Package ‘cragg’

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cragg_donald

**Calculate the Cragg-Donald statistic for a given model.**

**Description**

Calculate the Cragg-Donald statistic for a given model.

**Usage**

cragg_donald(X, D, Z, data = data.frame())

**Arguments**

- **X** (formula). A one-sided formula of control variables.
- **D** (formula). A one-sided formula of endogenous variables (treatments)
- **Z** (formula). A one-sided formula of instruments
- **data** (dataframe). An optional dataframe, list, or environment containing the variables used in the model. As with many of the base R functions, if the variables are not found here, they may be searched for in the environment cragg_donald() was called.

**Value**

(cd_test) results object of class "cd_test"

**Examples**

# Obtain the Cragg-Donald statistic for a model that instruments
# Sepal Width on Petal Length, Petal Width, and Species, while controlling
# for Sepal.Length (a toy example).
cragg_donald(X=~Sepal.Length, D=~Sepal.Width,
Z=~Petal.Length + Petal.Width + Species, data = iris)

**stock_yogo_reccomender**

**Recommend a critical value for the Cragg-Donald test given a maximum allowable bias/size distortion**

**Description**

Recommend a critical value for the Cragg-Donald test given a maximum allowable bias/size distortion.

**Usage**

stock_yogo_reccomender(K, N, B, size_bias)
**Stock and Yogo Test**

Perform the Stock and Yogo test for weak instruments

Usage

```r
stock_yogo_test(X, D, Z, data, B = 0.05, size_bias = "bias")
```

Arguments

- `X` (formula). A one-sided formula of control variables.
- `D` (formula). A one-sided formula of endogenous variables (treatments)
- `Z` (formula). A one-sided formula of instruments
- `data` (dataframe). An optional dataframe, list, or environment containing the variables used in the model. As with many of the base R functions, if the variables are not found here, they may be searched for in the environment `cragg_donald()` was called.
- `B` One of `[.05, .1, .15, .2, .25, .3]`. The maximum size of allowable bias relative to the normal OLS or the maximum Wald test size distortion.
- `size_bias` Either "bias" or "size". Whether to use a critical value based on the maximum allowable bias relative to regular OLS (bias), or maximum Wald test size distortion (size).
Value

(sy_test) the results of the stock and yogo test.

Examples

#Perform the Stock and Yogo test on a model that instruments
#Sepal Width on Petal Length, Petal Width, and Species, while controlling
#for Sepal.Length (a toy example).

stock_yogo_test(X=~Sepal.Length, D=~Sepal.Width,
Z=~Petal.Length + Petal.Width + Species,
size_bias="bias", data = iris)
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