string is included in string it will be replaced by the range of columns spanned. A LaTeX example:

. estout ..., mlabels(, span erepeat(\cline{@span}))

lhs(string) inserts string into the otherwise empty cell in the left stub of the row of the table heading to which it applies. This suboption is relevant only for the mgroups(), mlabels(), eqlabels(), and collabels() options.

Examples

Contents <u>Introduction</u> <u>Publication style table</u> <u>t-statistics for selected variables only</u> <u>Summary statistics only</u> <u>Table of descriptives</u> <u>Unstack multiple equations</u> <u>Marginal effects</u>

Please first read the <u>Introduction</u>. The other examples are more advanced and intended for users already familiar with the basic features of **estout**. Additional examples can be found in Jann (2005).

Introduction

The full syntax of **estout** is rather complex and is to be found above. However, consider the following basic syntax, which includes only the most important options:

estout [namelist] [using filename] [, cells(array) stats(scalarlist)
 style(style) more options]

where *namelist* is a list of the names of stored estimation sets (the name list can be entered as * to refer to all stored estimates). The **cells()** and **stats()** options determine the primary contents of the table. The **style()** option determines the basic formatting of the table.

<u>Basic usage</u>

The general procedure for using **estout** is to first store several models using the **estimates store** or the **esto** command and then apply **estout** to save and/or display a table of the estimates. By default, **estout** produces a plain, tab-separated table of the coefficients of the models indicated by the command:

. sysuse auto (1978 Automobile Data) . replace price = price / 1000 price was int now float (74 real changes made) . replace weight = weight / 1000 weight was int now float (74 real changes made) . regress price weight mpg (output omitted) . estimates store m1, title(Model 1) . generate for Xmpg = foreign * mpg . regress price weight mpg forXmpg foreign (output omitted) . estimates store m2, title(Model 2) . estout * using example.txt m1 m2 b b weight 1.746559 4.613589 -.0495122 .2631875 mpg -.3072165 forXmpg foreign 11.24033 _cons 1.946068 -14.44958

The table produced by the **estout** command looks messy in the Stata results window or the Stata log because the columns are tab-separated (note that tab characters are not preserved in the results window or the log). However, the stored **example.txt** would look tidy if it were opened, for example, in a spreadsheet program.

Choosing a style

To align the columns, fixed widths can be specified for the columns and tab characters can be removed. This is most easily done via the **style()** option, which provides a style called **fixed**:

. estout *, style(fixed)

	m1	m2
	b	b
weight	1.746559	4.613589
mpg	0495122	.2631875
forXmpg		3072165
foreign		11.24033
_cons	1.946068	-14.44958

Other predefined styles are **tab** (the default), **tex**, and **html**, but it is also possible to define one's own styles (see <u>Defaults files</u> in the <u>Remarks</u> section). The **tex** style, for example, modifies the output table for use with LaTeX's tabular environment:

. estout *, style(tex) varlabels(_cons _cons)

	&	m1&	m2\\
	&	b&	b/\
weight	&	1.746559&	4.613589\\
mpg	&	0495122&	.2631875\\
forXmpg	&	&	3072165\\
foreign	&	&	11.24033\\
\cons	&	1.946068&	-14.44958\\

Note that <u>cons</u> has been replaced by its LaTeX equivalent in the example above using the **varlabels()** option (the underscore character produces an error in LaTeX unless it is preceded by a backslash). For more information on the **varlabels()** option, see **estout**'s <u>Labeling</u> oprions.

The cells option

Use the **cells()** option to specify the parameter statistics to be tabulated and how they are to be arranged. The parameter statistics available are **b** (coefficients; the default), **se** (standard errors), **t** (t-/z-statistics), **p** (p-values), **ci** (confidence intervals; to display the lower and upper bounds in separate cells use **ci_l** and **ci_u**), as well as any additional parameter statistics included in the **e()**-returns for the models (see **estout**'s <u>Parameter</u> <u>Statistics</u> options). For example, **cells(b se)** results in the reporting of raw coefficients and standard errors:

. estout *, cells(b se) style(fixed)

	m1	m2
	b/se	b/se
weight	1.746559	4.613589
	.6413538	.7254961
mpg	0495122	.2631875
	.086156	.1107961
forXmpg		3072165
		.1085307
foreign		11.24033
		2.751681
_cons	1.946068	-14.44958
_	3.59705	4.42572

Multiple statistics are placed in separate rows beneath one another by default as in the example above. However, elements that are listed in quotes are placed beside one another. For example, specifying **cells("b se t p")** produces the following table:

. estout m2, cells("b se t p") style(fixed)

	m2			
	b	se	t	р
weight	4.613589	.7254961	6.359219	1.89e-08
mpg	.2631875	.1107961	2.375421	.0203122
forXmpg	3072165	.1085307	-2.830687	.0060799
foreign	11.24033	2.751681	4.084896	.0001171
_cons	-14.44958	4.42572	-3.26491	.0017061

The two approaches can be combined. For example, **cells("b p" se)** would produce a table with raw coefficients and standard errors beneath one another in the first column and p-values in the top row of the second column for each model.

Note that for each statistic named in the **cells()** option a set of suboptions may be specified in parentheses. For example, in social sciences it is common to report standard errors or t-statistics in parentheses beneath the coefficients and to indicate the significance of individual coefficients with stars. Furthermore, the results are rounded. Just such a table can be created using the following procedure:

```
. estout *, cells(b(star fmt(3)) t(par fmt(2))) style(fixed)
```

	ml	m2
	b/t	b/t
weight	1.747**	4.614***
	(2.72)	(6.36)
mpg	-0.050	0.263*
	(-0.57)	(2.38)
forXmpg		-0.307**
		(-2.83)
foreign		11.240***
		(4.08)
_cons	1.946	-14.450**
	(0.54)	(-3.26)

The **estout** default is to display * for p<.05, ** for p<.01, and *** for p<.001. However, note that the significance thresholds and symbols are fully customizable (see **estout**'s <u>Significance stars</u> options).

The stats option

Finally, use the **stats()** option to specify scalar statistics to be displayed in the last rows of each model's table. The available scalar statistics are **aic** (Akaike's information criterion), **bic** (Schwarz's information criterion), **rank** (the rank of **e(V)**, i.e. the number of free parameters in model), **p** (the p-value of the model), as well as any scalar contained in the **e()**-returns for the models (see **estout**'s <u>Summary statistics</u> options). For example, specify **stats(r2 bic N)** to add the R-squared, BIC, and the number of cases to the bottom of the table:

. estout *, stats(r2 bic N) style(fixed)

	m1	m2
	b	b
weight	1.746559	4.613589
mpg	0495122	.2631875
forXmpg		3072165
foreign		11.24033
_cons	1.946068	-14.44958
r2	.2933891	.5516277
bic	356.2918	331.2406
N	74	74

Publication style table

```
. label variable foreign "Foreign car type"
```

. label variable for Xmpg "Foreign * Mileage"

```
. estout *, cells(b(star fmt(%9.3f)) se(par))
> stats(r2_a N, fmt(%9.3f %9.0g) labels(R-squared))
> legend label collabels(, none)
> varlabels(_cons Constant) posthead("")
> prefoot("") postfoot("")
> varwidth(16) modelwidth(12) delimiter("")
```

	Model 1	Model 2
Weight (lbs.)	1.747**	4.614***
	(0.641)	(0.725)
Mileage (mpg)	-0.050	0.263*
	(0.086)	(0.111)
Foreign*Mileage		-0.307**
		(0.109)
Foreign car type		11.240***
		(2.752)
Constant	1.946	-14.450**
	(3.597)	(4.426)
R-squared	0.273	0.526
N	74	74

* p<0.05, ** p<0.01, *** p<0.001

t-statistics for selected variables only . estout *, cells(b(star) t(par keep(mpg))) > style(fixed) m2 m1 b/t b/t weight 1.746559** 4.613589*** -.0495122 .2631875* mpg (-.5746806) (2.375421) -.3072165** forXmpg 11.24033*** foreign 1.946068 -14.44958** cons Summary statistics only . estout *, cells(none) stats(r2 a bic N, star)

> style(fixed)

bic N	.2734846* 356.2918 74	** .52563 331.24	m2 351*** 406 74		
м	/=		/1		
Table of	descriptives				
. quietly o	generate x = uni	form()			
. quietly a	regress x price	weight mpg fo	oreign		
. estadd me	ean				
. estadd so	d, nobinary				
. estimates	s store m3				
 estout mi drop(con 	3, cells("mean s	d") stats(N)	mlabels(,none	2)	
> drop(_col	ns) style(lixed)	að			
price	mean 6.165257	2,949496			
weight	3.019459	.7771936			
mpg	21.2973	5.785503			
foreign	.2972973				
N	74				
N	74				
N]			
N JUnstack I	74 nultiple equatio	ns			
N Unstack r	74 multiple equatio	ns			
N Unstack r . sureg (pr > (mpg dist	74 multiple equatio rice foreign wei	ns			
N Unstack r . sureg (pr > (mpg disp (output om)	74 multiple equatio rice foreign wei pl = foreign wei itted)	ns ght length) ght)			
N Unstack r . sureg (pr > (mpg disp (output om:	74 multiple equatio rice foreign wei pl = foreign wei itted)	ns ght length) ght)			
N Unstack r . sureg (pr > (mpg disp (output om: . estimates	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4	ns ght length) ght)			
N Unstack r . sureg (pr > (mpg disp (output om: . estimates . estout ma	74 multiple equatio rice foreign wei ol = foreign wei itted) s store m4 4. cells(b t(par	ns ght length) ght)			
N Unstack r Sureg (pr > (mpg dis) (output om estimates . estout m4 > stats(r2	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f	ns ght length) ght))) unstack ixed)			
N Unstack r Sureg (pr > (mpg dis) (output om: . estimates . estout ma > stats(r2)	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f	ns ght length) ght))) unstack ixed)			
N Unstack r Sureg (pr > (mpg dis) (output om: . estimates . estout m4 > stats(r2	74 multiple equatio rice foreign wei ol = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price	ns ght length) ght))) unstack ixed)	displacement		
N Unstack r Sureg (pr > (mpg disp (output om: . estimates . estout ma > stats(r2	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t	ns ght length) ght))) unstack ixed) mpg b/t	displacement		
<pre>N Unstack r . sureg (pr > (mpg disp (output om: . estimates . estout ma > stats(r2 foreign</pre>	74 multiple equatio rice foreign wei ol = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526	ns ght length) ght))) unstack ixed) mpg b/t -1.650029	displacement b/t -25.6127		
<pre>N Unstack r . sureg (pr > (mpg disp (output om: . estimates . estout m4 > stats(r2 foreign</pre>	74 multiple equatio rice foreign wei ol = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891)	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555)	displacement b/t -25.6127 (-2.047999)		
<pre>N Unstack r . sureg (pr > (mpg disp (output om: . estimates . estout m4 > stats(r2 foreign weight</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886	displacement b/t -25.6127 (-2.047999) 96.75485		
<pre>N Unstack r . sureg (pr > (mpg disp (output om: . estimates . estout ma > stats(r2 foreign weight</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462 (6.182983)	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886 (-10.55641)	displacement b/t -25.6127 (-2.047999) 96.75485 (13.06594)		
<pre>N Unstack r Sureg (pr > (mpg disp (output om: estimates estout ma > stats(r2 foreign weight length</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462 (6.182983) 0882711 (2.202622)	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886 (-10.55641)	displacement b/t -25.6127 (-2.047999) 96.75485 (13.06594)		
<pre>N Unstack r Unstack r Sureg (pr > (mpg disp (output om: estimates estout max > stats(r2 foreign weight length cons</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462 (6.182983) 0882711 (-2.809689) 4.506212	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886 (-10.55641) 41.6797	displacement b/t -25.6127 (-2.047999) 96.75485 (13.06594) -87.23547		
<pre>N Unstack r . sureg (pr > (mpg disp (output om: estimates . estout m4 > stats(r2 foreign weight length _cons</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462 (6.182983) 0882711 (-2.809689) 4.506212 (1.255897)	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886 (-10.55641) 41.6797 (19.64914)	displacement b/t -25.6127 (-2.047999) 96.75485 (13.06594) -87.23547 (-3.46585)		
<pre>N Unstack r . sureg (pr > (mpg disp (output om: estimates . estout m4 > stats(r2 foreign weight length _cons r2</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462 (6.182983) 0882711 (-2.809689) 4.506212 (1.255897) .548808	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886 (-10.55641) 41.6797 (19.64914) .6627029	displacement b/t -25.6127 (-2.047999) 96.75485 (13.06594) -87.23547 (-3.46585) .8115213		
<pre>N Unstack r Unstack r Sureg (pr > (mpg disp (output om: estimates estout mates stats(r2 foreign weight length _cons r2 chi2</pre>	74 multiple equatio rice foreign wei pl = foreign wei itted) s store m4 4, cells(b t(par chi2 p) style(f m4 price b/t 3.57526 (5.749891) 5.691462 (6.182983) 0882711 (-2.809689) 4.506212 (1.255897) .548808 89.73586	ns ght length) ght))) unstack ixed) mpg b/t -1.650029 (-1.565555) -6.587886 (-10.55641) 41.6797 (19.64914) .6627029 145.3912	displacement b/t -25.6127 (-2.047999) 96.75485 (13.06594) -87.23547 (-3.46585) .8115213 318.6174		

```
Marginal effects
. generate record = 0
. replace record = 1 if rep > 3
```

(34 real changes made)

. logit foreign mpg record (output omitted)

. estimates store raw

. mfx
(output omitted)

. estimates store mfx

```
. estout raw mfx, cells("b Xmfx_X(pattern(0 1))" se(par))
> margin legend style(fixed)
```

	raw	m	Ex				
	b/se	b/s	se	Xmfx_X			
mpg	.1079219	.018452	28	21.2973			
	(.0565077)	(.0101674	1)				
record (d)	2.435068	.427170	07	.4594595			
	(.7128444)	(.1043178	3)				
_cons	-4.689347						
	(1.326547)						
(d) marginals	for discrete	change of	dummy	variable	from	0	to

1

<u>Remarks</u>

Contents

Numerical formats Special characters Using @-variables Defaults files

- Numerical formats

Numerical display formats may be specified in **estout** as follows:

 Official Stata's display formats: You may specify formats, such as %9.0g or %8.2f. See help <u>format</u> for a list of available formats.

- Fixed format: You may specify an integer value such as 0, 1, 2, etc. to request a display format with a fixed number of decimal places. For example, cells(t(fmt(3))) would display t-statistics with three decimal places.
- 3. Automatic format: You may specify **a1**, **a2**, ..., or **a9** to cause **esta** to choose a reasonable display format for each number depending on the number's value. The # in **a**# determines the minimum precision according to the following rules:
 - o Absolute numbers smaller than 1 are displayed with # significant decimal places (i.e. with # decimal places ignoring any leading zeros after the decimal point). For example, 0.00123456 is displayed as 0.00123 if the format is a3.
 - o Absolute numbers greater than 1 are displayed with as many digits required to retain at least one decimal place and are displayed with a minimum of (# + 1) digits. For example, if the format is a3, 1.23456 is displayed as 1.235, 12.3456 is displayed as 12.35, and 1234.56 is displayed as 1234.6.
 - o In any case, integers are displayed with zero decimal places, and very large or very small absolute numbers are displayed in exponential format.

Special characters

The \ and \$ characters and quotation marks have special meanings in Stata. You should therefore consider the following instructions if you, for example, intend to specify akward delimiters or specify special characters in labels:

- Strings containing unmatched quotes should be enclosed in compound double quotes (thus, **delimiter(**`"""') results in columns delimited by ", while **delimiter(**") produces an error).
- The backslash character is used to delay macro expansion in Stata. Specifying \\ just results in the printing of \. To get a double backslash (the **\newline** command in TeX), type \\\.
- The dollar sign is used for global macro expansion in Stata. Thus, **\$x** would result in the display of the contents of global macro **x** (or nothing, if the macro is empty). Therefore, use \\$ to produce \$ in the output.

Stata's char() function may also be used to specify odd characters (see help strfun). In particular, "`=char(9)'" results in a tab character and "`=char(13)'" results in a carriage return. For example, delimiter(" `=char(9)' ") specifies that a tab character with a leading and a trailing blank be used as delimiter. *Tip:* It is sometimes very useful to set the format of all cells in a spreadsheet to "Text" before pasting the estimates table. This prevents the spreadsheet program from trying to interpret the cells and ensures that the contents of the table remain unchanged.

---- Using @-variables

estout features several variables that can be used within string specifications. The following list provides an overview of these variables:

@span

Returns the value of a count variable for the total number of physical columns of the table if used in the labels in the **blist()** and **elist()** suboptions of **varlabels()**, in the text specified in **prehead()**, **posthead()**, **prefoot()**, or **postfoot()**, or in the text specified in the **begin()** or **end()** label suboptions.

@span

Returns the number of spanned columns if used in the text specified in the **prefix()** and **suffix()** suboptions of **mgroups()**, **mlabels()**, **eqlabels()**, or **collabels()**, or in the labels specified in these options.

@span

Returns the range of spanned columns (e.g. 2-4 if columns 2, 3 and 4 are spanned) if used in the text specified in the **erepeat()** suboption of **mgroups()**, **mlabels()**, **eqlabels()**, or **collabels()**.

@M

Returns the number of models in the table if used in the text specified in prehead(), posthead(), prefoot(), or postfoot().

@Е

Returns the total number columns containing separate equations if used in the text specified in **prehead()**, **posthead()**, **prefoot()**, or **postfoot()**.

@title

Returns the title specified with the **title()** option if used in the text specified in **prehead()**, **posthead()**, **prefoot()**, or **postfoot()**.

@discrete

Returns the explanations provided by the **discrete()** option (provided that the **margin** option is activated) if used in the text specified in **prehead()**, **posthead()**, **prefoot()**, or **postfoot()**.

@starlegend

Returns a legend explaining the significance symbols if used in the text specified in **prehead()**, **posthead()**, **or postfoot()**.

@hline Returns a horizontal line (series of dashes, by default; see the hlinechar() option) if used in the text specified in prehead(), posthead(), prefoot(), or postfoot(). Note that the length of the line depends on varwidth() and modelwidth().

Defaults files

Creating new defaults files:

To make available an own set of default options, proceed as follows:

- 1. Download "estout_mystyle.def" from the SSC Archive (click <u>here</u> to copy the file from SSC and store it in the working directory).
- Open "estout_mystyle.def" in a text editor and make the desired modifications (click <u>here</u> to open "estout_mystyle.def" in Stata's Do-File Editor).
- 3. Save the file in the current directory or elsewhere in the ado-file path as **estout**_newstyle.def (see help sysdir).

To use the new options set in estout, then type:

. estout ... , style(newstyle)

Defaults files syntax:

estout has two main types of options, which are treated differentially in defaults files. On the one hand, there are simple on/off options without arguments, like **legend** or **showtabs**. To turn such an option on, enter the option followed by the options name as an argument, i.e. add the line

option option

to the defaults file. For example,

legend legend

specifies that a legend be printed in the table footer. Otherwise, if you want to turn the option of, just delete or comment out the line that contains it (or specify *option* without an argument).

To temporarily turn off an option that has been activated in a defaults file, specify **no**option in the command line (do not, however, use **no**option in defaults files). For example, if the legend has been turned on in the defaults file, but you want to suppress it in a specific call of **estout**, type

. estout ..., nolegend

On the other hand, there are options that take arguments, such as **prehead**(*args*), **delimiter**(*args*), or **stats**(*args*, ...). Such options are specified as

option args

in the defaults file (where *args* must not include suboptions; see below). Specifying an option in the command line overwrites the settings from the defaults file. However, note that a **no** form, which exists for the first options type, is not available here.

Last but not least, there are two options that reflect a combination of the first and second types: **eform**[(args)] and **margin**[(args)]. These options can be specified as either

option option

or

option args

in the defaults file; the **no** form is allowed.

Many **estout** options have suboptions, i.e., an option might take the form option(..., suboption) or option(..., suboption(args)). In the defaults file, the suboptions cannot be included in the definition of a higher-level option. Instead, they must be specified in their own lines, as either

optionsuboption suboption

or

optionsuboption args

In the case of a two-level nesting of options, the name used to refer to the suboption is a concatenation of the option's name and the suboption's name, i.e. "optionsuboption"="option"+"suboption". For example, the **labels()** suboption of the **stats()** option would be set by the term **statslabels**. Analogously, the three level nesting in the **stats()** option yields suboption names composed of three names. For instance, the suboption called by the command

. estout ..., stats(..., labels(..., prefix(args)))

would be referred to as

statslabelsprefix args

in the defaults file. The **cells()** option represents an exception to this rule. It may be defined in the defaults file using only a plain array of cells elements without suboptions, e.g.

cells "b se" p

However, the suboptions of the cells elements may be referred to as *el suboption*, for example

```
b star star
```

or

se par []

Comments in defaults files:

Be aware that the support for comments in defaults files is limited. In particular, the /* and */ comment indicators cannot be used. The other comment indicators work (more or less) as usual, that is:

- o Empty lines and lines beginning with * (with or without preceding blanks)
 will be ignored.
- o // preceded by one or more blanks indicates that the rest of the line should be ignored. Lines beginning with // (with or without preceding blanks) will be ignored.
- o /// preceded by one or more blanks indicates that the rest of the line should be ignored and the part of the line preceding it should be added to the next line. In other words, /// can be used to split commands into two or more lines of code.

References

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<u>Also see</u>

Manual:	[R] estimates
SJ:	SJ5-3 st0085 (Jann 2005)
Online:	help for <u>estimates</u> , <u>estcom</u> , <u>estimates table</u> , <u>ereturn</u> , <u>format</u> , <u>file</u> , <u>mfx</u> , <u>esto</u> , <u>esta</u> , <u>estadd</u>