ARDL.flex (data.input = df.now, y = "Movement", max.p = 3, max.q = 3, write.output = FALSE, path.output = "ARDL-output.Rds", by.var = "Country")

## Description

ARDL.flex estimates ARDL(p,q) models flexibly, and automates model selection based on a variety of statistical criteria and in line with good econometric practice.

In its current form, it estimates models of different lag lengths specified with *max.p* and *max.q* and selects based on the Bayesian Information Criterion (BIC) among those models that pass the Breush-Godfrey test for serial autocorrelation in the error term; it is designed to carry out this operation for any number of units, e.g. countries or cities (specified using *by.var*).

It returns a list with the following objects:

summary A data.frame summarising for each observational unit the model chosen, the underlying criteria, and key parameters (e.g. long run coefficient).

bic A list of matrices collecting the BIC for all considered models for each country.

bg.test A list of matrices collecting the p-value of the Breush-Godfrey test for all considered models for each country

model The selected model for each country (ardlDlm object)

## Arguments

Red = still currently hard-coded.

|  |  |
| --- | --- |
| data.input | The data.frame to be used for estimation.  Note: The function doesn’t do the differencing of the data, this needs to be done beforehand.  See test-ARDL\_fun.R for functional code chunk to prepare data. |
| depvar | Dependent variable |
| indepvar | Independent variable(s) |
| impulsevar | The independent variable for which long-run responses etc. shall be computed. By default corresponds to the first element of indepvar, but can be altered. |
| max.p | Maximum number of lags to be considered for the independent variable (at least 1). |
| max.p | Maximum number of (autoregressive) lags to be considered for the dependent variable (at least 1). |
| write.output | Logical indication whether or not to save key results in separate dataset. |
| path.output | If write.output == TRUE, where to save it. |
| by.var | Which variable determines the observational unit in data.input? E.g., Country or City. |

## Next features

* Seasonality
  + Centered seasonal variable ; double check conventions
* Store LR coeffs for competing models as well (matrix like bg, bic)