Package 'competitiontoolbox'

October 12, 2022

Type Package

Title A Graphical User Interface for Antitrust and Trade Practitioners

Version 0.7.1

Depends R (>= 2.10), antitrust (>= 0.99.11), trade (>= 0.5.4), shiny, rhandsontable

Imports ggplot2

Description
A graphical user interface for simulating the effects of mergers, tariffs, and quotas under an assortment of different economic models. The interface is powered by the 'Shiny' web application framework from 'RStudio'.

URL https://github.com/luciu5/competitiontoolbox

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Encoding UTF-8

LazyData true

RoxygenNote 7.2.1

NeedsCompilation no

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R topics documented:

`antitrust_shiny` *A Link to the Shiny Interface to the trade and antitrust Packages*

Description

Launch a shiny interface to simulate the effects of tariffs and mergers

Usage

```
antitrust_shiny()
```

Details

`antitrust_shiny` calls `ct_shiny`, which is a shiny interface for the `antitrust` and `trade` package. See `ct_shiny` for further details.

`ct_shiny` *A Shiny Interface to the trade and antitrust Packages*

Description

Launch a shiny interface to simulate the effects of tariffs and mergers

Usage

```
ct_shiny()
```

Details

`ct_shiny` launches a shiny interface for the `antitrust` and `trade` packages. The shiny interface provides users with the ability to calibrate model parameters and simulate tariff effects using many of the supply and demand models included in the `trade` package. It also provides users with the ability to calibrate different consumer demand systems and simulate the effects of mergers under different competitive regimes included in the `antitrust` package.

Author(s)

Charles Taragin, Paulette Wolak

Examples

```
if(interactive()){ct_shiny()}
```

`indicboxdata` *Box Plot Statistics for "Indices" Tab*

Description

A dataset containing the summary statistics necessary to make boxplots according to supply, demand, and percent of outside share for horizontal mergers. This allows for examination of the relationship between industry price changes and commonly used merger indices.

Usage

```
indicboxdata
```

Format

A data frame with 2,303 rows and 10 variables

Cut_type Firm Count, HHI, Delta HHI, UPP, CMCR, Harm 2nd, Party Gap

Cut_value axis units depending on Cut_type

shareOutThresh outside share threshold in percent (20–70)

Supply pooled, bertrand, cournot, auction

Demand pooled, log, logit, aids, ces, linear

high_wisk maximum

low_wisk minimum

pct25 25th percentile boxplot line

pct50 50th percentile boxplot line

pct75 75th percentile boxplot line

References

Taragin, C., & Loudermilk, M. (2019). Using measures of competitive harm for optimal screening of horizontal mergers. mimeo.doi:10.13140/RG.2.2.30872.85760/1.

indicboxmktCnt *Number of Monte Carlo Simulations Performed in "Indices" Tab*

Description

A dataset containing the information necessary to calculate the number of merger simulations used to generate the plots for the "Indices" tab of "Numerical Simulations" for Horizontal Mergers based on the index of interest.

Usage

```
indicboxmktCnt
```

Format

A data frame with 35 rows and 3 variables

Cut_type Firm Count, HHI, Delta HHI, UPP, CMCR, Harm 2nd, Party Gap

Cnt number of horizontal merger simulations (25,890 – 184,254)

shareOutThresh outside share threshold in percent (20–70)

References

Taragin, C., & Loudermilk, M. (2019). Using measures of competitive harm for optimal screening of horizontal mergers. mimeo.doi:10.13140/RG.2.2.30872.85760/1.

sumboxdata *Box Plot Statistics for "Summary" Tab for Horizontal Mergers*

Description

A dataset containing the summary statistics necessary to make boxplots according to supply, demand, and percent of outside share for horizontal mergers so as to examine the distribution of outcomes.

Usage

```
sumboxdata
```

Format

A data frame with 210 rows and 10 variables

Demand log, logit, aids, ces, linear

Model cournot:log, cournot: linear, bertrand:aids, bertrand:logit, bertrand:ces, auction:logit

Outcome post-Merger index of interest (Industry Price Change (percent), Merging Party Price Change (percent), Consumer Harm (dollars), Producer Benefit (dollars), Net Harm (dollars)

Supply bertrand, cournot, auction

high_wisk maximum

low_wisk minimum

pct25 25th percentile boxplot line

pct50 50th percentile boxplot line

pct75 75th percentile boxplot line

shareOutThresh outside share threshold in percent (20–70)

References

Taragin, C., & Loudermilk, M. (2019). Using measures of competitive harm for optimal screening of horizontal mergers. mimeo.doi:10.13140/RG.2.2.30872.85760/1.

`sumboxdata_trade` *Box Plot Statistics for "Summary" Tab for Tariffs*

Description

A dataset containing the summary statistics necessary to make boxplots according to supply, demand, and tariff percentage for tariffs so as to examine the distribution of outcomes.

Usage

```
sumboxdata_trade
```

Format

A data frame with 162 rows and 10 variables

Demand Linear, CES, Logit

Model Cournot:Linear, Bertrand:CES, Bertrand:Logit, Auction2nd:Logit, Bargaining:Logit, Monopolistic Competition:CES, Monopolistic Competition:Logit

Outcome Consumer Harm, Domestic Firm Benefit, Foreign Firm Harm, Industry Price Change, Net Domestic Harm, Net Total Harm, Domestic Firm Price Change, Foreign Firm Price Change

Supply Cournot, Bertrand, Auction2nd, Bargaining, Monopolistic Competition

high_wisk maximum

low_wisk minimum

pct25 25th percentile boxplot line

pct50 50th percentile boxplot line

pct75 75th percentile boxplot line

tariffThresh tariff threshold in percent (10–30)

References

Taragin, C., & Loudermilk, M. (2019). Using measures of competitive harm for optimal screening of horizontal mergers. mimeo.doi:10.13140/RG.2.2.30872.85760/1.

`sumboxmktCnt` *Number of Monte Carlo Simulations Performed in "Summary" Tab for Horizontal Mergers*

Description

A dataset containing the information necessary to calculate the number of merger simulations used to generate the plots for the Summary tab of Numerical Simulations for Horizontal Mergers.

Usage

```
sumboxmktCnt
```

Format

A data frame with 30 rows and 3 variables

Outcome post-Merger indice of interest (Industry Price Change (percent), Merging Party Price Change (percent), Consumer Harm (dollars), Producer Benefit (dollars), Net Harm (dollars)

Cnt number of horizontal merger simulations

shareOutThresh outside share threshold in percent (20–70)

References

Taragin, C., & Loudermilk, M. (2019). Using measures of competitive harm for optimal screening of horizontal mergers. mimeo.doi:10.13140/RG.2.2.30872.85760/1.

sumboxmktCnt_trade — *Number of Monte Carlo Simulations Performed in "Summary" Tab for Tariffs*

Description

A dataset containing the information necessary to calculate the number of tariffs used to generate the plots for the Summary tab of Numerical Simulations for Tariffs.

Usage

```
sumboxmktCnt_trade
```

Format

A data frame with 24 rows and 3 variables

Outcome Consumer Harm, Domestic Firm Benefit, Foreign Firm Harm, Industry Price Change, Net Domestic Harm, Net Total Harm, Domestic Firm Price Change, Foreign Firm Price Change

Cnt number of tariffs simulated

tariffThresh tariff threshold in percent (10–30)

References

Taragin, C., & Loudermilk, M. (2019). Using measures of competitive harm for optimal screening of horizontal mergers. mimeo.doi:10.13140/RG.2.2.30872.85760/1.

trade_shiny — *A Link to the Shiny Interface to the trade and antitrust Packages*

Description

Launch a shiny interface to simulate the effects of tariffs and mergers

Usage

```
trade_shiny()
```

Details

`trade_shiny` calls `ct_shiny`, which is a shiny interface for the `antitrust` and `trade` package. See `ct_shiny` for further details.

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