Quantitative Risk

Financial and Data Quality Toolkit

**Function Name**

f\_all\_data\_wide

**Package**

GTquantrisk

**Description**

This function transforms wide data to long data and groups by the "symbol" (corporate tickers) column. To be used when initial financial data is long and want to transform it into wide data frame, of easy use in R. This function is later used in f\_binded\_data().

**Usage**

f\_all\_data\_wide(t\_input)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| t\_input | Long financial data frame. | NA |

**Function Name**

f\_binded\_data

**Package**

GTquantrisk

**Description**

The function gets the lag of a data frame in R and binds the original factors with the lagged factors. For the Financial toolkit it column binds the outputs from f\_all\_data\_wide() and f\_lagged\_df(), so as to calculate trend ratios i.e – Net Margin Trend, Average Assets, EBITDA Trend etc.

**Usage**

f\_binded\_data(t\_input)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| t\_input | Data frame with financial information. | t\_input <- t\_financial\_data\_before\_lag |

**Function Name**

f\_borrowers

**Package**

GTquantrisk

**Description**

Extracts list of borrowers from initial set of financial data to be used for data frames consistently throughout the Financial Tool. Returns a vector of the borrowers (i.e. companies) in alphabetical order to be binded onto final data frames.

**Usage**

f\_borrowers(data)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| data | The Dataset, ie a Data frame. | data <- t\_financial\_data |

**Function Name**

f\_columns

**Package**

GTquantrisk

**Description**

Creates the names to be used for the final data frame. Uses the ratio names from the t\_definitions data frame and also includes "symbol" & "date". Returns a vector of the column names to be used for the final data frame.

**Usage**

f\_columns(data = t\_definitions)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| data | The Dataset, ie a Data frame, the default is set to t\_definitions, contained in the package. | data <- t\_definitions |

**Function Name**

f\_lagged\_df

**Package**

GTquantrisk

**Description**

This function lags the financial data to the previous year’s values and joins these values on to the original data frame. This is done in order to calculate trend ratios. Returns the original data frame passed through it along with the lagged figures of that data frame.

**Usage**

f\_lagged\_df(t\_input)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| t\_input | Data frame of financial figures that you wish to be lagged by one year and amalgamated to the original data frame. | t\_input <-  t\_financial\_data |

**Function Name**

f\_last\_year

**Package**

GTquantrisk

**Description**

Compute a lagged version of a time series, shifting the time base back by one year. Returns a time series object with the same class as x with lagged variables.

**Usage**

f\_last\_year(x)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| x | A vector or matrix or univariate or multivariate time series. | x <- t\_financial data |

**Function Name**

f\_outliers

**Package**

GTquantrisk

**Description**

Extracts outliers per each financial ratio for use in Outlier Analysis tab of the Financial Tool shinyApp. Allows user to view the observations (companies / borrowers) considered as outliers. Returns a data frame with the rows that are considered outliers.

**Usage**

f\_outliers(dataframe)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| dataframe | A Dataset i.e. a data frame, from which the outliers are mapped per each financial ratio. Preferably it will be the data frame produced by f\_reshape as the ratios are subsetted by type. | dataframe <-  f\_reshape(t\_financial\_data) |

**Function Name**

f\_ratio

**Package**

GTquantrisk

**Description**

This function takes a data frame containing all the financial information, and uses these figures to calculate financial ratios and then adds these ratios to an empty data frame (built by f\_t\_ratio\_build() function) to produce a data frame of all the possible financial ratios.

**Usage**

f\_ratio(df1, df2)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| df1 | Empty data frame built in f\_t\_ratio\_build() with column names labelled as all the financial ratios. | df1 <-  f\_t\_ratio\_build(data1,  data2 = t\_definitions) |
| df2 | Dataframe built in f\_lagged\_df() containing all the financial figures as well as the lagged figures. | df2 <-  f\_lagged\_df(t\_financial\_data) |

**Function Name**

f\_remove\_wrong

**Package**

GTquantrisk

**Description**

Loops through each company’s financial data, calculates the median per each value and removes values that are 50 times larger than the median value. Returns a data frame with values deemed incorrect (50 times larger than median value) as NA.

**Usage**

f\_remove\_wrong(t\_input)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| t\_input | The Dataset, ie a data frame | t\_input <- t\_financial\_data |

**Function Name**

f\_reshape

**Package**

GTquantrisk

**Description**

Transforms wide data frame produced by f\_ratio into a long data frame. Adds the type of financial ratio as a column which allows for sub setting of ratio by the type also makes it easy to navigate through multiple line ggplot calls used throughout the shinyapp. Returns a long data frame with each ratio value as a row.

**Usage**

f\_reshape(data1, data2 = t\_definitions)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| data1 | A Dataset to be used. This will be the dataset that is produced by f\_ratio. This dataset will be made longer. | data1 <-  f\_ratio(df1, df2) |
| data2 | A Dataset to be used. This dataset will be the one with the names of the financial ratios and their type. The default is set to t\_definitions. | data2 <-  d\_definitions |

**Function Name**

f\_t\_ratio\_build

**Package**

GTquantrisk

**Description**

This function creates a blank data frame with correct row and structure (column & row names & numbers etc.) to be used in the f\_ratio function also contained in the package. Returns an empty data frame.

**Usage**

f\_t\_ratio\_build(data1, data2 = t\_definitions)

**Arguments**

|  |  |  |
| --- | --- | --- |
| Label | Description | Example |
| data1 | The first Dataset to be used. The names of the rows (borrowers) to be used for final data frame. | data1 = t\_financial\_data |
| data2 = t\_definitions | The second Dataset to be used. The names of the columns (ratios along with symbol & date) to be used for the final data frame. The default is set to the data frame t\_definitions, contained in the package. | data2 = t\_definitions |