Package 'fitDTVARMx'

July 6, 2024

Title Fit The Discrete-Time Vector Autoregressive Model

Version 0.0.0.9000

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

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

BugReports https://github.com/jeksterslab/fitDTVARMx/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.fitdtvaridmx` *Parameter Estimates*

Description

Parameter Estimates

Usage

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

Arguments

`object`	Object of class `fitdtvaridmx`.
`psi`	Logical. If `psi = TRUE`, include estimates of the `psi` matrix. If `psi = FALSE`, exclude estimates of the `psi` 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

`FitDTVARIDMx` *Fit First Order Discrete-Time Vector Autoregressive Model by ID*

Description

Fit First Order Discrete-Time Vector Autoregressive Model by ID

Usage

```
FitDTVARIDMx(
  data,
  observed,
  id,
  beta_start = NULL,
  beta_lbound = NULL,
  beta_ubound = NULL,
```

```
  psi_diag = TRUE,
  psi_start = NULL,
  psi_lbound = NULL,
  psi_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.
beta_start	Numeric matrix. Optional starting values for beta.
beta_lbound	Numeric matrix. Optional lower bound for beta.
beta_ubound	Numeric matrix. Optional upper bound for beta.
psi_diag	Logical. If psi_diag = TRUE, psi is a diagonal matrix.
psi_start	Numeric matrix. Optional starting values for psi.
psi_lbound	Numeric matrix. Optional lower bound for psi.
psi_ubound	Optional upper bound for psi.
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.fitdtvaridmx *Print Method for Object of Class* fitdtvaridmx

---

Description

Print Method for Object of Class fitdtvaridmx

Usage

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

Arguments

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

Author(s)

Ivan Jacob Agaloos Pesigan

summary.fitdtvaridmx *Summary Method for Object of Class* fitdtvaridmx

Description

Summary Method for Object of Class fitdtvaridmx

Usage

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

Arguments

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

Author(s)

Ivan Jacob Agaloos Pesigan

vcov.fitdtvaridmx *Sampling Covariance Matrix of the Parameter Estimates*

Description

Sampling Covariance Matrix of the Parameter Estimates

Usage

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

Arguments

object	Object of class fitdtvaridmx.
psi	Logical. If psi = TRUE, include estimates of the psi matrix. If psi = FALSE, exclude estimates of the psi 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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