Package ‘fitCTVARMx’

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Title Fit The Continuous-Time Vector Autoregressive Model

Version 0.0.0.9000

Description Fit the continuous-time vector autoregressive model using the 'OpenMx' package.

URL https://github.com/jeksterslab/fitCTVARMx,
https://jeksterslab.github.io/fitCTVARMx/

BugReports https://github.com/jeksterslab/fitCTVARMx/issues

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Encoding UTF-8

Roxygen list(markdown = TRUE)

VignetteBuilder knitr

Depends R (>= 3.0.0), OpenMx

Imports stats

Suggests knitr, rmarkdown, testthat, simStateSpace

RoxygenNote 7.3.2

NeedsCompilation no

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Contents

coef.fitctvaridmx *Parameter Estimates*

Description

Parameter Estimates

Usage

```
## S3 method for class 'fitctvaridmx'
coef(object, sigma = FALSE, theta = FALSE, ...)
```

Arguments

`object`	Object of class `fitctvaridmx`.
`sigma`	Logical. If `sigma = TRUE`, include estimates of the `sigma` matrix. If `sigma = FALSE`, exclude estimates of the `sigma` matrix.
`theta`	Logical. If `theta = TRUE`, include estimates of the `theta` matrix if available. If `theta = FALSE`, exclude estimates of the `theta` matrix.
`...`	additional arguments.

Value

Returns a list of vectors of parameter estimates.

Author(s)

Ivan Jacob Agaloos Pesigan

FitCTVARIDMx *Fit First Order Continuous-Time Vector Autoregressive Model by ID*

Description

Fit First Order Continuous-Time Vector Autoregressive Model by ID

Usage

```
FitCTVARIDMx(
  data,
  observed,
  id,
  time,
  phi_start = NULL,
  phi_lbound = NULL,
```

```
    phi_ubound = NULL,
    sigma_diag = TRUE,
    sigma_start = NULL,
    sigma_lbound = NULL,
    sigma_ubound = NULL,
    theta_fixed = TRUE,
    theta_start = NULL,
    theta_lbound = NULL,
    theta_ubound = NULL,
    mu0_fixed = TRUE,
    mu0_start = NULL,
    mu0_lbound = NULL,
    mu0_ubound = NULL,
    sigma0_fixed = TRUE,
    sigma0_diag = TRUE,
    sigma0_start = NULL,
    sigma0_lbound = NULL,
    sigma0_ubound = NULL,
    try = 1000,
    ncores = NULL
)
```

Arguments

data	Data frame. A data frame object of data for potentially multiple subjects that contain a column of subject ID numbers (i.e., an ID variable), and at least one column of observed values.
observed	Character vector. A vector of character strings of the names of the observed variables in the data.
id	Character string. A character string of the name of the ID variable in the data.
time	Character string. A character string of the name of the TIME variable in the data.
phi_start	Numeric matrix. Optional starting values for phi.
phi_lbound	Numeric matrix. Optional lower bound for phi.
phi_ubound	Numeric matrix. Optional upper bound for phi.
sigma_diag	Logical. If sigma_diag = TRUE, sigma is a diagonal matrix.
sigma_start	Numeric matrix. Optional starting values for sigma.
sigma_lbound	Numeric matrix. Optional lower bound for sigma.
sigma_ubound	Optional upper bound for sigma.
theta_fixed	Logical. If theta_fixed = TRUE, the measurement error matrix theta is fixed to zero. If theta_fixed = FALSE, estimate the diagonal measurement error matrix theta.
theta_start	Optional starting values for theta. Ignored if theta_fixed = TRUE.
theta_lbound	Optional lower bound for theta. Ignored if theta_fixed = TRUE.
theta_ubound	Optional upper bound for theta. Ignored if theta_fixed = TRUE.

mu0_fixed	Logical. If mu0_fixed = TRUE, initial mean vector mu0 is fixed. If mu0_fixed = FALSE, initial mean vector mu0 is estimated.
mu0_start	Optional starting values for mu0. If mu0_fixed = TRUE, mu0_start will be used as fixed values. If mu0_fixed = FALSE, mu0_start will be used as starting values.
mu0_lbound	Optional lower bound for mu0. Ignored if mu0_fixed = TRUE.
mu0_ubound	Optional upper bound for mu0. Ignored if mu0_fixed = TRUE.
sigma0_fixed	Logical. If sigma0_fixed = TRUE, initial mean vector sigma0 is fixed. If sigma0_fixed = FALSE, initial mean vector sigma0 is estimated.
sigma0_diag	Logical. If sigma0_diag = TRUE, sigma0 is a diagonal matrix.
sigma0_start	Optional starting values for sigma0. If sigma0_fixed = TRUE, sigma0_start will be used as fixed values. If sigma0_fixed = FALSE, sigma0_start will be used as starting values.
sigma0_lbound	Optional lower bound for sigma0. Ignored if sigma0_fixed = TRUE.
sigma0_ubound	Optional upper bound for sigma0. Ignored if sigma0_fixed = TRUE.
try	Positive integer. Number of extra tries for OpenMx::mxTryHard().
ncores	Positive integer. Number of cores to use.

Author(s)

Ivan Jacob Agaloos Pesigan

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print.fitctvaridmx *Print Method for Object of Class* fitctvaridmx

---

Description

Print Method for Object of Class fitctvaridmx

Usage

```
## S3 method for class 'fitctvaridmx'
print(x, means = TRUE, ...)
```

Arguments

x	an object of class fitctvaridmx.
means	Logical. If means = TRUE, return means. Otherwise, the function returns raw estimates.
...	further arguments.

Author(s)

Ivan Jacob Agaloos Pesigan

summary.fitctvaridmx — *Summary Method for Object of Class* `fitctvaridmx`

Description

Summary Method for Object of Class `fitctvaridmx`

Usage

```
## S3 method for class 'fitctvaridmx'
summary(object, means = TRUE, ...)
```

Arguments

`object`	an object of class `fitctvaridmx`.
`means`	Logical. If `means = TRUE`, return means. Otherwise, the function returns raw estimates.
`...`	further arguments.

Author(s)

Ivan Jacob Agaloos Pesigan

vcov.fitctvaridmx — *Sampling Covariance Matrix of the Parameter Estimates*

Description

Sampling Covariance Matrix of the Parameter Estimates

Usage

```
## S3 method for class 'fitctvaridmx'
vcov(object, sigma = FALSE, theta = FALSE, ...)
```

Arguments

`object`	Object of class `fitctvaridmx`.
`sigma`	Logical. If `sigma = TRUE`, include estimates of the `sigma` matrix. If `sigma = FALSE`, exclude estimates of the `sigma` matrix.
`theta`	Logical. If `theta = TRUE`, include estimates of the `theta` matrix if available. If `theta = FALSE`, exclude estimates of the `theta` matrix.
`...`	additional arguments.

Value

Returns a list of sampling variance-covariance matrices.

Author(s)

Ivan Jacob Agaloos Pesigan

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