Package: leontief (via r-universe)

October 29, 2026

Type Package

Title Input-Output Analysis

Version 0.5

Description An implementation of the Input-Output model developed by Wassily Leontief that represents the interdependencies between different sectors of a national economy or different regional economies.

License Apache License (>= 2)

Suggests knitr, rmarkdown, covr, roxygen2, testthat

VignetteBuilder knitr

LazyData true

Depends R (>= 2.10)

URL https://github.com/pachadotdev/leontief

BugReports https://github.com/pachadotdev/leontief/issues

Encoding UTF-8

RoxygenNote 7.3.3

LinkingTo cpp4r, armadillo4r

NeedsCompilation yes

Author Mauricio Vargas [aut, cre] (ORCID: <https://orcid.org/0000-0003-1017-7574>), Victor Falkenheim [ths], Central Bank of Chile [dtc], University of Bio-Bio [dtc]

Maintainer Mauricio Vargas <m.vargas.sepulveda@gmail.com>

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Contents

augmented_input_requirement . . . 2
backward_linkage . . . 3
employment_matrix . . . 3
employment_multiplier . . . 4
employment_number . . . 4
equilibrium_output . . . 5
forward_linkage . . . 5
income_multiplier . . . 6
input_requirement . . . 6
leontief_inverse . . . 7
multiplier_product_matrix . . . 7
output_allocation . . . 8
output_multiplier . . . 8
power_dispersion . . . 9
power_dispersion_cv . . . 9
sensitivity_dispersion . . . 9
sensitivity_dispersion_cv . . . 10
transaction_matrix . . . 10
wage_demand_matrix . . . 11

Index **12**

`augmented_input_requirement`
Augmented input requirement

Description

Augmented input requirement

Usage

```
augmented_input_requirement(X, w, c, d)
```

Arguments

`X`	transaction matrix
`w`	wage vector
`c`	household consumption vector
`d`	final demand vector

Examples

```
set.seed(200100)
X <- matrix(rnorm(100), nrow = 10)
w <- rnorm(10)
c <- rnorm(10)
d <- rnorm(10)
augmented_input_requirement(X, w, c, d)
```

`backward_linkage` *Backward linkage*

Description

Backward linkage

Usage

```
backward_linkage(A)
```

Arguments

`A`	input requirement matrix

`employment_matrix` *Employment matrix (2013 data) This matrix contains the employed people by industry and the employment coefficient that is the number of people divided by the total final demand from the wage and demand matrix.*

Description

Employment matrix (2013 data) This matrix contains the employed people by industry and the employment coefficient that is the number of people divided by the total final demand from the wage and demand matrix.

Usage

```
wage_demand_matrix
```

Format

A matrix with 12 rows and 2 columns

Author(s)

University of Bio-Bio, based on data from the National Bureau of Statistics

References

https://revistas.ubiobio.cl/index.php/HHEE/article/download/3441/3473/

`employment_multiplier` *Employment multiplier*

Description

Employment multiplier

Usage

```
employment_multiplier(L, e)
```

Arguments

`L`	Leontief inverse matrix
`e`	employment coefficients vector

`employment_number` *Employment number*

Description

Employment number

Usage

```
employment_number(L, e, c)
```

Arguments

`L`	Leontief inverse matrix
`e`	employment coefficients vector
`c`	change in final demand

equilibrium_output *Equilibrium output*

Description

Equilibrium output

Usage

```
equilibrium_output(L, d)
```

Arguments

L	Leontief inverse matrix
d	final demand vector

Examples

```
set.seed(200100)
L <- matrix(rnorm(100), nrow = 10)
d <- rnorm(10)
equilibrium_output(L, d)
```

forward_linkage *Forward linkage*

Description

Forward linkage

Usage

```
forward_linkage(A)
```

Arguments

A	input requirement matrix

income_multiplier *Income multiplier*

Description

Income multiplier

Usage

```
income_multiplier(L, w)
```

Arguments

L	Leontief inverse matrix
w	wage vector

input_requirement *Input requirement*

Description

Input requirement

Usage

```
input_requirement(X, d)
```

Arguments

X	transaction matrix
d	final demand vector

Examples

```
set.seed(200100)
X <- matrix(rnorm(100), nrow = 10)
d <- rnorm(10)
input_requirement(X, d)
```

leontief_inverse *Leontief inverse*

Description

Leontief inverse

Usage

```
leontief_inverse(A)
```

Arguments

A	input requirement matrix

Examples

```
set.seed(200100)
A <- matrix(rnorm(100), nrow = 10)
leontief_inverse(A)
```

multiplier_product_matrix *Multiplier product matrix*

Description

Multiplier product matrix

Usage

```
multiplier_product_matrix(L)
```

Arguments

L	Leontief inverse matrix

output_allocation *Output allocation*

Description

Output allocation

Usage

```
output_allocation(X, d)
```

Arguments

X	transaction matrix
d	final demand vector

Examples

```
set.seed(200100)
X <- matrix(rnorm(100), nrow = 10)
d <- rnorm(10)
output_allocation(X, d)
```

output_multiplier *Output multiplier*

Description

Output multiplier

Usage

```
output_multiplier(L)
```

Arguments

L	Leontief inverse matrix

Examples

```
set.seed(200100)
L <- matrix(rnorm(100), nrow = 10)
output_multiplier(L)
```

power_dispersion *Power of dispersion*

Description

Power of dispersion

Usage

```
power_dispersion(L)
```

Arguments

L	Leontief inverse matrix

power_dispersion_cv *Power of dispersion coefficient of variation*

Description

Power of dispersion coefficient of variation

Usage

```
power_dispersion_cv(L)
```

Arguments

L	Leontief inverse matrix

sensitivity_dispersion *Sensitivity of dispersion coefficient of variation*

Description

Sensitivity of dispersion coefficient of variation

Usage

```
sensitivity_dispersion(L)
```

Arguments

L	Leontief inverse matrix

`sensitivity_dispersion_cv` *Sensititivy of dispersion coefficient of variation*

Description

Sensititivy of dispersion coefficient of variation

Usage

```
sensitivity_dispersion_cv(L)
```

Arguments

`L`	Leontief inverse matrix

`transaction_matrix` *Transaction matrix (2013 data) This matrix contains the production of the chilean economy divided into 12 industries. The measuring unit is CLP million of the year 2013*

Description

Transaction matrix (2013 data) This matrix contains the production of the chilean economy divided into 12 industries. The measuring unit is CLP million of the year 2013

Usage

```
transaction_matrix
```

Format

A matrix with 12 rows and 12 columns

Author(s)

Central Bank of Chile

References

https://si3.bcentral.cl/estadisticas/Principal1/Excel/CCNN/cdr/excel.html

wage_demand_matrix	*Wage and demand matrix (2013 data) This matrix contains the wage, intermediate demand and disaggregated final demand of the chilean economy divided into 12 industries. The final demand is given by components (household consumption, government consumption, etc.) and aggregated. The measuring unit is CLP million of the year 2013.*

Description

Wage and demand matrix (2013 data) This matrix contains the wage, intermediate demand and disaggregated final demand of the chilean economy divided into 12 industries. The final demand is given by components (household consumption, government consumption, etc.) and aggregated. The measuring unit is CLP million of the year 2013.

Usage

```
wage_demand_matrix
```

Format

A matrix with 12 rows and 9 columns

Author(s)

Central Bank of Chile

References

https://si3.bcentral.cl/estadisticas/Principal1/Excel/CCNN/cdr/excel.html

Index

∗ **data**
employment_matrix, 3
transaction_matrix, 10
wage_demand_matrix, 11

augmented_input_requirement, 2

backward_linkage, 3

employment_matrix, 3
employment_multiplier, 4
employment_number, 4
equilibrium_output, 5

forward_linkage, 5

income_multiplier, 6
input_requirement, 6

leontief_inverse, 7

multiplier_product_matrix, 7

output_allocation, 8
output_multiplier, 8

power_dispersion, 9
power_dispersion_cv, 9

sensitivity_dispersion, 9
sensitivity_dispersion_cv, 10

transaction_matrix, 10

wage_demand_matrix, 11