The oddsratios package

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This package computes odds-ratios (point estimates plus confidence intervals) based on the coefficients and standard errors obtained from logit estimation. Binary and ordered logit are supported; multinomial logit is not supported at this point.

Odds-ratios are obtained by exponentiating the logit coefficients; to get confidence intervals we take the exponentials of the estimated coefficient plus and minus the z-score associated with the given confidence level times the estimated standard error.

The package offers three public functions. The most basic is `oddsratios_matrix()`, which takes the following arguments:

name	*type*	*comment*	*default value*
cf	matrix	logit coefficients	–
se	matrix	associated standard errors	–
alpha	scalar	α, governs coverage	0.05

This function returns a $k \times 3$ matrix, where k is the (common) number of elements in *cf* and *se*. The columns hold, respectively, the estimated odds ratio and the lower and upper bounds of a confidence interval with nominal coverage of $100 \times (1 - \alpha)$ percent.

Note that if you are using this function following estimation of a logit model that includes a constant you will probably want to omit the constant from the analysis. Since gretl always places the constant first in the coefficient vector, a suitable call would look like the following:

```
logit ...
matrix OR = oddsratios_matrix($coeff[2:], $stderr[2:], 0.05)
print OR
```

It would be OK to omit the third argument here, to accept the default of $\alpha = 0.05$.

Alternatively, the function `oddsratios()` produces a bundle, and by default prints nicely formatted output. The arguments to this function are:

name	*type*	*comment*	*default value*
cf	matrix	logit coefficients	–
se	matrix	associated standard errors	–
alpha	scalar	α, governs coverage	0.05
depvar	string	name of dependent variable	–
Xlist	list	list of regressors	–
silent	boolean	suppress printout?	0 (false)

This function is designed such that you can supply all the substantive arguments via accessor variables following estimation of a logit model. For example,

```
include oddsratios.gfn
open mroz87.gdt --quiet
```

```
list X = const KL6 K618 WA WE HA
logit LFP X
oddsratios($coeff, $stderr, 0.05, $depvar, $xlist)
```

Unlike `oddsratios_matrix()`, this function uses the model's `$xlist` to skip the constant automatically, if present.

In the invocation above, the bundle return-value is discarded and the results are printed. If one wanted to save the bundle for further processing and skip the printout, one could do

```
bundle b = oddsratios($coeff, $stderr, 0.05, $depvar, $xlist, 1)
```

The bundle returned by `oddsratios()` contains four members:

`or`	matrix	as produced by `oddsratios_matrix()`
`depvar`	string	name of dependent variable
`vnames`	array of strings	names associated with coefficients
`alpha`	scalar	α

The third public function simply serves to print the content of a bundle produced by `oddsratios()`:

```
# assuming bundle b was produced by oddsratios
oddsratios_print(&b)
```

Note that the bundle is passed to `oddsratios_print()` in "pointer" form.