Package ‘entrymodels’

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Type Package

Title Estimate Entry Models

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R topics documented:

aux_matrix ......................................................... 2
br1 ................................................................. 2
br2 ................................................................. 3
e_m_2var ......................................................... 3
e_m_basic ......................................................... 5
load_example_data ............................................ 6

Index 7
### aux_matrix

**Build our auxiliary matrices to estimate entry models**

**Description**

Build our auxiliary matrices to estimate entry models

**Usage**

```r
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**

```r
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

---

### 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

```r
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)

## Not run:
# estimate model with different initial conditions
em_difc <- em_2var(tb, "Sm1", "Sm2", "y", alpha0 = rep(0.2, 5), gamma0 = rep(1.1, 5))

# estimate model with example data
tb <- load_example_data()
em <- em_2var(tb, "Populacao", "RendaPerCapita", "n_agencias")

## End(Not run)
```
em_basic

\[\text{em_basic}(\text{data}, \text{Sm}, \text{y}, \text{N_max}=5, \text{alpha0}=\text{rep}(0.1, \text{N_max}), \text{gamma0}=\text{rep}(1, \text{N_max}))\]

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

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(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)
## load_example_data

Load example dataset

### Description

Load example dataset

### Usage

```r
load_example_data()
```

### Value

Example dataset as tibble

### Author(s)

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

aux_matrix, 2
br1, 2
br2, 3
em_2var, 3
em_basic, 5
load_example_data, 6