

# Package ‘coefplot’

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**Type** Package

**Title** Plots Coefficients from Fitted Models

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**Description** Plots the coefficients from model objects. This very quickly shows the user the point estimates and confidence intervals for fitted models.

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**LazyLoad** yes

**Depends** ggplot2 (>= 2.0.0)

**Imports** plyr, reshape2, useful, stats

**Enhances** glmnet, maxLik

**ByteCompile** TRUE

**Suggests** testthat

**RoxygenNote** 5.0.1

**NeedsCompilation** no

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buildModelCI	<i>buildModelCI</i>
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---

## Description

Construct Confidence Interval Values

## Usage

```
buildModelCI(model, ...)
```

## Arguments

model	A Fitted model such as from lm, glm
...	Arguments passed on onto other methods

**Details**

Takes a model and builds a data.frame holding the coefficient value and the confidence interval values.

**Value**

A `data.frame` listing coefficients and confidence bands.

**Author(s)**

Jared P. Lander

**See Also**

[coefplot multiplot](#)

**Examples**

```
data(diamonds)
model1 <- lm(price ~ carat + cut, data=diamonds)
coefplot:::buildModelCI(model1)
coefplot(model1)
```

---

buildModelCI.default    *buildModelCI.default*

---

**Description**

Construct Confidence Interval Values

**Usage**

```
## Default S3 method:
buildModelCI(model, outerCI = 2, innerCI = 1,
  intercept = TRUE, numeric = FALSE, sort = c("natural", "magnitude",
  "alphabetical"), predictors = NULL, strict = FALSE, coefficients = NULL,
  newNames = NULL, decreasing = TRUE, name = NULL,
  interceptName = "(Intercept)", ...)
```

**Arguments**

model	A Fitted model such as from <code>lm</code> , <code>glm</code>
outerCI	How wide the outer confidence interval should be, normally 2 standard deviations. If 0, then there will be no outer confidence interval.
innerCI	How wide the inner confidence interval should be, normally 1 standard deviation. If 0, then there will be no inner confidence interval.

<code>intercept</code>	logical; Whether the Intercept coefficient should be plotted
<code>numeric</code>	logical; If true and factors has exactly one value, then it is displayed in a horizontal graph with continuous confidence bounds.; not used for now.
<code>sort</code>	Determines the sort order of the coefficients. Possible values are <code>c("natural", "magnitude", "alphabetical")</code>
<code>predictors</code>	A character vector specifying which variables to keep. Each individual variable has to be specified, so individual levels of factors must be specified. We are working on making this easier to implement, but this is the only option for now.
<code>strict</code>	If TRUE then predictors will only be matched to its own coefficients, not its interactions
<code>coefficients</code>	A character vector specifying which factor variables to keep. It will keep all levels and any interactions, even if those are not listed.
<code>newNames</code>	Named character vector of new names for coefficients
<code>decreasing</code>	logical; Whether the coefficients should be ascending or descending
<code>name</code>	A name for the model, if NULL the call will be used
<code>interceptName</code>	Specifies name of intercept if case it is not the default of "(Intercept)".
<code>...</code>	See Details for information on factors, only and shorten

**Details**

Takes a model and builds a data.frame holding the coefficient value and the confidence interval values.

**Value**

A [data.frame](#) listing coefficients and confidence bands.

**Author(s)**

Jared P. Lander

**See Also**

[coefplot](#) [multiplot](#)

**Examples**

```
data(diamonds, package='ggplot2')
model1 <- lm(price ~ carat + cut, data=diamonds)
coefplot:::buildModelCI(model1)
coefplot(model1)
```

---

 buildPlotting.default *Coefplot plotting*


---

## Description

Build ggplot object for coefplot

## Usage

```
buildPlotting.default(modelCI, title = "Coefficient Plot", xlab = "Value",
  ylab = "Coefficient", lwdInner = 1, lwdOuter = 0, pointSize = 3,
  color = "blue", cex = 0.8, textAngle = 0, numberAngle = 0,
  shape = 16, linetype = 1, outerCI = 2, innerCI = 1, multi = FALSE,
  zeroColor = "grey", zeroLWD = 1, zeroType = 2, numeric = FALSE,
  fillColor = "grey", alpha = 1/2, horizontal = FALSE, facet = FALSE,
  scales = "free", value = "Value", coefficient = "Coefficient",
  errorHeight = 0, dodgeHeight = 1)
```

## Arguments

modelCI	An object created by <a href="#">buildModelCI</a>
title	The name of the plot, if NULL then no name is given
xlab	The x label
ylab	The y label
lwdInner	The thickness of the inner confidence interval
lwdOuter	The thickness of the outer confidence interval
pointSize	Size of coefficient point
color	The color of the points and lines
cex	The text size multiplier, currently not used
textAngle	The angle for the coefficient labels, 0 is horizontal
numberAngle	The angle for the value labels, 0 is horizontal
shape	The shape of the points
linetype	The linetype of the error bars
outerCI	How wide the outer confidence interval should be, normally 2 standard deviations. If 0, then there will be no outer confidence interval.
innerCI	How wide the inner confidence interval should be, normally 1 standard deviation. If 0, then there will be no inner confidence interval.
multi	logical; If this is for <a href="#">multiplot</a> then leave the colors as determined by the legend, if FALSE then make all colors the same
zeroColor	The color of the line indicating 0
zeroLWD	The thickness of the 0 line

<code>zeroType</code>	The type of 0 line, 0 will mean no line
<code>numeric</code>	logical; If true and factors has exactly one value, then it is displayed in a horizontal graph with continuous confidence bounds.
<code>fillColor</code>	The color of the confidence bounds for a numeric factor
<code>alpha</code>	The transparency level of the numeric factor's confidence bound
<code>horizontal</code>	logical; If the plot should be displayed horizontally
<code>facet</code>	logical; If the coefficients should be faceted by the variables, numeric coefficients (including the intercept) will be one facet
<code>scales</code>	The way the axes should be treated in a faceted plot. Can be <code>c("fixed", "free", "free_x", "free_y")</code>
<code>value</code>	Name of variable for value metric
<code>coefficient</code>	Name of variable for coefficient names
<code>errorHeight</code>	Height of error bars
<code>dodgeHeight</code>	Amount of vertical dodging

**Details**

This function builds up the ggplot layer by layer for [coefplot.lm](#)

**Value**

a ggplot graph object

**Author(s)**

Jared P. Lander [www.jaredlander.com](http://www.jaredlander.com)

**See Also**

[coefplot.default](#) [coefplot](#) [multiplot](#)

**Examples**

```
data(diamonds)
model1 <- lm(price ~ carat + cut, data=diamonds)
theCI <- coefplot:::buildModelCI(model1)
coefplot:::buildPlotting.default(theCI)
coefplot(model1)
```

---

coefplot	<i>Plotting Model Coefficients</i>
----------	------------------------------------

---

### Description

Provides an S3 generic method for plotting coefficients from a model so it can be extended to other model types.

A graphical display of the coefficients and standard errors from a fitted model

### Usage

```
coefplot(model, ...)
```

### Arguments

model	The fitted model with coefficients to be plotted
...	See <a href="#">coefplot.lm</a> for argument details

### Details

Currently, methods are available for lm, glm and rxLinMod objects.

coefplot is the S3 generic method for plotting the coefficients from a fitted model.

This can be extended with new methods for other types of models not currently available.

A future iteration of coefplot.glm will also allow for plotting the coefficients on the transformed scale.

See [coefplot.lm](#) for specific documentation and the return value.

### Value

A ggplot2 object or data.frame. See details in [coefplot.lm](#) for more information

### Author(s)

Jared P. Lander

### See Also

[coefplot.lm](#)

## Examples

```

data(diamonds)
head(diamonds)
model1 <- lm(price ~ carat + cut*color, data=diamonds)
model2 <- lm(price ~ carat*color, data=diamonds)
model3 <- glm(price > 10000 ~ carat*color, data=diamonds)
coefplot(model1)
coefplot(model2)
coefplot(model3)
coefplot(model1, predictors="color")
coefplot(model1, predictors="color", strict=TRUE)
coefplot(model1, coefficients=c("(Intercept)", "color.Q"))
coefplot(model1, predictors="cut", coefficients=c("(Intercept)", "color.Q"), strict=TRUE)
coefplot(model1, predictors="cut", coefficients=c("(Intercept)", "color.Q"), strict=FALSE)
coefplot(model1, predictors="cut", coefficients=c("(Intercept)", "color.Q"),
strict=TRUE, newNames=c(color.Q="Color", "cut^4"="Fourth"))
coefplot(model1, predictors=c("(Intercept)", "carat"), newNames=c(carat="Size"))
coefplot(model1, predictors=c("(Intercept)", "carat"),
newNames=c(carat="Size", "(Intercept)"="Constant"))

```

---

coefplot.data.frame    *coefplot.data.frame*

---

## Description

Dotplot for coefficients

## Usage

```

## S3 method for class 'data.frame'
coefplot(model, title = "Coefficient Plot",
  xlab = "Value", ylab = "Coefficient", lwdInner = 1, lwdOuter = 0,
  pointSize = 3, color = "blue", cex = 0.8, textAngle = 0,
  numberAngle = 0, shape = 16, linetype = 1, outerCI = 2, innerCI = 1,
  multi = FALSE, zeroColor = "grey", zeroLWD = 1, zeroType = 2,
  numeric = FALSE, fillColor = "grey", alpha = 1/2, horizontal = FALSE,
  facet = FALSE, scales = "free", value = "Value",
  coefficient = "Coefficient", errorHeight = 0, dodgeHeight = 1, ...)

```

## Arguments

model	A data.frame like that built from coefplot(..., plot=FALSE)
title	The name of the plot, if NULL then no name is given
xlab	The x label
ylab	The y label



lwdInner	The thickness of the inner confidence interval
lwdOuter	The thickness of the outer confidence interval
pointSize	Size of coefficient point
color	The color of the points and lines
cex	The text size multiplier, currently not used
textAngle	The angle for the coefficient labels, 0 is horizontal
numberAngle	The angle for the value labels, 0 is horizontal
shape	The shape of the points
linetype	The linetype of the error bars
outerCI	How wide the outer confidence interval should be, normally 2 standard deviations. If 0, then there will be no outer confidence interval.
innerCI	How wide the inner confidence interval should be, normally 1 standard deviation. If 0, then there will be no inner confidence interval.
multi	logical; If this is for <code>multiplot</code> then leave the colors as determined by the legend, if FALSE then make all colors the same
zeroColor	The color of the line indicating 0
zeroLWD	The thickness of the 0 line
zeroType	The type of 0 line, 0 will mean no line
numeric	logical; If true and factors has exactly one value, then it is displayed in a horizontal graph with continuous confidence bounds.
fillColor	The color of the confidence bounds for a numeric factor
alpha	The transparency level of the numeric factor's confidence bound
horizontal	logical; If the plot should be displayed horizontally
facet	logical; If the coefficients should be faceted by the variables, numeric coefficients (including the intercept) will be one facet
scales	The way the axes should be treated in a faceted plot. Can be c("fixed", "free", "free_x", "free_y")
value	Name of variable for value metric
coefficient	Name of variable for coefficient names
errorHeight	Height of error bars
dodgeHeight	Amount of vertical dodging
...	Further Arguments

### Details

A graphical display of the coefficients and standard errors from a fitted model, this function uses a `data.frame` as the input.

### Value

a `ggplot` graph object

**Author(s)**

Jared P. Lander

**Examples**

```

data(diamonds)
head(diamonds)
model1 <- lm(price ~ carat + cut*color, data=diamonds)
model2 <- lm(price ~ carat*color, data=diamonds)
df1 <- coefplot(model1, plot=FALSE)
df2 <- coefplot(model2, plot=FALSE)
coefplot(df1)
coefplot(df2)

```

---

<code>coefplot.default</code>	<i>coefplot.default</i>
-------------------------------	-------------------------

---

**Description**

Dotplot for coefficients

**Usage**

```

## Default S3 method:
coefplot(model, title = "Coefficient Plot",
  xlab = "Value", ylab = "Coefficient", innerCI = 1, outerCI = 2,
  lwdInner = 1, lwdOuter = 0, pointSize = 3, color = "blue",
  shape = 16, cex = 0.8, textAngle = 0, numberAngle = 0,
  zeroColor = "grey", zeroLWD = 1, zeroType = 2, facet = FALSE,
  scales = "free", sort = c("natural", "magnitude", "alphabetical"),
  decreasing = FALSE, numeric = FALSE, fillColor = "grey", alpha = 1/2,
  horizontal = FALSE, factors = NULL, only = NULL, shorten = TRUE,
  intercept = TRUE, interceptName = "(Intercept)", coefficients = NULL,
  predictors = NULL, strict = FALSE, newNames = NULL, plot = TRUE, ...)

```

**Arguments**

<code>model</code>	The model to plot.
<code>title</code>	The name of the plot, if NULL then no name is given
<code>xlab</code>	The x label
<code>ylab</code>	The y label
<code>innerCI</code>	How wide the inner confidence interval should be, normally 1 standard deviation. If 0, then there will be no inner confidence interval.
<code>outerCI</code>	How wide the outer confidence interval should be, normally 2 standard deviations. If 0, then there will be no outer confidence interval.

lwdInner	The thickness of the inner confidence interval
lwdOuter	The thickness of the outer confidence interval
pointSize	Size of coefficient point
color	The color of the points and lines
shape	The shape of the points
cex	The text size multiplier, currently not used
textAngle	The angle for the coefficient labels, 0 is horizontal
numberAngle	The angle for the value labels, 0 is horizontal
zeroColor	The color of the line indicating 0
zeroLWD	The thickness of the 0 line
zeroType	The type of 0 line, 0 will mean no line
facet	logical; If the coefficients should be faceted by the variables, numeric coefficients (including the intercept) will be one facet. Currently not available.
scales	The way the axes should be treated in a faceted plot. Can be c("fixed", "free", "free_x", "free_y"). Currently not available.
sort	Determines the sort order of the coefficients. Possible values are c("natural", "normal", "magnitude", "size", "alphabetical")
decreasing	logical; Whether the coefficients should be ascending or descending
numeric	logical; If true and factors has exactly one value, then it is displayed in a horizontal graph with continuous confidence bounds. Currently not available.
fillColor	The color of the confidence bounds for a numeric factor. Currently not available.
alpha	The transparency level of the numeric factor's confidence bound. Currently not available.
horizontal	logical; If the plot should be displayed horizontally. Currently not available.
factors	Vector of factor variables that will be the only ones shown
only	logical; If factors has a value this determines how interactions are treated. True means just that variable will be shown and not its interactions. False means interactions will be included.
shorten	logical or character; If FALSE then coefficients for factor levels will include their variable name. If TRUE coefficients for factor levels will be stripped of their variable names. If a character vector of variables only coefficients for factor levels associated with those variables will the variable names stripped. Currently not available.
intercept	logical; Whether the Intercept coefficient should be plotted
interceptName	Specifies name of intercept it case it is not the default of "(Intercept)".
coefficients	A character vector specifying which factor coefficients to keep. It will keep all levels and any interactions, even if those are not listed.
predictors	A character vector specifying which coefficients to keep. Each individual coefficient can be specified. Use predictors to specify entire factors.
strict	If TRUE then predictors will only be matched to its own coefficients, not its interactions

<code>newNames</code>	Named character vector of new names for coefficients
<code>plot</code>	logical; If the plot should be drawn, if false then a <code>data.frame</code> of the values will be returned
<code>...</code>	Arguments passed on to other functions

### Details

A graphical display of the coefficients and standard errors from a fitted model

`coefplot` is the S3 generic method for plotting the coefficients from a fitted model.

This method also plots coefficients from `glm` (using `coefplot.lm`) and `rxLinMod` models (through a redirection from `coefplot.rxCoxMod`)

### Value

If `plot` is TRUE then a `ggplot` object is returned. Otherwise a `data.frame` listing coefficients and confidence bands is returned.

### Author(s)

Jared P. Lander

### See Also

[lm](#) [glm](#) [ggplot](#) [coefplot](#) [plotcoef](#)

### Examples

```
data(diamonds)
head(diamonds)
model1 <- lm(price ~ carat + cut*color, data=diamonds)
model2 <- lm(price ~ carat*color, data=diamonds)
coefplot(model1)
coefplot(model2)
coefplot(model1, predictors="color")
coefplot(model1, predictors="color", strict=TRUE)
coefplot(model1, coefficients=c("(Intercept)", "color.Q"))
```

---

`coefplot.glm`

*coefplot.glm*

---

### Description

Dotplot for `glm` coefficients

**Usage**

```
## S3 method for class 'glm'  
coefplot(...)
```

**Arguments**

... All arguments are passed on to [coefplot.default](#). Please see that function for argument information.

**Details**

A graphical display of the coefficients and standard errors from a fitted glm model  
[coefplot](#) is the S3 generic method for plotting the coefficients from a fitted model.  
For more information on this function and its arguments see [coefplot.default](#)

**Value**

A ggplot object. See [coefplot.lm](#) for more information.

**Author(s)**

Jared P. Lander

**Examples**

```
model2 <- glm(price > 10000 ~ carat + cut*color, data=diamonds, family=binomial(link="logit"))  
coefplot(model2)
```

---

coefplot.lm

*coefplot.lm*

---

**Description**

Dotplot for lm coefficients

**Usage**

```
## S3 method for class 'lm'  
coefplot(...)
```

**Arguments**

... All arguments are passed on to [coefplot.default](#). Please see that function for argument information.

**Details**

A graphical display of the coefficients and standard errors from a fitted lm model `coefplot` is the S3 generic method for plotting the coefficients from a fitted model. For more information on this function and its arguments see `coefplot.default`

**Value**

A ggplot object. See `coefplot.lm` for more information.

**Author(s)**

Jared P. Lander

**Examples**

```
model1 <- lm(price ~ carat + cut*color, data=diamonds)
coefplot(model1)
```

---

`coefplot.rxGlm`*coefplot.rxGlm*

---

**Description**

Dotplot for rxGlm coefficients

**Usage**

```
## S3 method for class 'rxGlm'
coefplot(...)
```

**Arguments**

... All arguments are passed on to `coefplot.default`. Please see that function for argument information.

**Details**

A graphical display of the coefficients and standard errors from a fitted rxGlm model `coefplot` is the S3 generic method for plotting the coefficients from a fitted model. For more information on this function and its arguments see `coefplot.default`

**Value**

A ggplot object. See `coefplot.lm` for more information.

**Author(s)**

Jared P. Lander

**Examples**

```
## Not run:
mod4 <- rxGlm(price ~ carat + cut + x, data=diamonds)
mod5 <- rxGlm(price > 10000 ~ carat + cut + x, data=diamonds, family="binomial")
coefplot(mod4)
coefplot(mod5)

## End(Not run)
```

---

coefplot.rxLinMod      *coefplot.rxLinMod*

---

**Description**

Dotplot for rxLinMod coefficients

**Usage**

```
## S3 method for class 'rxLinMod'
coefplot(...)
```

**Arguments**

...                    All arguments are passed on to [coefplot.lm](#). Please see that function for argument information.

**Details**

A graphical display of the coefficients and standard errors from a fitted rxLinMod model

[coefplot](#) is the S3 generic method for plotting the coefficients from a fitted model.

For more information on this function and its arguments see [coefplot.lm](#)

**Value**

A ggplot object. See [coefplot.lm](#) for more information.

**Author(s)**

Jared P. Lander [www.jaredlander.com](http://www.jaredlander.com)

## Examples

```
## Not run:
data(diamonds)
mod3 <- rxLinMod(price ~ carat + cut + x, data=diamonds)
coefplot(mod3)

## End(Not run)
```

---

coefplot.rxLogit	<i>coefplot.rxLogit</i>
------------------	-------------------------

---

## Description

Dotplot for rxLogit coefficients

## Usage

```
## S3 method for class 'rxLogit'
coefplot(...)
```

## Arguments

... All arguments are passed on to [coefplot.lm](#). Please see that function for argument information.

## Details

A graphical display of the coefficients and standard errors from a fitted rxLogit model

[coefplot](#) is the S3 generic method for plotting the coefficients from a fitted model.

For more information on this function and its arguments see [coefplot.lm](#)

## Value

A ggplot object. See [coefplot.lm](#) for more information.

## Author(s)

Jared P. Lander [www.jaredlander.com](http://www.jaredlander.com)

## Examples

```
## Not run:
data(diamonds)
mod6 <- rxLogit(price > 10000 ~ carat + cut + x, data=diamonds)
coefplot(mod6)

## End(Not run)
```



---

doRegex	<i>doRegex</i>
---------	----------------

---

**Description**

Helper function for matching coefficients

**Usage**

```
doRegex(x, matchAgainst, pattern = "(^| )%s($|,|=)")
```

**Arguments**

x	Root pattern to search for
matchAgainst	Text to search through
pattern	Regex pattern to build x into

**Details**

Only used by [getCoefsFromPredictorsRevo](#) for finding matches between predictors and coefficients

**Value**

A list of indices of matchAgainst that is matched

**Author(s)**

Jared P. Lander

---

extract.coef	<i>extract.coef</i>
--------------	---------------------

---

**Description**

Extract Coefficient Information from glm Models

**Usage**

```
extract.coef(model, ...)
```

**Arguments**

model	Model object to extract information from.
...	Further arguments

**Details**

Gets the coefficient values and standard errors, and variable names from a glm model.

**Value**

A `data.frame` containing the coefficient, the standard error and the variable name.

**Author(s)**

Jared P. Lander

**Examples**

```
## Not run:
require(ggplot2)
data(diamonds)
library(coefplot)
mod1 <- lm(price ~ carat + cut + x, data=diamonds)
mod2 <- glm(price > 10000 ~ carat + cut + x, data=diamonds, family=binomial(link="logit"))
mod3 <- lm(price ~ carat*cut + x, data=diamonds)
extract.coef(mod1)
extract.coef(mod2)
extract.coef(mod3)

mod4 <- rxLinMod(price ~ carat*cut + x, diamonds)

## End(Not run)
```

---

extract.coef.cv.glmnet

*extract.coef.cv.glmnet*

---

**Description**

Extract Coefficient Information from Models

**Usage**

```
## S3 method for class 'cv.glmnet'
extract.coef(model, lambda = "lambda.min", ...)
```

**Arguments**

model	Model object from which to extract information.
lambda	Value of penalty parameter. Can be either a numeric value or one of "lambda.min" or "lambda.1se"
...	Further arguments

**Details**

Gets the coefficient values and variable names from a model. Since glmnet does not have standard errors, those will just be NA.

**Value**

A `data.frame` containing the coefficient, the standard error and the variable name.

**Author(s)**

Jared P. Lander

**Examples**

```
## Not run:
library(glmnet)
library(ggplot2)
library(useful)
data(diamonds)
diaX <- build.x(price ~ carat + cut + x - 1, data=diamonds, contrasts = TRUE)
diaY <- build.y(price ~ carat + cut + x - 1, data=diamonds)
modG1 <- cv.glmnet(x=diaX, y=diaY, k=5)
extract.coef(modG1)

## End(Not run)
```

---

extract.coef.default    *extract.coef.default*

---

**Description**

Extract Coefficient Information from Models

**Usage**

```
## Default S3 method:
extract.coef(model, ...)
```

**Arguments**

model	Model object to extract information from.
...	Further arguments

**Details**

Gets the coefficient values and standard errors, and variable names from a model.

**Value**

A `data.frame` containing the coefficient, the standard error and the variable name.

**Author(s)**

Jared P. Lander

**Examples**

```
## Not run:
require(ggplot2)
library(coefplot)
data(diamonds)
mod1 <- lm(price ~ carat + cut + x, data=diamonds)
extract.coef(mod1)

## End(Not run)
```

---

extract.coef.glm	<i>extract.coef.glm</i>
------------------	-------------------------

---

**Description**

Extract Coefficient Information from glm Models

**Usage**

```
## S3 method for class 'glm'
extract.coef(model, ...)
```

**Arguments**

model	Model object to extract information from.
...	Further arguments

**Details**

Gets the coefficient values and standard errors, and variable names from a glm model.

**Value**

A `data.frame` containing the coefficient, the standard error and the variable name.

**Author(s)**

Jared P. Lander

## Examples

```
## Not run:
require(ggplot2)
data(diamonds)
library(coefplot)
mod2 <- glm(price > 10000 ~ carat + cut + x, data=diamonds, family=binomial(link="logit"))
extract.coef(mod2)

## End(Not run)
```

---

extract.coef.glmnet    *extract.coef.glmnet*

---

## Description

Extract Coefficient Information from Models

## Usage

```
## S3 method for class 'glmnet'
extract.coef(model, lambda = stats::median(model$lambda),
  ...)
```

## Arguments

model	Model object from which to extract information.
lambda	Value of penalty parameter
...	Further arguments

## Details

Gets the coefficient values and variable names from a model. Since glmnet does not have standard errors, those will just be NA.

## Value

A [data.frame](#) containing the coefficient, the standard error and the variable name.

## Author(s)

Jared P. Lander

## Examples

```
## Not run:
library(glmnet)
library(ggplot2)
library(useful)
data(diamonds)
diaX <- build.x(price ~ carat + cut + x - 1, data=diamonds, contrasts = TRUE)
diaY <- build.y(price ~ carat + cut + x - 1, data=diamonds)
modG1 <- glmnet(x=diaX, y=diaY)
extract.coef(modG1)

## End(Not run)
```

---

extract.coef.lm	<i>extract.coef.lm</i>
-----------------	------------------------

---

## Description

Extract Coefficient Information from lm Models

## Usage

```
## S3 method for class 'lm'
extract.coef(model, ...)
```

## Arguments

model	Model object to extract information from.
...	Further arguments

## Details

Gets the coefficient values and standard errors, and variable names from an lm model.

## Value

A [data.frame](#) containing the coefficient, the standard error and the variable name.

## Author(s)

Jared P. Lander

## Examples

```
## Not run:
require(ggplot2)
data(diamonds)
library(coefplot)
mod1 <- lm(price ~ carat + cut + x, data=diamonds)
extract.coef(mod1)

## End(Not run)
```

---

extract.coef.maxLik    *extract.coef.maxLik*

---

## Description

Extract Coefficient Information from Models

## Usage

```
## S3 method for class 'maxLik'
extract.coef(model, ...)
```

## Arguments

model	Model object from which to extract information.
...	Further arguments

## Details

Gets the coefficient values and variable names from a model.

## Value

A [data.frame](#) containing the coefficient, the standard error and the variable name.

## Author(s)

Jared P. Lander

## Examples

```
## Not run:
library(maxLik)
loglik <- function(param) {
  mu <- param[1]
  sigma <- param[2]
  ll <- -0.5*N*log(2*pi) - N*log(sigma) - sum(0.5*(x - mu)^2/sigma^2)
```

```

11
}
x <- rnorm(1000, 1, 2) # use mean=1, stdd=2
N <- length(x)
res <- maxLik(loglik, start=c(0,1)) # use 'wrong' start values
extract.coef(res)

## End(Not run)

```

---

```

extract.coef.rxGlm    extract.coef.rxGlm

```

---

## Description

Extract Coefficient Information from rxGlm Models

## Usage

```

## S3 method for class 'rxGlm'
extract.coef(model, ...)

```

## Arguments

model	Model object to extract information from.
...	Further arguments

## Details

Gets the coefficient values and standard errors, and variable names from an rxGlm model.

## Value

A [data.frame](#) containing the coefficient, the standard error and the variable name.

## Author(s)

Jared P. Lander

## Examples

```

## Not run:
require(ggplot2)
data(diamonds)
mod4 <- rxGlm(price ~ carat + cut + x, data=diamonds)
mod5 <- rxGlm(price > 10000 ~ carat + cut + x, data=diamonds, fmaily="binomial")
extract.coef(mod4)
extract.coef(mod5)

## End(Not run)

```



---

`extract.coef.rxLinMod` *extract.coef.rxLinMod*

---

## Description

Extract Coefficient Information from rxLinMod Models

## Usage

```
## S3 method for class 'rxLinMod'  
extract.coef(model, ...)
```

## Arguments

<code>model</code>	Model object to extract information from.
<code>...</code>	Further arguments

## Details

Gets the coefficient values and standard errors, and variable names from an rxLinMod model.

## Value

A `data.frame` containing the coefficient, the standard error and the variable name.

## Author(s)

Jared P. Lander

## Examples

```
## Not run:  
require(ggplot2)  
data(diamonds)  
mod3 <- rxLinMod(price ~ carat + cut + x, data=diamonds)  
extract.coef(mod3)  
  
## End(Not run)
```

---

extract.coef.rxLogit *extract.coef.rxLogit*

---

## Description

Extract Coefficient Information from rxLogit Models

## Usage

```
## S3 method for class 'rxLogit'  
extract.coef(model, ...)
```

## Arguments

model	Model object to extract information from.
...	Further arguments

## Details

Gets the coefficient values and standard errors, and variable names from an rxLogit model.

## Value

A [data.frame](#) containing the coefficient, the standard error and the variable name.

## Author(s)

Jared P. Lander

## Examples

```
## Not run:  
require(ggplot2)  
data(diamonds)  
mod6 <- rxLogit(price > 10000 ~ carat + cut + x, data=diamonds)  
extract.coef(mod6)  
  
## End(Not run)
```

---

get.assign	<i>get.assign</i>
------------	-------------------

---

**Description**

The assignment vector for a model

**Usage**

```
get.assign(model, ...)
```

**Arguments**

model	Fitted model
...	Further arguments

**Details**

Gets relative positions of predictors

**Value**

The assignment vector

**Author(s)**

Jared P. Lander

---

get.assign.glm	<i>get.assign.glm</i>
----------------	-----------------------

---

**Description**

The assignment vector for a glm model

**Usage**

```
## S3 method for class 'glm'  
get.assign(model, ...)
```

**Arguments**

model	Fitted model
...	Further arguments

**Details**

Gets relative positions of predictors

**Value**

The assignment vector

**Author(s)**

Jared P. Lander

---

<code>get.assign.lm</code>	<code>get.assign.lm</code>
----------------------------	----------------------------

---

**Description**

The assignment vector for an lm model

**Usage**

```
## S3 method for class 'lm'  
get.assign(model, ...)
```

**Arguments**

<code>model</code>	Fitted model
<code>...</code>	Further arguments

**Details**

Gets relative positions of predictors

**Value**

The assignment vector

**Author(s)**

Jared P. Lander

---

getCoefsFromPredictors  
*getCoefsFromPredictors*

---

**Description**

Generic function for finding which coefficients go with which predictors

**Usage**

```
getCoefsFromPredictors(model, predictors, ...)
```

**Arguments**

model	A fitted model
predictors	A character vector of predictors to match against
...	further arguments

**Details**

The user specifies predictors whose coefficients should be included in the coefplot.

**Value**

A character vector of coefficients listing the coefficients that match the predictor

**Author(s)**

Jared P. Lander

---

getCoefsFromPredictors.default  
*getCoefsFromPredictors.default*

---

**Description**

Default function (lm, glm) for matching coefficients with predictors

**Usage**

```
## Default S3 method:  
getCoefsFromPredictors(model, predictors = NULL,  
  strict = FALSE, ...)
```

**Arguments**

<code>model</code>	A fitted model
<code>predictors</code>	A character vector of predictors to match against. Interactions can be explicitly specified by <code>VariableA:VariableB</code> .
<code>strict</code>	Logical specifying if interactions terms should be included (FALSE) or just the main terms (TRUE).
<code>...</code>	further arguments

**Details**

The user specifies predictors whose coefficients should be included in the coefplot.

**Value**

A character vector of coefficients listing the coefficients that match the predictor

**Author(s)**

Jared P. Lander

---

```
getCoefsFromPredictors.rxGlm
      getCoefsFromPredictors.rxGlm
```

---

**Description**

Function for matching coefficients with predictors for rxGlm

**Usage**

```
## S3 method for class 'rxGlm'
getCoefsFromPredictors(model, predictors = NULL,
  strict = FALSE, ...)
```

**Arguments**

<code>model</code>	A fitted model
<code>predictors</code>	A character vector of predictors to match against
<code>strict</code>	Logical specifying if interactions terms should be included (FALSE) or just the main terms (TRUE).
<code>...</code>	further arguments

**Details**

The user specifies predictors whose coefficients should be included in the coefplot.

**Value**

A character vector of coefficients listing the coefficients that match the predictor

**Author(s)**

Jared P. Lander

---

```
getCoefsFromPredictors.rxLinMod  
  getCoefsFromPredictors.rxLinMod
```

---

**Description**

Function for matching coefficients with predictors for rxLinMod

**Usage**

```
## S3 method for class 'rxLinMod'  
getCoefsFromPredictors(model, predictors = NULL,  
  strict = FALSE, ...)
```

**Arguments**

model	A fitted model
predictors	A character vector of predictors to match against
strict	Logical specifying if interactions terms should be included (FALSE) or just the main terms (TRUE).
...	further arguments

**Details**

The user specifies predictors whose coefficients should be included in the coefplot.

**Value**

A character vector of coefficients listing the coefficients that match the predictor

**Author(s)**

Jared P. Lander

---

```
getCoefsFromPredictors.rxLogit  
  getCoefsFromPredictors.rxLogit
```

---

**Description**

Function for matching coefficients with predictors for rxLogit

**Usage**

```
## S3 method for class 'rxLogit'  
getCoefsFromPredictors(model, predictors = NULL,  
  strict = FALSE, ...)
```

**Arguments**

model	A fitted model
predictors	A character vector of predictors to match against
strict	Logical specifying if interactions terms should be included (FALSE) or just the main terms (TRUE).
...	further arguments

**Details**

The user specifies predictors whose coefficients should be included in the coefplot.

**Value**

A character vector of coefficients listing the coefficients that match the predictor

**Author(s)**

Jared P. Lander

---

```
getCoefsFromPredictorsRevo  
  getCoefsFromPredictorsRevo
```

---

**Description**

Function thhat does the work for Revo models for matching coefficients with predictors

**Usage**

```
getCoefsFromPredictorsRevo(model, predictors = NULL, strict = FALSE, ...)
```



**Arguments**

model	A fitted model
predictors	A character vector of predictors to match against
strict	Logical specifying if interactions terms should be included (FALSE) or just the main terms (TRUE).
...	further arguments

**Details**

The user specifies predictors whose coefficients should be included in the coefplot.

**Value**

A character vector of coefficients listing the coefficients that match the predictor. As of now interactions cannot be explicitly specified.

**Author(s)**

Jared P. Lander

---

matchCoefs

*matchCoefs*

---

**Description**

Match coefficients to predictors

**Usage**

```
matchCoefs(model, ...)
```

**Arguments**

model	Fitted model
...	Further arguments

**Details**

Matches coefficients to predictors using information from model matrices

**Value**

a data.frame matching predictors to coefficients

**Author(s)**

Jared P. Lander

## Examples

```
## Not run:
require(reshape2)
require(plyr)
data("tips", package="reshape2")
mod1 <- lm(tip ~ total_bill * sex + day, tips)
mod2 <- lm(tip ~ total_bill * sex + day - 1, tips)
mod3 <- glm(tip ~ total_bill * sex + day, tips, family=gaussian(link="identity"))
mod4 <- lm(tip ~ (total_bill + sex + day)^3, tips)
mod5 <- lm(tip ~ total_bill * sex + day + I(total_bill^2), tips)
coefplot:::matchCoefs(mod1)
coefplot:::matchCoefs(mod2)
coefplot:::matchCoefs(mod3)
coefplot:::matchCoefs(mod4)
coefplot:::matchCoefs(mod5)

## End(Not run)
```

---

matchCoefs.default      *matchCoefs.default*

---

## Description

Match coefficients to predictors

## Usage

```
## Default S3 method:
matchCoefs(model, ...)
```

## Arguments

model	Fitted model
...	Further arguments

## Details

Matches coefficients to predictors using information from model matrices

## Value

a data.frame matching predictors to coefficients

## Author(s)

Jared P. Lander

multiplot

*Plot multiple coefplots***Description**

Plot the coefficients from multiple models

**Usage**

```
multiplot(..., title = "Coefficient Plot", xlab = "Value",
  ylab = "Coefficient", innerCI = 1, outerCI = 2, lwdInner = 1,
  lwdOuter = 0, pointSize = 3, dodgeHeight = 1, color = "blue",
  shape = 16, linetype = 1, cex = 0.8, textAngle = 0,
  numberAngle = 90, zeroColor = "grey", zeroLWD = 1, zeroType = 2,
  single = TRUE, scales = "fixed", ncol = length(unique(modelCI$Model)),
  sort = c("natural", "normal", "magnitude", "size", "alphabetical"),
  decreasing = FALSE, names = NULL, numeric = FALSE, fillColor = "grey",
  alpha = 1/2, horizontal = FALSE, factors = NULL, only = NULL,
  shorten = TRUE, intercept = TRUE, interceptName = "(Intercept)",
  coefficients = NULL, predictors = NULL, strict = FALSE,
  newNames = NULL, plot = TRUE, drop = FALSE, by = c("Coefficient",
  "Model"), plot.shapes = FALSE, plot.linetypes = FALSE,
  legend.position = c("right", "left", "bottom", "top", "none"),
  secret.weapon = FALSE, legend.reverse = FALSE)
```

**Arguments**

title	The name of the plot, if NULL then no name is given
xlab	The x label
ylab	The y label
innerCI	How wide the inner confidence interval should be, normally 1 standard deviation. If 0, then there will be no inner confidence interval.
outerCI	How wide the outer confidence interval should be, normally 2 standard deviations. If 0, then there will be no outer confidence interval.
lwdInner	The thickness of the inner confidence interval
lwdOuter	The thickness of the outer confidence interval
pointSize	Size of coefficient point
dodgeHeight	Amount of vertical dodging
color	The color of the points and lines
shape	The shape of the points
linetype	The type of line drawn for the standard errors
cex	The text size multiplier, currently not used
textAngle	The angle for the coefficient labels, 0 is horizontal

numberAngle	The angle for the value labels, 0 is horizontal
zeroColor	The color of the line indicating 0
zeroLWD	The thickness of the 0 line
zeroType	The type of 0 line, 0 will mean no line
single	logical; If TRUE there will be one plot with the points and bars stacked, otherwise the models will be displayed in separate facets
scales	The way the axes should be treated in a faceted plot. Can be c("fixed", "free", "free_x", "free_y")
ncol	The number of columns that the models should be plotted in
sort	Determines the sort order of the coefficients. Possible values are c("natural", "magnitude", "alphabetical")
decreasing	logical; Whether the coefficients should be ascending or descending
names	Names for models, if NULL then they will be named after their inputs
numeric	logical; If true and factors has exactly one value, then it is displayed in a horizontal graph with continuous confidence bounds.
fillColor	The color of the confidence bounds for a numeric factor
alpha	The transparency level of the numeric factor's confidence bound
horizontal	logical; If the plot should be displayed horizontally
factors	Vector of factor variables that will be the only ones shown
only	logical; If factors has a value this determines how interactions are treated. True means just that variable will be shown and not its interactions. False means interactions will be included.
shorten	logical or character; If FALSE then coefficients for factor levels will include their variable name. If TRUE coefficients for factor levels will be stripped of their variable names. If a character vector of variables only coefficients for factor levels associated with those variables will the variable names stripped.
intercept	logical; Whether the Intercept coefficient should be plotted
interceptName	Specifies name of intercept if case it is not the default of "(Intercept)".
coefficients	A character vector specifying which factor coefficients to keep. It will keep all levels and any interactions, even if those are not listed.
predictors	A character vector specifying which coefficients to keep. Each individual coefficient can be specified. Use predictors to specify entire factors
strict	If TRUE then predictors will only be matched to its own coefficients, not its interactions
newNames	Named character vector of new names for coefficients
plot	logical; If the plot should be drawn, if false then a data.frame of the values will be returned
drop	logical; if TRUE then models without valid coefficients to show will not be plotted

by	If "Coefficient" then anormal multiplot is plotted, if "Model" then the coefficients are plotted along the axis with one for each model. If plotting by model only one coefficient at a time can be selected. This is called the secret weapon by Andy Gelman.
plot.shapes	If TRUE points will have different shapes for different models
plot.linetypes	If TRUE lines will have different shapes for different models
legend.position	position of legend, one of "left", "right", "bottom", "top", "none"
secret.weapon	If this is TRUE and exactly one coefficient is listed in coefficients then Andy Gelman's secret weapon is plotted.
legend.reverse	Setting to reverse the legend in a multiplot so that it matches the order they are drawn in the plot
...	Models to be plotted

### Details

Plots a graph similar to [coefplot](#) but for multiple plots at once.

For now, if names is provided the plots will appear in alphabetical order of the names. This will be adjusted in future iterations. When setting by to "Model" and specifying exactly one variable in variables that one coefficient will be plotted repeatedly with the axis labeled by model. This is Andy Gelman's secret weapon.

### Value

A ggplot object

### See Also

[link{coefplot}](#)

### Examples

```
data(diamonds)
model1 <- lm(price ~ carat + cut, data=diamonds)
model2 <- lm(price ~ carat + cut + color, data=diamonds)
model3 <- lm(price ~ carat + color, data=diamonds)
multiplot(model1, model2, model3)
multiplot(model1, model2, model3, single=FALSE)
multiplot(model1, model2, model3, plot=FALSE)
require(reshape2)
data(tips, package="reshape2")
mod1 <- lm(tip ~ total_bill + sex, data=tips)
mod2 <- lm(tip ~ total_bill * sex, data=tips)
mod3 <- lm(tip ~ total_bill * sex * day, data=tips)
mod7 <- lm(tip ~ total_bill + day + time, data=tips)
multiplot(mod1, mod2, mod3, mod7, single=FALSE, scales="free_x")
multiplot(mod1, mod2, mod3, mod7, single=FALSE, scales="free_x")
multiplot(mod1, mod2, mod3, mod7, single=FALSE, scales="free_x", plot.shapes=TRUE)
```

```

multiplot(mod1, mod2, mod3, mod7, single=TRUE, scales="free_x",
plot.shapes=TRUE, plot.linetypes=TRUE)
multiplot(mod1, mod2, mod3, mod7, single=TRUE, scales="free_x",
plot.shapes=FALSE, plot.linetypes=TRUE, legend.position="bottom")
# the secret weapon
multiplot(mod1, mod2, mod3, mod7, coefficients="total_bill", secret.weapon=TRUE)
# horizontal secret weapon
multiplot(mod1, mod2, mod3, mod7, coefficients="total_bill", by="Model", horizontal=FALSE)

```

---

position\_dodgev      *Adjust position by dodging overlaps to the side.*

---

## Description

Adjust position by dodging overlaps to the side.

## Usage

```
position_dodgev(height = NULL)
```

## Arguments

**height**      Dodging height, when different to the height of the individual elements. This is useful when you want to align narrow geoms with wider geoms. See the examples for a use case.

## Examples

```

ggplot(mtcars, aes(factor(cyl), fill = factor(vs))) +
  geom_bar(position = "dodge")

ggplot(diamonds, aes(price, fill = cut)) +
  geom_histogram(position="dodge")
# see ?geom_boxplot and ?geom_bar for more examples

# To dodge items with different heights, you need to be explicit
df <- data.frame(x=c("a","a","b","b"), y=2:5, g = rep(1:2, 2))
p <- ggplot(df, aes(x, y, group = g)) +
  geom_bar(
    stat = "identity", position = "dodge",
    fill = "grey50", colour = "black"
  )
p

# A line range has no height:
p + geom_linerange(aes(ymin = y-1, ymax = y+1), position = "dodge")
# You need to explicitly specify the height for dodging
p + geom_linerange(aes(ymin = y-1, ymax = y+1),

```

```
position = position_dodge(height = 0.9))

# Similarly with error bars:
p + geom_errorbar(aes(ymin = y-1, ymax = y+1), height = 0.2,
  position = "dodge")
p + geom_errorbar(aes(ymin = y-1, ymax = y+1, height = 0.2),
  position = position_dodge(height = 0.90))
```

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