Homework Metrics 2b: Federal Reserve's interest rates and global outstanding credit. A univariate and multivariates analysis

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```r
knitr::opts_chunk$set(
  echo = TRUE,
  warning = FALSE,
  message = FALSE
)
```

```r
flatten_countries <- function(file_path) {
  # Read the sheet and skip the header row
  df <- read_excel(file_path, sheet = 3, skip = 1)

  # Rename first column
  colnames(df)[1] <- "Category"
  df <- df[c(1:20),]
  # Tag levels based on pattern rules
  df <- df %>%
    mutate(
      Level0 = ifelse(grepl("Borrowers outside", Category), Category, NA),
      Level1 = ifelse(grepl("^Of which:", Category), Category, NA),
      Level2 = ifelse(grepl("^Africa and Middle East|^Emerging Asia and Pacific|^Emerging Europe|^Latin
      Level3 = ifelse(is.na(Level0) & is.na(Level1), Category, NA)
    ) %>%
    fill(Level0, Level1, Level2, .direction = "down") %>%
    select(Level0, Level1, Level2, everything())  # Keep hierarchy + data

  return(df)
}


flatten_instruments <- function(file_path) {
  dt <- read_excel(file_path, sheet = 3, skip = 1)
  colnames(dt)[1] <- "Category"
  dt <- dt[21:32, ]  # Adjust to the actual instrument section

  dt <- dt %>%
    mutate(
      Level0 = ifelse(grepl("By instrument|Memo: Borrowers in United States", Category), Category, NA),
      Level1 = ifelse(grepl("Borrowers outside United States|Of which: emerging market and developing e
      Level2 = ifelse(grepl("Bank loans|Debt securities issues|Of which: government|Of which: emerging m
    fill(Level0, Level1, Level2, .direction = "down") %>%
    select(Level0, Level1, Level2 , everything())
dt <- dt[-c(1,10),]
```

```
  return(dt)
}
data <- flatten_instruments("2.xlsx")
View(data)
```

```
merged_data_countries <- flatten_countries("2.xlsx")
for (i in 3:34){
  data <- flatten_countries(paste0(i, ".xlsx"))
  merged_data_countries <- merge(merged_data_countries, data, by = c("Level0", "Level1", "Level2", "Leve
}
merged_data_countries <- merged_data_countries %>%
  clean_names() %>%
  select(-matches("(_5|_6|_7)")) %>%
  rename_with(~ sub("^x", "", .x)) %>%
  rename_with(~ sub("(_2$|_3$|_4$)", "", .x))
View(merged_data_countries)

merged_data_instruments <- flatten_instruments("2.xlsx")
for (i in 3:34){
  data <- flatten_instruments(paste0(i, ".xlsx"))
  merged_data_instruments <- merge(merged_data_instruments, data, by =  c("Level0", "Level1", "Level2",
}
merged_data_instruments <- merged_data_instruments %>%
  clean_names() %>%
  select(-matches("(_5|_6|_7)")) %>%
  rename_with(~ sub("^x", "", .x)) %>%
  rename_with(~ sub("(_2$|_3$|_4$)", "", .x))
View(merged_data_instruments)

FED <- read.csv("FEDFUNDS.csv")
View(FED)
```