

# Package ‘stargazer’

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**Type** Package

**Title** Well-Formatted Regression and Summary Statistics Tables

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## Description

Produces LaTeX code, HTML/CSS code and ASCII text for well-formatted tables that hold regression analysis results from several models side-by-side, as well as summary statistics.

**License** GPL (>= 2)

**Imports** stats, utils

**Enhances** AER, betareg, brglm, censReg, dynlm, eha, erer, ergm, fGarch, gee, glmx, gmm, lfe, lme4, lmtest, MASS, mlogit, mgcv, mlogit, mnlogit, nlme, nnet, ordinal, plm, pscl, quantreg, rms, relevent, robustbase, sampleSelection, spdep, survey, survival, Zelig

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stargazer	<i>stargazer</i>
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### Description

The `stargazer` command produces LaTeX code, HTML code and ASCII text for well-formatted tables that hold regression analysis results from several models side-by-side. It can also output summary statistics and data frame content. `stargazer` supports a large number model objects from a variety of packages. Please see [stargazer models](#).

### Usage

```
stargazer( ...,
  type = "latex", title = "", style = "default",
  summary = NULL, out = NULL, out.header = FALSE,
  column.labels = NULL, column.separate = NULL,
  covariate.labels = NULL, dep.var.caption = NULL,
  dep.var.labels = NULL, dep.var.labels.include = TRUE,
  align = FALSE,
  coef = NULL, se = NULL, t = NULL, p = NULL,
  t.auto = TRUE, p.auto = TRUE,
  ci = FALSE, ci.custom = NULL,
  ci.level = 0.95, ci.separator = NULL,
  add.lines = NULL,
  apply.coef = NULL, apply.se = NULL,
  apply.t = NULL, apply.p = NULL, apply.ci = NULL,
  colnames = NULL,
  column.sep.width = "5pt",
  decimal.mark = NULL, df = TRUE,
  digit.separate = NULL, digit.separator = NULL,
  digits = NULL, digits.extra = NULL, flip = FALSE,
  float = TRUE, float.env="table",
  font.size = NULL, header = TRUE,
  initial.zero = NULL,
  intercept.bottom = TRUE, intercept.top = FALSE,
  keep = NULL, keep.stat = NULL,
  label = "", model.names = NULL,
  model.numbers = NULL, multicolumn = TRUE,
  no.space = NULL,
  notes = NULL, notes.align = NULL,
  notes.append = TRUE, notes.label = NULL,
  object.names = FALSE,
  omit = NULL, omit.labels = NULL,
  omit.stat = NULL, omit.summary.stat = NULL,
  omit.table.layout = NULL,
  omit.yes.no = c("Yes", "No"),
```

```

order = NULL, ord.intercepts = FALSE,
perl = FALSE, report = NULL, rownames = NULL,
rq.se = "nid", selection.equation = FALSE,
single.row = FALSE,
star.char = NULL, star.cutoffs = NULL,
suppress.errors = FALSE,
table.layout = NULL, table.placement = "!htbp",
zero.component = FALSE,
summary.logical = TRUE, summary.stat = NULL,
nobs = TRUE, mean.sd = TRUE, min.max = TRUE,
median = FALSE, iqr = FALSE )

```

## Arguments

...	one or more model objects (for regression analysis tables) or data frames/vectors/matrices (for summary statistics, or direct output of content). They can also be included as lists (or even lists within lists).
type	a character vector that specifies what type of output the command should produce. The possible values are "latex" (default) for LaTeX code, "html" for HTML/CSS code, "text" for ASCII text output.
title	a character vector with titles for the tables.
style	a character string that specifies what style, typically designed to resemble an existing academic journal, should be used in producing the tables. This argument is not case-sensitive. See <a href="#">list of supported styles</a> .
summary	a logical value indicating whether the package should output a summary statistics table when given a data frame. If FALSE, the package will instead output the contents of the data frame.
out	a character vector that contains the path(s) of output files. Depending on the file extension (.tex, .txt, .htm or .html), either a LaTeX/HTML source file or an ASCII text output file will be produced. For any other file extension, the value of the type argument will determine the type of output file.
out.header	a logical value that indicates whether the LaTeX or HTML file output should contain a code header (if TRUE) or just the chunk of code that creates the output (if FALSE).
column.labels	a character vector of labels for columns in regression tables. Their layout, in terms of the number of columns associated with each label, is given by the argument column.separate.
column.separate	a numeric vector that specifies how column.labels should be laid out across regression table columns. A value of c(2, 1, 3), for instance, will apply the first label to the two first columns, the second label to the third column, and the third label will apply to the following three columns (i.e., columns number four, five and six). If the argument's value is NULL or the regression table contains more columns than are referred to in column.separate, a value of 1 is assumed for each "excess" column label.

<code>covariate.labels</code>	a character vector of labels for covariates in regression tables. A value of NA for any element means that <code>stargazer</code> will print the corresponding variable name. In the default case of NULL, variable names are printed.
<code>dep.var.caption</code>	a character vector that specifies the caption to appear above dependent variable labels. A value of NULL denotes the default caption for the chosen style. An empty string (i.e., <code>""</code> ) will lead <code>stargazer</code> to omit the caption.
<code>dep.var.labels</code>	a character vector of labels for the dependent variables in regression tables. A value of NA for any element means that <code>stargazer</code> will print the corresponding variable name. In the default case of NULL, variable names are printed.
<code>dep.var.labels.include</code>	a logical value that toggles whether dependent variable labels will be included in the regression table.
<code>align</code>	a logical value indicating whether numeric values in the same column should be aligned at the decimal mark in LaTeX output. Requires <code>\usepackage{dcolumn}</code> in LaTeX preamble.
<code>coef</code>	a list of numeric vectors that will replace the default coefficient values for each model. Element names will be used to match coefficients to individual covariates, and should therefore match covariate names. A NULL vector indicates that, for a given model, the default set of coefficients should be used. By contrast, an NA vector means that all of the model's coefficients should be left blank.
<code>se</code>	a list of numeric vectors that will replace the default coefficient values for each model. Behaves exactly like the argument <code>coef</code> .
<code>t</code>	a list of numeric vectors that will replace the default test statistics (e.g., t-scores, or z-scores) for each model. Like <code>coef</code> and <code>se</code> , test statistics are matched to covariates by their element names.
<code>p</code>	a list of numeric vectors that will replace the default p-values for each model. Matched by element names. These will form the basis of decisions about significance stars.
<code>t.auto</code>	a logical value that indicates whether <code>stargazer</code> should calculate the test statistics (i.e., the z-scores) automatically if coefficients or standard errors are supplied by the user (from arguments <code>coef</code> and <code>se</code> ) or modified by a function (from arguments <code>apply.coef</code> or <code>apply.se</code> ). If FALSE, the package will use model's default values if <code>t</code> is NULL.
<code>p.auto</code>	a logical value that indicates whether <code>stargazer</code> should calculate the p-values, using the standard normal distribution, if coefficients or standard errors are supplied by the user (from arguments <code>coef</code> and <code>se</code> ) or modified by a function (from arguments <code>apply.coef</code> or <code>apply.se</code> ). If FALSE, the package will use model's default values if <code>p</code> is NULL.
<code>ci</code>	a logical vector that indicates, for each column, whether <code>stargazer</code> should, in regression tables, replace standard errors by confidence intervals. If the value is NA or unspecified, then the value from the last preceding specified column is used.

<code>ci.custom</code>	a list of two-column numeric matrices that will replace the default confidence intervals for each model. The first and second columns represent the lower and the upper bounds, respectively. Matched by element names.
<code>ci.level</code>	a numeric vector that specifies, for each column, the confidence level to be used in regression tables when argument <code>ci</code> is set to <code>TRUE</code> . By default, <code>stargazer</code> will report 95 percent confidence intervals. If the value is <code>NA</code> or unspecified, then the value from the last preceding specified column is used.
<code>ci.separator</code>	a character string that will serve as the separator between the lower and upper bounds of reported confidence intervals.
<code>add.lines</code>	a list of vectors (one vector per line) containing additional lines to be included in the table. Each element of the listed vectors will be put into a separate column.
<code>apply.coef</code>	a function that will be applied to the coefficients.
<code>apply.se</code>	a function that will be applied to the standard errors.
<code>apply.t</code>	a function that will be applied to the test statistics.
<code>apply.p</code>	a function that will be applied to the p-values.
<code>apply.ci</code>	a function that will be applied to the lower and upper bounds of the confidence intervals.
<code>colnames</code>	a logical value that toggles column names on or off when printing data frames, vectors or matrices.
<code>column.sep.width</code>	a character string that specifies, in LaTeX code, the width of the space that separates columns in LaTeX tables. The default value is <code>"5pt"</code> .
<code>decimal.mark</code>	a character string that will serve as the decimal mark. For instance, the string <code>","</code> will represent decimal commas, while <code>."</code> means tables will use decimal points.
<code>df</code>	a logical value that indicates whether the degrees of freedom of model statistics should be reported.
<code>digit.separate</code>	a numeric vector that indicates where digit separators should be placed. The first element of the vector indicates the number of digits (counted from the decimal mark to the left) that will be separated. The second element indicates the number of digits that will be separated from that 'first' separator, and so on. A value of 3 corresponds to a thousands separator, while a value of 0 indicates no separation. Alternatively, <code>digit.separate</code> can be one of the following character strings: <code>"lakh"</code> (equivalent to <code>c(4,3)</code> ), <code>"china"</code> or <code>"japan"</code> (both equivalent to a value of 4).
<code>digit.separator</code>	a character string that will serve as the digit (e.g., thousands) separator. Commonly used strings include <code>","</code> for a comma separator, <code>" "</code> for a single space separator, and <code>""</code> for no separation.
<code>digits</code>	an integer that indicates how many decimal places should be used. A value of <code>NA</code> indicates that no rounding should be done at all, and that all available decimal places should be reported.
<code>digits.extra</code>	an integer indicating the maximum number of additional decimal places to be used if a number, rounded to <code>digits</code> decimal places, is equal to zero.

<code>flip</code>	a logical value that flips the vertical and horizontal axes when printing summary statistic tables or vector, matrix and data frame content.
<code>float</code>	a logical value that indicates whether the resulting table will be a floating table (set off, for instance, by <code>\begin{table}</code> and <code>\end{table}</code> ).
<code>float.env</code>	a character string that specifies the floating environment of the resulting LaTeX table (when argument <code>float</code> is set to TRUE). Possible values are "table" (default), "table*" and "sidewaystable" (requires <code>\usepackage{dcolumn}</code> in LaTeX preamble).
<code>font.size</code>	a character string that specifies the font size used in the table. The font can be one of the following: "tiny", "scriptsize", "footnotesize", "small", "normalsize", "large", "Large", "LARGE", "huge", "Huge". If NULL (default), no particular font is imposed.
<code>header</code>	a logical value indicating whether a header (containing the name and version of the package, the author's name and contact information, and the date and time of table creation) should appear in comments at the beginning of the LaTeX code.
<code>initial.zero</code>	a logical value indicating whether an initial zero should be printed before the decimal mark if a number is between 0 and 1.
<code>intercept.bottom</code>	a logical value indicating whether the intercept (or constant) coefficients should be on the bottom of the table.
<code>intercept.top</code>	a logical value indicating whether the intercept (or constant) coefficients should be on the top of the table.
<code>keep</code>	a vector of regular expressions that specifies which of the explanatory variables should be kept in the table. Alternatively, this argument can be a numeric vector whose elements indicate which variables (from top to bottom, or left to right) should be kept. The default value of NULL means that all variables will be kept.
<code>keep.stat</code>	a character vector that specifies which model statistics should be kept in the regression table output. For instance <code>keep.stat = c("n", "ll")</code> will produce a table that only includes statistics for the number of observations and log likelihood. See the <a href="#">list of statistic codes</a> . This argument is not case-sensitive.
<code>label</code>	a character string containing the <code>\label{}</code> TeX markers for the tables.
<code>model.names</code>	a logical value indicating whether model names (e.g., "OLS" or "probit") should be included in the table.
<code>model.numbers</code>	a logical value indicating whether models should be numbered. No number is used whenever a regression table includes only one model.
<code>multicolumn</code>	a logical value indicating whether dependent variables and model names (e.g., "OLS" or "probit") should be reported across several columns if they remain identical.
<code>no.space</code>	a logical value indicating whether all empty lines should be removed from the table.
<code>notes</code>	a character vector containing notes to be included below the table. The character strings can include special substrings that will be replaced by the corresponding cutoffs for statistical significance 'stars': <code>[*]</code> , <code>[**]</code> , and <code>[***]</code> will be replaced by the cutoffs, in percentage terms, for one, two and three 'stars,' respectively

	(e.g., 10, 5, and 1). Similarly, <code>[0.*]</code> , <code>[0.**]</code> and <code>[0.***]</code> will be replaced by the numeric value of cutoffs for one, two and three 'stars' (e.g., 0.1, 0.05, and 0.01). <code>[.*]</code> , <code>[.**]</code> and <code>[.***]</code> will omit the leading zeros (e.g., .1, .05, .01).
<code>notes.align</code>	a character string that specifies how notes should be aligned under the table. One of three strings can be used: "l" for left alignment, "r" for right alignment, and "c" for centering. This argument is not case-sensitive.
<code>notes.append</code>	a logical value that indicates whether notes should be appended to the standard note(s) associated with the table's style (typically an explanation of significance cutoffs). If the argument's value is set to FALSE, the character strings provided in notes will replace any existing/default notes.
<code>notes.label</code>	a character string containing a label for the notes section of the table.
<code>object.names</code>	a logical value indicating whether object names should be included in the table.
<code>omit</code>	a vector of regular expressions that specifies which of the explanatory variables should be omitted from presentation in the table. Alternatively, this argument can be a numeric vector whose elements indicate which variables (from top to bottom, or left to right) should be omitted. This argument might be used, for instance, to exclude fixed effects dummies from being presented. The default value of NULL means that no variables will be excluded.
<code>omit.labels</code>	a character vector of labels that correspond to each of the regular expressions in <code>omit</code> , and that will be used in a sub-table that indicates whether variables have been omitted from a given model. <code>omit</code> and <code>omit.labels</code> must be equal in length.
<code>omit.stat</code>	a character vector that specifies which model statistics should be omitted from regression table output. For instance <code>omit.stat = c("ll", "rsq")</code> will omit the log-likelihood and the R-squared statistics. See the <a href="#">list of statistic codes</a> . This argument is not case-sensitive.
<code>omit.summary.stat</code>	a character vector that specifies which summary statistics should be omitted from summary statistics table output. See the <a href="#">list of summary statistic codes</a> . This argument is not case-sensitive.
<code>omit.table.layout</code>	a character string that specifies which parts of the table should be omitted from the output. Each letter in the string indicates a particular part of the table, as specified by the <a href="#">table layout characters</a> . For instance, <code>omit.table.layout = "sn"</code> will omit the model statistics and notes.
<code>omit.yes.no</code>	a character vector of length 2 that contains the 'yes' and 'no' strings to indicate whether, in any specific model, variables were omitted from the table, as specified by "omit".
<code>order</code>	a vector of regular expressions (or of numerical indexes) that indicates the order in which variables will appear in the output.
<code>ord.intercepts</code>	a logical value indicating whether intercepts for models with ordered dependent variables (such as ordered probit, or ordered logit) are included in the table.
<code>perl</code>	a logical value indicating whether perl-compatible regular expressions should be used. If FALSE, the package will assume the default extended regular expressions.

<code>report</code>	a character string containing only elements of "v", "c", "s", "t", "p", "*" that determines whether, and in which order, variable names ("v"), coefficients ("c"), standard errors/confidence intervals ("s"), test statistics ("t") and p-values ("p") should be reported in regression tables. If one of the aforementioned letters is followed by an asterisk ("*"), significance stars will be reported next to the corresponding statistic.
<code>rownames</code>	a logical value that toggles row names on or off when printing data frames, vectors or matrices.
<code>rq.se</code>	a character string that specifies the method used to compute standard errors for rq (quantile regression) objects. Possible values are "iid", "nid", "ker" and "boot".
<code>single.row</code>	a logical value that indicates whether regression and standard errors (or confidence intervals) should be reported on the same row. For convenience in formatting the resulting table, argument <code>no.space</code> is automatically set to TRUE when <code>single.row</code> is TRUE.
<code>selection.equation</code>	a logical value that indicates whether the selection equation (when argument is set to TRUE) or the outcome equation (default) will be reported for <code>heckit</code> and selection models from the package <code>sampleSelection</code> .
<code>star.char</code>	a character string to be used as the 'star' to denote statistical significance.
<code>star.cutoffs</code>	a numeric vector that indicates the statistical significance cutoffs for the statistical significance 'stars.' For elements with NA values, the corresponding 'star' will not be used.
<code>suppress.errors</code>	a logical value that indicates whether <code>stargazer</code> should suppress the output of its error messages.
<code>table.layout</code>	a character string that specifies which parts of the table should be included in the output, in the order provided by the user. Each letter in the string indicates a particular part of the table, as specified by the <a href="#">table layout characters</a> . For instance, <code>table.layout = "#tn"</code> will report the model numbers, coefficient table and notes only.
<code>table.placement</code>	a character string containing only elements of "h", "t", "b", "p", "!", "H" that determines the table placement in its LaTeX floating environment.
<code>zero.component</code>	a logical value indicating whether to report coefficients for the zero component of <code>zeroinfl</code> and <code>hurdle</code> estimation results. If FALSE, the count component is displayed.
<code>summary.logical</code>	a logical value indicating whether logical variables should be reported in summary statistics table. If so, they will be treated as if they had values of 0 (corresponding to FALSE) and 1 (TRUE).
<code>summary.stat</code>	a character vector that specifies which summary statistics should be included in the summary statistics table output. See the <a href="#">list of summary statistic codes</a> . This argument is not case-sensitive.
<code>nobs</code>	a logical value that toggles whether the number of observations (N) for each variable is shown in summary statistics tables.

<code>mean.sd</code>	a logical value that toggles whether variable means and standard deviations are shown in summary statistics tables.
<code>min.max</code>	a logical value that toggles whether variable minima and maxima are shown in summary statistics tables.
<code>median</code>	a logical value that toggles whether variable medians are shown in summary statistics tables.
<code>iqr</code>	a logical value that toggles whether the 25th and 75th percentiles for each variable are shown in summary statistics tables. ('iqr' stands for interquartile range.)

### Details

Arguments with a value of `NULL` will use the default settings of the requested style.

### Value

`stargazer` uses `cat()` to output LaTeX/HTML code or ASCII text for the table. To allow for further processing of this output, `stargazer` also returns the same output invisibly as a character vector. You can include the produced tables in your paper by inserting `stargazer` LaTeX output into your publication's TeX source. Alternatively, you can use the `out` argument to save the output in a `.tex` or `.txt` file.

To include `stargazer` tables in Microsoft Word documents (e.g., `.doc` or `.docx`), please follow the following procedure: Use the `out` argument to save output into an `.htm` or `.html` file. Open the resulting file in your web browser. Copy and paste the table from the web browser to your Microsoft Word document.

### Acknowledgments and New Features

I would like to thank everyone who has tested this package, or provided useful comments and suggestions. Please see [stargazer package acknowledgments](#).

See [stargazer news](#) for a list of new models and features in each release of `stargazer`.

### Please cite as:

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### Examples

```
## create summary statistics table for 'attitude' data frame
stargazer(attitude)
```

```

## list the content of the data frame 'attitude'
stargazer(attitude, summary=FALSE)

## 2 OLS models
linear.1 <- lm(rating ~ complaints + privileges + learning
              + raises + critical, data=attitude)

linear.2 <- lm(rating ~ complaints + privileges + learning, data=attitude)

## create an indicator dependent variable, and run a probit model

attitude$high.rating <- (attitude$rating > 70)
probit.model <- glm(high.rating ~ learning + critical + advance, data=attitude,
                   family = binomial(link = "probit"))

stargazer(linear.1, linear.2, probit.model, title="Regression Results")

## report ASCII text for a table with 90 percent confidence
## intervals reported on the same row as coefficients
## and omitting F statistics and the residual standard error

stargazer(linear.1, linear.2, probit.model, type="text",
          title="Regression Results", single.row=TRUE,
          ci=TRUE, ci.level=0.9, omit.stat=c("f", "ser"))

### re-order the models and only keep explanatory
### variables that contain "complaints", "learning",
### "raises" and "critical"; report these with standard
### errors, and put "learning" and "raises" before
### the other explanatory variables; of the summary
### statistics, only keep the number of observations

stargazer(probit.model, linear.1, linear.2, type="text",
          keep=c("complaints","learning","raises","critical"),
          keep.stat="n", order=c("learning", "raises"))

### apply a function to the coefficients and standard errors
### that will multiply them by ten; you can think of this
### as a change in units

multiply.by.10 <- function(x) (x * 10)

stargazer(probit.model, linear.1, linear.2,
          apply.coef=multiply.by.10, apply.se=multiply.by.10)

### print out HTML code for a correlation matrix

correlation.matrix <- cor(attitude)
stargazer(correlation.matrix, type="html")

```

---

*stargazer\_acknowledge Acknowledgments*

---

**Description**

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James Rising, Columbia University, USA  
James Ryans, University of California-Berkeley, USA  
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Jan Zilinsky, University of Chicago, USA  
Steffen Zittlau, University of Mannheim, Germany

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stargazer\_models      *stargazer: list of supported objects*

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## Description

This page summarizes the models that stargazer supports. Please note that I am always looking for comments and suggestions. Do not hesitate to contact me at mhlavac [at] alumni.princeton.edu.

## Supported objects

The package name is indicated in bold and is followed by a list of functions/object types.

### **AER:**

- ivreg  
- tobit

### **betareg:**

- betareg

### **brglm:**

- brglm

### **censReg:**

- censReg

### **dynlm:**

- dynlm

### **eha:**

- aftreg  
- coxreg  
- mlreg  
- phreg

- weibreg

**erer:**

- maBina

**ergm:**

- ergm

**fGarch:**

- garchFit

**gee:**

- gee

**glmx:**

- hetglm

**gmm:**

- gmm

**lfe:**

- felm

**lme4:**

- glmer

- lmer

- nlmer

**lmtest:**

- coeftest

**MASS:**

- polr

- rlm

- survreg

**mclogit:**

- mclogit

**mgev:**

- gam

**mlogit:**

- mlogit

**mnlogit:**

- mnlogit

**nlme:**

- gls
- lme
- nlme

**nnet:**

- multinom

**ordinal:**

- clm

**plm:**

- pgmm
- plm
- pmg

**pscl:**

- hurdle
- zeroinfl

**rms:**

- bj
- cph
- Glm
- Gls
- lrm
- ols
- psm
- Rq

**relevent:**

- rem.dyad

**rq:**

- quantreg

**robustbase:**

- glmrob
- lmrob

**sampleSelection:**

- binaryChoice
- heckit
- probit
- selection

**spdep:**

- errorsarlm

- largarlm

**stats:**

- arima
- glm
- lm

**survey:**

- svyglm

**survival:**

- coxph
- clogit
- survreg

**Zelig:**

- the implementation of the above models
- relogit
- cloglog.net
- gamma.net
- probit.net
- logit.net

---

stargazer\_news

*What's new?*

---

**Description**

This page summarizes the models, features, and bug fixes that were introduced in each release of stargazer. Please note that I am always looking for comments and suggestions. Do not hesitate to contact me at mhlavac [at] alumni.princeton.edu.

**What's new?**

v. 5.2.2:

- very minor update: removed instances in code where if/while statement is used with a condition of length greater than one

v. 5.2.1:

- very minor update: updated author contact information

v. 5.2:

- New models:
  - arima (stats)
  - censReg (censReg)
  - garchFit (fGarch)
  - glmrob (robustbase)
  - lme (nlme)
  - nlme (nlme)
  - mnlogit (mnlogit)
  - pgmm (plm)
- New features:
  - decimal mark (argument `decimal.mark`) now gets automatically updated in notes (argument `notes`)
- Fixed bugs:
  - `felm` (`lfe`) working again
  - fixed formatting issues that led to an occasional inability to produce ASCII text output
  - much faster output of multi-model tables with many omitted variables
  - negative numbers are now properly displayed when `initial.zero` is set to `FALSE`
  - fixed minor bug that occasionally led to a misalignment of additional lines (argument `add.lines`)
  - `lm()` and `glm()` models now report AIC and BIC
  - underscores are now properly formatted in column and dependent variable labels
  - fixed an issue with the `mlogit` model that led LR tests to crash the output when no intercept was present

#### v. 5.1:

- New features:
  - the CRAN description now lists packages whose usefulness is enhanced by stargazer
- Fixed bugs
  - labels that indicate whether variables have been omitted from the model are now correctly assigned (argument `omit.labels`)
  - argument `summary.stat` now functions properly
  - `out.header` and `header` can both be set to `false` at the same time
  - minor formatting changes

#### v. 5.0:

- New models:
  - `felm` (`lfe`)
- New features:
  - ability to produce HTML/CSS output (argument `type`)
  - vector and matrix objects are now acceptable (argument `...`)
  - additional lines can be included in the tables (argument `add.lines`)
  - table layout is now fully customizable (arguments `table.layout` and `omit.table.layout`)
  - choice over which summary statistics should be reported (arguments `summary.stat` and `omit.summary.stat`)

- users can choose whether and the order in which to report coefficients, standard errors, confidence intervals, test statistics and p-values (argument `report`)
- object names can be reported above each column (argument `object.names`)
- option to toggle the reporting of dependent variables and model names across several columns (argument `multicolumn`)
- reporting of model statistics' degrees of freedom can now be suppressed (argument `df`)
- users can now include more than three statistical significance cutoffs (argument `star.cutoffs`)
- regression, summary statistic and data frame table can now be flipped (argument `flip`)
- colnames and rownames can be included in, or excluded from, data frame content tables (arguments `colnames` and `rownames`)
- argument `summary` can now have a different value for each table within a single `stargazer()` call
- if arguments `coef`, `se`, `t`, `p`, `ci.custom` and `add.lines` only contain a single vector, they will be accepted as though they were a list containing the same vector

- Fixed bugs:

- fixed bug that caused the number of observations to be misreported in complicated models
- fixed bug that led to the omission of coefficients from output when multiple models had a single regressor
- notes now working well for summary statistics and data frame tables
- font size can now be change even if floating environment is not used
- fixed compatability issues with latest version of Zelig
- argument `apply.ci` now works properly
- minor formatting changes

v. 4.5.3:

- New features:

- model objects can now be passed to `stargazer` in a list (argument `...`)

- Fixed bugs:

- fixed problem with printing negative numbers in data frame and summary statistics tables
- corrected formatting of column widths in ASCII text output
- minor bug with `lme4` covariate names corrected

v. 4.5.2:

- Fixed bugs:

- much faster output
- now compatible with the updated `lme4` package
- corrected a bug that prevented users from including multiple models with a single covariate + intercept
- underscores now print correctly in ASCII text output

v. 4.5.1:

- Fixed bugs:

- fixed a bug involving the calculation of t-statistics from user-given coefficients and standard errors

## v. 4.5:

- New models:
  - binaryChoice (sampleSelection)
  - brglm (brglm)
  - coeftest (lmtest)
  - heckit (sampleSelection)
  - maBina (erer)
  - mclgit (mclgit)
  - mlogit (mlogit)
  - selection (sampleSelection)
- New features:
  - explanatory variables can be ordered in customizable ways (argument order)
  - custom functions can now be applied to coefficients (argument apply.coef), standard errors (argument apply.se), test statistics (argument apply.t), p-values (argument apply.p), and confidence intervals (argument apply.ci)
  - keep explanatory variables and statistics based on regular expressions (argument keep and keep.stat)
  - users can customize confidence intervals (argument custom.ci)
  - ability to have both standard errors and confidence intervals in the same table (argument ci is now a logical vector)
  - different confidence levels for each individual column (argument ci.level is now a vector)
  - ability to omit and keep variables based on their position in the table
- Fixed bugs:
  - citation and change log updates
  - minor formatting changes

## v. 4.0:

- New models:
  - aftreg (eha)
  - bj (rms)
  - coxreg (eha)
  - cph (rms)
  - dynlm (dynlm)
  - errorsarlm (spdep)
  - Glm (rms)
  - Gls (rms)
  - gmm (gmm)
  - hetglm (glmx)
  - lrm (rms)
  - mlreg (eha)
  - lagsarlm (spdep)
  - ols (rms)
  - phreg (eha)
  - psm (rms)
  - rem.dyad (relevent)

- rq (quantreg)
- Rq (rms)
- weibreg (eha)
  
- New features:
  - the package can produce ASCII text output, in addition to LaTeX code (argument type)
  - output directly to .tex or .txt files (argument out)
  - column labels (arguments column.labels and column.separate)
  - confidence intervals (arguments ci, ci.level and ci.separator)
  - coefficients and standard errors/confidence intervals can now be reported in the same row (argument single.row)
  - users can choose to omit all empty lines in a table (argument no.space)
  - notes can now be appended to, rather than always replace, the default notes for a given style (argument notes.append)
  - ability to customize the dependent variable caption (argument dep.var.caption)
  - font size can now be changed (argument font.size)
  - comments header (with package and author name, version, date and time) can now be suppressed (argument header)
  - ability to change or disable the floating environment (arguments float and float.env)
  - table placement settings (argument table.placement)
  - customization of column spacing (argument column.sep.width)
  - perl-compatible regular expressions (argument perl)
  
- Fixed bugs:
  - all columns are now displayed for multinom objects
  - better positioning of tables in the LaTeX document
  - minor formatting changes
  
- v. 3.0.1:
  - Fixed bugs:
    - corrected an issue that led to problems when printing data frames with multiple decimal places
    - some reporting and formatting changes to summary statistics and data frame tables
  
- v. 3.0:
  - New models:
    - clm (ordinal)
    - clogit (survival)
    - ergm (ergm)
    - glmer (lme4)
    - gls (nlme)
    - lmer (lme4)
    - lmrob (robustbase)
    - nlmer (lme4)
    - pmg (plm)
    - rlm (MASS)

- New features:
  - users can customize coefficients (argument `coef`), standard errors (`se`), test statistics (`t`), and p-values (`p`)
  - automatic calculation of z-scores and p-values when the user supplies custom standard errors (can be toggled using arguments `t.auto` and `p.auto`)
  - ability to set `\label{}` markers in TeX for each table (using argument `label`)
  - summary statistics table can now report logical (i.e., dummy, indicator) variables as if they had values of 0 (corresponding to FALSE) and 1 (TRUE). See argument `summary.logical`.
  - user can choose between rounding to a set number of decimal places (argument `digits`) and reporting all available decimal places (by setting `digits` equal to NA)
  - can omit all test statistics

- Fixed bugs:
  - package runs much faster
  - corrected p-values for `polr()` and `zelig` `oprobit`, `ologit` models
  - `coxph` now, by default, reports robust standard errors, for consistency with its `summary()` output
  - multinom models now report the first set of coefficients (when multiple sets are present), instead of producing an error
  - singularities in model regression no longer disrupt the output
  - model formulas can now be symbols
  - no more warnings when creating summary statistics tables
  - minor formatting changes

#### v. 2.0.1:

- Fixed bugs:
  - stargazer now reports the correct number of observations for `plm()` models

#### v. 2.0:

- New models:
  - `betareg` (`betareg`)
  - `hurdle` (`pscl`)
  - `ivreg` (AER)
  - `multinom` (`nnet`)
  - `plm` (`plm`)
  - `tobit` (AER)
  - `zeroinfl` (`pscl`)
- New features:
  - direct output of data frames into LaTeX (`summary = FALSE`)
  - ability to omit the reporting of selected statistics (using argument `omit.stat`) – alignment of columns at the decimal mark (`align = TRUE`)
  - automatic coordination of star cutoffs and values in regression table notes
- Fixed bugs:
  - argument `digits` now works properly
  - stargazer updated to reflect, and work properly with, recent changes to `Zelig`

- variable names can now contain dollar signs and underscores
- some minor formatting fixes

---

stargazer\_stat\_code\_list

*stargazer: list of statistic codes*

---

### Description

The following character strings can be used in the `keep.stat` and `omit.stat` arguments of the `stargazer` command.

"all"	all statistics
"adj.rsq"	adjusted R-squared
"aic"	Akaike Information Criterion
"bic"	Bayesian Information Criterion
"chi2"	chi-squared
"f"	F statistic
"ll"	log-likelihood
"logrank"	score (logrank) test
"lr"	likelihood ratio (LR) test
"max.rsq"	maximum R-squared
"n"	number of observations
"null.dev"	null deviance
"Mills"	Inverse Mills Ratio
"res.dev"	residual deviance
"rho"	rho
"rsq"	R-squared
"scale"	scale
"theta"	theta
"ser"	standard error of the regression (i.e., residual standard error)
"sigma2"	sigma squared
"ubre"	Un-Biased Risk Estimator
"wald"	Wald test

---

stargazer\_style\_list *stargazer: list of supported styles*

---

**Description**

The following character strings can be used in the `style` argument of the `stargazer` command. Most styles are designed to resemble an existing academic journal, as listed below.

"all"	publish every statistic available, incl. t-statistics and p-values
"all2"	same as "all", but omitting t-statistics and p-values
"default"	default: publish regression coefficients with standard errors, and the most commonly reported statistics
"commadefault"	like "default", but uses a decimal comma and a single space to separate thousands
"aer"	American Economic Review
"ajps"	American Journal of Political Science
"ajs"	American Journal of Sociology
"asq"	Administrative Science Quarterly
"asr"	American Sociological Review
"apsr"	American Political Science Review
"demography"	Demography
"io"	International Organization
"jpam"	Journal of Policy Analysis and Management
"qje"	Quarterly Journal of Economics

---

stargazer\_summary\_stat\_code\_list

*stargazer: list of summary statistic codes*

---

**Description**

The following character strings can be used in the `summary.stat` and `omit.summary.stat` arguments of the `stargazer` command.

"max"	maximum
"mean"	mean
"median"	median
"min"	minimum
"n"	number of observations
"p25"	25th percentile
"p75"	75th percentile
"sd"	standard deviation

---

stargazer\_table\_layout\_characters

*stargazer: table layout characters*

---

### Description

The following character strings can be used in the `table.layout` and `omit.table.layout` arguments of the [stargazer](#) command.

"-"	single horizontal line
"="	double horizontal line
"-!"	mandatory single horizontal line
"=!"	mandatory double horizontal line
"l"	dependent variable caption
"d"	dependent variable labels
"m"	model label
"c"	column labels
"#"	model numbers
"b"	object names
"t"	coefficient table
"o"	omitted coefficient indicators
"a"	additional lines
"n"	notes
"s"	model statistics

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