Modelos Empíricos - Tese Bruna B.

Importando as bibliotecas

```
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.4.0     v purrr   1.0.1
## v tibble  3.1.8     v dplyr   1.1.0
## v tidyr   1.3.0     v stringr 1.5.0
## v readr   2.1.3     v forcats 1.0.0
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(lfe)
```

```
## Carregando pacotes exigidos: Matrix
##
## Attaching package: 'Matrix'
##
## The following objects are masked from 'package:tidyr':
##
##     expand, pack, unpack
```

```
library(stargazer)
```

```
##
## Please cite as:
##
##  Hlavac, Marek (2022). stargazer: Well-Formatted Regression and Summary Statistics Tables.
##  R package version 5.2.3. https://CRAN.R-project.org/package=stargazer
```

```
library(plm)
```

```
##
## Attaching package: 'plm'
##
## The following object is masked from 'package:lfe':
##
##     sargan
##
## The following objects are masked from 'package:dplyr':
##
##     between, lag, lead
```

Leitura e tratamento do dataframe

```
df_cross_border <- as_tibble(read.csv(file = "./datasets/df-bis-claims-cross-border-tese.csv"))

df_cross_border$year_quarter <- tsibble::yearquarter(df_cross_border$year_quarter)

df_cross_border <-
  df_cross_border %>%
  mutate(year = lubridate::year(year_quarter))

df_cross_border <-
  df_cross_border %>%
  rename(
    mapC = map_cumulative,
    mapC_credit = map_credit_cumulative,
    mapC_capital = map_capital_cumulative,
    mapC_liquidity = map_liquidity_cumulative,
    Wmap = weighted_map,
    Wmap_credit = weighted_credit_map,
    Wmap_capital = weighted_capital_map,
    Wmap_liquidity = weighted_liquidity_map,
    WmapC = weighted_cumulative_map,
    WmapC_credit = weighted_cumulative_credit_map,
    WmapC_capital = weighted_cumulative_capital_map,
    WmapC_liquidity = weighted_cumulative_liquidity_map
  )
```

Criação dos dataframe para EAs e EMDEs

```
df_cross_border_ae <-
  df_cross_border %>%
  filter(AE == 1)

df_cross_border_emde <-
  df_cross_border %>%
  filter(AE == 0)
```

Modelos 1 a 4

```
model_1 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ map + log(gdp_dollar2015) + credit_gdp_gap + log(exchange_rate)
  )

model_2 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ mapC +  log(gdp_dollar2015) + credit_gdp_gap + log(exchange_rat
```

```r
  )

model_3 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ Wmap + log(gdp_dollar2015) + credit_gdp_gap + log(exchange_rate
  )

model_4 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ WmapC +  log(gdp_dollar2015) + credit_gdp_gap + log(exchange_ra
  )


stargazer(model_1, model_2, model_3, model_4, type = "text", align = TRUE, dep.var.labels = c("log Inte
```

```
##
## ===================================================================
##                                        Dependent variable:
##                                 -----------------------------------
##                                    log International Claims
##                                   (1)      (2)      (3)      (4)
## -------------------------------------------------------------------
## map                             -0.098**
##                                 (0.043)
##
## mapC                                     -0.041***
##                                           (0.014)
##
## Wmap                                               -0.071**
##                                                    (0.028)
##
## WmapC                                                      -0.035***
##                                                             (0.009)
##
## log(gdp_dollar2015)              0.155    0.377**   0.148    0.358*
##                                 (0.180)   (0.189)  (0.180)   (0.182)
##
## credit_gdp_gap                  0.005*** 0.006***  0.005*** 0.006***
##                                 (0.001)   (0.001)  (0.001)   (0.001)
##
## log(exchange_rate)               0.201     0.173    0.196     0.196
##                                 (0.232)   (0.231)  (0.231)   (0.229)
##
## regulatory_quality_estimate     0.347*** 0.380***  0.359*** 0.437***
##                                 (0.124)   (0.125)  (0.124)   (0.126)
##
## -------------------------------------------------------------------
## Observations                      431       431      431       431
## R2                               0.972     0.972    0.972     0.973
## Adjusted R2                      0.968     0.968    0.968     0.969
## Residual Std. Error (df = 377)   0.299     0.298    0.299     0.296
## ===================================================================
## Note:                                    *p<0.1; **p<0.05; ***p<0.01
```

Modelos 5 a 8

```r
model_5 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ map_credit + map_capital + map_liquidity + log(gdp_dollar2015) +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

model_6 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ mapC_credit + mapC_capital + mapC_liquidity + log(gdp_dollar2015
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

model_7 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ Wmap_credit + Wmap_capital + Wmap_liquidity + log(gdp_dollar2015
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

model_8 <- felm(
  data = df_cross_border,
  formula = log(international_claims) ~ WmapC_credit + WmapC_capital + WmapC_liquidity + log(gdp_dollar2
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )


stargazer(model_5, model_6, model_7, model_8,  type = "text")
```

```
##
## ====================================================================
##                                          Dependent variable:
##                                   ------------------------------------
##                                       log(international_claims)
##                                     (1)       (2)      (3)       (4)
## --------------------------------------------------------------------
## map_credit                         -0.009
##                                   (0.044)
##
## map_capital                       -0.087*
##                                   (0.050)
##
## map_liquidity                      -0.063
##                                   (0.058)
##
## mapC_credit                                  0.014
##                                             (0.019)
##
## mapC_capital                               -0.115***
##                                             (0.021)
##
## mapC_liquidity                             0.074***
```

```
##                                          (0.021)
##
## Wmap_credit                                          -0.001
##                                                     (0.029)
##
## Wmap_capital                                        -0.068**
##                                                     (0.032)
##
## Wmap_liquidity                                      -0.068*
##                                                     (0.039)
##
## WmapC_credit                                                    0.011
##                                                                (0.012)
##
## WmapC_capital                                                 -0.072***
##                                                                (0.014)
##
## WmapC_liquidity                                                0.025*
##                                                                (0.014)
##
## log(gdp_dollar2015)              0.158    0.359*    0.104    0.321*
##                                 (0.185)   (0.198)  (0.185)   (0.187)
##
## credit_gdp_gap                 0.006*** 0.006***  0.006*** 0.006***
##                                 (0.001)   (0.001)  (0.001)   (0.001)
##
## log(exchange_rate)               0.242     0.279    0.271    0.386*
##                                 (0.233)   (0.224)  (0.233)   (0.227)
##
## regulatory_quality_estimate    0.353***  0.280**  0.388*** 0.338***
##                                 (0.125)   (0.120)  (0.126)   (0.123)
##
## ------------------------------------------------------------------------
## Observations                      431       431      431       431
## R2                               0.972     0.974    0.972     0.974
## Adjusted R2                      0.968     0.971    0.968     0.970
## Residual Std. Error (df = 375)   0.300     0.288    0.299     0.290
## ========================================================================
## Note:                                    *p<0.1; **p<0.05; ***p<0.01
```

Modelos 9 a 16

```
m9 <- felm(
  data = df_cross_border_ae,
  formula = log(international_claims) ~ map + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

m10 <- felm(
  data = df_cross_border_emde,
  formula = log(international_claims) ~ map + log(gdp_dollar2015) + credit_gdp_gap +
```

```r
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

m11 <- felm(
  data = df_cross_border_ae,
  formula = log(international_claims) ~ mapC + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | factor(country) + factor(year)
  )

m12 <- felm(
  data = df_cross_border_emde,
  formula = log(international_claims) ~ mapC +  log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

m13 <- felm(
  data = df_cross_border_ae,
  formula = log(international_claims) ~ map_credit + map_capital + map_liquidity + log(gdp_dollar2015) +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

m14 <- felm(
  data = df_cross_border_emde,
  formula = log(international_claims) ~ map_credit + map_capital + map_liquidity + log(gdp_dollar2015) +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

m15 <- felm(
  data = df_cross_border_ae,
  formula = log(international_claims) ~ mapC_credit + mapC_capital + mapC_liquidity + log(gdp_dollar2015
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

m16 <- felm(
  data = df_cross_border_emde,
  formula = log(international_claims) ~ mapC_credit + mapC_capital + mapC_liquidity + log(gdp_dollar2015
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

stargazer::stargazer(m9, m10, m11, m12, m13, m14, m15, m16,  type = "text")
```

```
##
## ===================================================================================================
##                                                                                         Dependent variabl
##                               ---------------------------------------------------------------------
##                                                                                      log(international_cl
##                                     (1)              (2)              (3)              (4)
## ---------------------------------------------------------------------------------------------------
## map                               -0.060            0.062
##                                   (0.054)          (0.057)
##
## mapC                                                                 0.006           -0.070***
##                                                                     (0.020)           (0.017)
```

```
##
## map_credit                                                                                         0
##                                                                                                   (0
##
## map_capital                                                                                        -
##                                                                                                   (0
##
## map_liquidity                                                                                      0
##                                                                                                   (0
##
## mapC_credit
##
##
## mapC_capital
##
##
## mapC_liquidity
##
##
## log(gdp_dollar2015)              -0.454*         0.998**        -0.501*         1.021***        -0
##                                  (0.262)         (0.425)        (0.277)         (0.382)         (0
##
## credit_gdp_gap                   0.003**         0.022***       0.003**         0.017***        0.
##                                  (0.001)         (0.004)        (0.001)         (0.004)         (0
##
## log(exchange_rate)                0.414          1.914***        0.446          1.023**          0
##                                  (0.289)         (0.428)        (0.289)         (0.427)         (0
##
## regulatory_quality_estimate      0.711***       -1.019***        0.714***       -0.380           0.
##                                  (0.149)         (0.302)        (0.150)         (0.299)         (0
##
## ----------------------------------------------------------------------------------------------------
## Observations                       327             104            327             104
## R2                                0.948           0.964          0.948           0.971            0
## Adjusted R2                       0.940           0.950          0.940           0.958            0
## Residual Std. Error           0.306 (df = 283) 0.207 (df = 73) 0.307 (df = 283) 0.189 (df = 73) 0.307
## ====================================================================================================
## Note:
```

Modelos 17 a 20

```
model_17 <- felm(
  data = df_cross_border,
  formula = log(international_loans_deposits) ~ map_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

model_18 <- felm(
  data = df_cross_border,
  formula = log(international_loans_deposits) ~ mapC_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
```

```
  )

model_19 <- felm(
  data = df_cross_border,
  formula = log(international_loans_deposits) ~ Wmap_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

model_20 <- felm(
  data = df_cross_border,
  formula = log(international_loans_deposits) ~  WmapC_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year)
  )

stargazer(model_17, model_18, model_19, model_20, type = "text")
```

```
##
## ===============================================================================================
##                                                        Dependent variable:
##                                -----------------------------------------------------------------
##                                                 log(international_loans_deposits)
##                                      (1)              (2)              (3)              (4)
## -----------------------------------------------------------------------------------------------
## map_credit                         0.036
##                                   (0.043)
##
## mapC_credit                                         0.023
##                                                    (0.019)
##
## Wmap_credit                                                          0.028
##                                                                     (0.030)
##
## WmapC_credit                                                                          0.020
##                                                                                      (0.012)
##
## log(gdp_dollar2015)               0.949***         0.891***         0.932***         0.872***
##                                   (0.178)          (0.184)          (0.179)          (0.184)
##
## credit_gdp_gap                    0.003***         0.003***         0.003***         0.003***
##                                   (0.001)          (0.001)          (0.001)          (0.001)
##
## log(exchange_rate)                 0.004            0.023            0.001            0.017
##                                   (0.230)          (0.231)          (0.232)          (0.231)
##
## regulatory_quality_estimate       0.323***         0.314**          0.324***         0.304**
##                                   (0.123)          (0.123)          (0.124)          (0.125)
##
## -----------------------------------------------------------------------------------------------
## Observations                        436              436              427              427
## R2                                 0.972            0.972            0.972            0.972
## Adjusted R2                        0.968            0.968            0.968            0.968
## Residual Std. Error          0.299 (df = 383) 0.299 (df = 383) 0.299 (df = 374) 0.299 (df = 374)
## ===============================================================================================
```

```
## Note:                                                    *p<0.1; **p<0.05; ***p<0.01
```

Modelos 21 a 24

```r
model_21 <- felm(
  data = df_cross_border_ae,
  formula = log(international_loans_deposits) ~ map_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year_quarter)
  )

model_22 <- felm(
  data = df_cross_border_emde,
  formula = log(international_loans_deposits) ~ map_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year_quarter)
  )

model_23 <- felm(
  data = df_cross_border_ae,
  formula = log(international_loans_deposits) ~ mapC_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year_quarter)
  )

model_24 <- felm(
  data = df_cross_border_emde,
  formula = log(international_loans_deposits) ~ mapC_credit + log(gdp_dollar2015) + credit_gdp_gap +
    log(exchange_rate) + regulatory_quality_estimate | country + factor(year_quarter)
  )

stargazer(model_21, model_22, model_23, model_24, type = "text")
```

```
##
## ===============================================================================================
##                                                    Dependent variable:
##                               -----------------------------------------------------------------
##                                            log(international_loans_deposits)
##                                     (1)              (2)             (3)              (4)
## -----------------------------------------------------------------------------------------------
## map_credit                        0.093*           0.125*
##                                  (0.056)          (0.070)
##
## mapC_credit                                                       0.073***        -0.101***
##                                                                   (0.022)          (0.034)
##
## log(gdp_dollar2015)              0.539**          1.140**          0.405           1.579***
##                                  (0.263)          (0.472)         (0.264)          (0.476)
##
## credit_gdp_gap                    0.002           0.012**          0.001           0.016***
##                                  (0.001)          (0.005)         (0.001)          (0.005)
##
## log(exchange_rate)                0.197           1.293***         0.249            1.009**
##                                  (0.287)          (0.482)         (0.283)          (0.469)
```

```
##
## regulatory_quality_estimate     0.637***        -0.740**         0.603***         -0.560*
##                                 (0.148)          (0.337)         (0.147)          (0.329)
##
## ------------------------------------------------------------------------------------------
## Observations                      333              103             333              103
## R2                                0.950            0.955           0.951            0.958
## Adjusted R2                       0.942            0.937           0.944            0.941
## Residual Std. Error         0.306 (df = 289) 0.238 (df = 73) 0.302 (df = 289) 0.230 (df = 73)
## ==========================================================================================
## Note:                                                                 *p<0.1; **p<0.05; ***p<0.01
```