Package ‘entrymodels’

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aux_matrix

Build our auxiliary matrices to estimate entry models

Description

Build our auxiliary matrices to estimate entry models

Usage

aux_matrix(data, y, N_max, n)

Arguments

data A data.frame object containing your data
y A string indicating the outcome variable
N_max An integer indicating the maximum number of competitors
n Number of observations in data

Value

A list of the auxiliary matrices

br1

Build our optimization function

Description

Build our optimization function

Usage

br1(params, n, N_max, l_params, A1, A2, S, N)

Arguments

params Parameters to construct function
n Number of observations in data
N_max An integer indicating the maximum number of competitors
l_params Length of parameters vector
A1 Auxiliary matrix A1
A2 Auxiliary matrix A2
S Size of the market
N Vector of zeros
Value

The function to be optimized

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**br2**  
*Build our optimization function*

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**Description**

Build our optimization function

**Usage**

```r
br2(params, n, N_max, A1, A2, S1, S2, N)
```

**Arguments**

- `params` : Parameters to construct function
- `n` : Number of observations in data
- `N_max` : An integer indicating the maximum number of competitors
- `A1` : Auxiliary matrix A1
- `A2` : Auxiliary matrix A2
- `S1` : First variable for size of the market
- `S2` : Second variable for size of the market
- `N` : Vector of zeros

Value

The function to be optimized

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**em_2var**  
*Two-Variable Entry Model*

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**Description**

Estimate entry model with two variables for the market size.

**Usage**

```r
em_2var(data, Sm1, Sm2, y, N_max = 5, alpha0 = rep(0.1, N_max),
         gamma0 = rep(1, N_max))
```
Arguments

data           A `data.frame` object containing your data
Sm1            A string indicating the main market size variable, present in data
Sm2            A string indicating the second market size variable, present in data
y              A string indicating the outcome variable, present in data
N_max          An integer indicating the maximum number of competitors. Defaults to 5.
alpha0         A vector of type `numeric` and length `N_max` indicating the initial condition for alpha. Defaults to a vector of 0.1's.
gamma0         A vector of type `numeric` and length `N_max` indicating the initial condition for gamma. Defaults to a vector of 1's.

Value

A tibble with critical market sizes and estimated parameters, as explained in Bresnahan and Reiss (1991)

Author(s)

Guilherme N. Jardim, Department of Economics, Pontifical Catholic University of Rio de Janeiro

References


Examples

tb <- data.frame(Sm1 = 1:5, Sm2 = 1:5, y = 1:5)

# estimate default model
em_n5 <- em_2var(tb, "Sm1", "Sm2", "y")

# estimate model with 3 competitors only
em_n3 <- em_2var(tb, "Sm1", "Sm2", "y", N_max = 3)

# estimate model with different initial conditions
em_difc <- em_2var(tb, "Sm1", "Sm2", "y", alpha0 = rep(0.2, 5), gamma0 = rep(1.1, 5))

## Not run:
tb <- load_example_data()
em <- em_2var(tb, "Populacao", "RendaPerCapita", "n_agencias")

## End(Not run)
em_basic

**Basic Entry Model**

**Description**

Estimate basic entry model with only one variable for the market size.

**Usage**

```r
em_basic(data, Sm, y, N_max = 5, alpha0 = rep(0.1, N_max), gamma0 = rep(1, N_max))
```

**Arguments**

- `data`: A `data.frame` object containing your data.
- `Sm`: A string indicating the market size variable, present in `data`.
- `y`: A string indicating the outcome variable, present in `data`.
- `N_max`: An integer indicating the maximum number of competitors. Defaults to 5.
- `alpha0`: A vector of type numeric and length `N_max` indicating the initial condition for `alpha`. Defaults to a vector of 0.1’s.
- `gamma0`: A vector of type numeric and length `N_max` indicating the initial condition for `gamma`. Defaults to a vector of 1’s.

**Value**

A tibble with critical market sizes and estimated parameters, as explained in Bresnahan and Reiss (1991)

**Author(s)**

Guilherme N. Jardim, Department of Economics, Pontifical Catholic University of Rio de Janeiro

**References**


**Examples**

```r
tb <- data.frame(Sm = 1:5, y = 1:5)

# estimate default model
em_n5 <- em_basic(tb, "Sm", "y")

# estimate model with 3 competitors only
em_n3 <- em_basic(tb, "Sm", "y", N_max = 3)
```
# estimate model with different initial conditions
em_difc <- em_basic(tb, "Sm", "y", alpha0 = rep(0.2, 5), gamma0 = rep(1.1, 5))

## Not run:
tb <- load_example_data()
em <- em_basic(tb, "Populacao", "n_agencias")
## End(Not run)

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**load_example_data**  
*Load example dataset*

**Description**

Load example dataset

**Usage**

load_example_data()

**Value**

Example dataset as tibble

**Author(s)**

Guilherme N. Jardim, Department of Economics, Pontifical Catholic University of Rio de Janeiro
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