

The fEcofin Package

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Title Ecofin - Selected Economic and Financial Data Sets

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Depends R (>= 2.0.0), methods

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Description Environment for teaching “Financial Engineering and Computational Finance”

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MarketStatistics *CIA Factbook*

Description

A collection and description of functions to extract financial and economic market statistics from the data available in the CIA World Factbook and from the exchange data collected by the World Federation of Stock Exchanges.

The functions are:

<code>ciaCountries</code>	Returns a list of CIA country codes,
<code>ciaIndicators</code>	Returns a list of CIA indicator codes,
<code>ciaByCountry</code>	Returns all Indicators by country,
<code>ciaByIndicator</code>	Returns for all countries indicator ranking.

To load statistics from the WFE:

```

data(wfe1)  Market capitalization of domestic companies,
data(wfe2)  Total number of companies with shares listed,
data(wfe3)  Total value of share trading,
data(wfe4)  Market value of bonds listed,
data(wfe5)  Total value of bond trading, and
data(wfe6)  Price earning ratio an gross dividend yield.

```

Usage

```

ciaCountries()
ciaIndicators()

ciaByCountry(code = "CH", from = FALSE, names = FALSE, details = FALSE)
ciaByIndicator(code = 2001, from = FALSE, details = FALSE)

## S3 method for class 'ciaCountries':
print(x, ...)
## S3 method for class 'ciaIndicators':
print(x, ...)

```

Arguments

code	[ciaByCountry] - a character string denoting the country code. [ciaByIndicator] - a character string or integer denoting the indicator code.
details	a logical flag. Should details be printed? By default FALSE.
from	a logical flag. If set to TRUE an additional column will be returned with the information when the data were recorded.
names	a logical flag. If set to TRUE" then the full names of the countries will be returned in an additional column
x	x an object of class <code>ciaCountries</code> or <code>ciaIndicators</code> as returned by the functions <code>ciaCountry</code> or <code>ciaIndicator</code> , respectively.
...	arguments to be past to the <code>print</code> method.

Details

Financial and economic market statistics can be found at several web pages for free. The "OECD Factbook" from the 'Organisation for Economic Co-operation and Development', www.oecd.org, "The World Factbook" from the 'Central Intelligence Agency' of the US, www.cia.gov, and the "Penn World Tables" from the 'Center for International Comparisons' at University of Pennsylvania, pwt.econ.upenn.edu, offer sources of economic, environmental and social indicators for the world's core economies.

Statistical data from the exchanges around the world can be obtained from the 'World Federation of Stock Exchanges', www.fbv.com.

Further sources of statistical data can be found on the web pages of the 'Bank for International Settlement', www.bis.org, and on the web pages of the 'International Monetary Fund', www.imf.org.

Value

`ciaCountries`
returns a data frame with countries and contry codes.

`ciaIndicators`
returns a data frame with indicator codes.

`ciaByCountry`
returns a data frame with indicators by country.

`ciaByIndicator`
returns a data frame with ranked data for a given indicator.

Author(s)

Diethelm Wuertz for the Rmetrics R-port.

References

CIA, 2004, *CIA Factbook 2004*, <http://www.cia.gov/cia/publications/factbook>.

WFE, 2004, *World Federation of Stock Exchanges, Focus 2004*, <http://www.world-exchanges.org>.

Examples

```
## SOURCE("fBasics.1A-MarketStatistics")

## Pie Chart from CIA Oil Production Indicator (Code 2173):
# Search for Code:
ciaIndicators()
# Create Pie Chart:
OilProduction = as.integer(as.vector(ciaByIndicator(2173)[2:11, 2]))
names(OilProduction) = as.vector(ciaByIndicator(2173)[2:11,1])
OilProduction
pie(OilProduction,col = rainbow(10))
title(main = "Oil Production 2004\n bbl/day")
mtext("Source: CIA World Factbook", side = 1)

## Barplot from WFE Capitalization Statistics:
# Extract Capitalization of/at:
# NYSE: 7, Tokyo: 37, London: 22, Frankfurt: 15
# 1991 - 2003 triannual: 3,6,9,12,15
data(wfe1)
Table =t(wfe1[c(7,37,22,15),c(3,6,9,12,15)])/1e6
colnames(Table) = c("NewYork", "Tokyo", "London", "Frankfurt")
rownames(Table) = as.character(seq(1991, 2003, by = 3))
Table
# Create Barplot:
barplot(Table, beside = TRUE, legend = rownames(Table),
  col = c("lightblue", "mistyrose", "lightcyan", "lavender", "cornsilk"))
title(main = "Stock Market Capitalization\n 1991 - 2003")
mtext("Source: World Federation of Exchanges", side = 4,
  line = -2, cex = 0.7)
```

Description

A collection and description of data sets used in example of the Rmetrics packages.

CPI.dat
IP.dat

The file "IP.dat.csv" contains data representing seasonally adjusted US Industrial Production Index and the file "CPI.dat.csv" contains data representing seasonally adjusted US Consumer Price Index.

dem2gbp

The file "dem2gbp.csv" contains daily observations of the Deutschmark / British Pound foreign exchange log returns. This data set has been promoted as an informal benchmark for GARCH time-series software validation. See McCullough and Renfro [1991], and Brooks, Burke, and Persaud (2001) for details. The nominal returns are expressed in percent, as published in Bollerslev and Ghysels (2001). The data set is available from the *Journal of Business and Economic Statistics*, (JBES), <ftp://www.amstat.org>. A text file has one column of data listing the percentual log-returns of the DEM/GBP exchange rates. The sample period is from January 3, 1984, to December 31, 1991, for a total of 1975 daily observations of FX exchange rates.

DowJones30

The file "DowJones30.csv" contains daily observations from January 2, 1991 to January 2, 2001, of the 30 constituents of the Dow Jones Index. Each of the thirty columns represents the closing price of a stock in the "Dow Jones Industrial Average".

ford.s
hp.s

The files "ford.s.csv" and "hp.s.csv" contain data representing 2000 daily stock returns for the Ford and HP shares traded at NYSE. The time series span the period from February 2, 1984, to December 31, 1991.

klein

The file "klein.csv" contains data for Klein's (1950) simple econometric model of the US economy. The Klein data frame has 22 rows and 10 columns:

This data frame contains the following columns: year years 1921-1941, represented in the POSIX data format %Y-%m-%d,

- c the consumption,
- p the private profits,
- wp the private wages,
- i the investment,
- k.lag the capital stock, lagged one year,
- x the equilibrium demand,
- wg the government wages,
- g the government non-wage spending,

tax indirect business taxes and net exports.

Source: Greene (1993)

kmenta

The file "kmenta.csv" contains partly contrived data from Kmenta (1986), constructed to illustrate estimation of a simultaneous-equation model. The data set has 20 rows and 6 columns, where the first holds the ISO-8601 formatted date as "%Y-%m-%d": The remaining columns are:

q food consumption per capita,

p ratio of food prices to general consumer prices,

d disposable income in constant dollars,

f ratio of preceding year's prices received by farmers to general consumer prices,

a time in years (numbered from 1 to 20).

The exogenous variables d, f, and a are based on real data; the endogenous variables p and q were generated by simulation.

msft.dat

The file "msft.dat.csv" contains daily stock prices and volumes for the the Microsoft covering the period from 2000-09-27 until 2001-09-27. The first column lists dates in the format code "%Y-%m-%d", the next four columns Open, High, Low, and Close Prices, and the final column volumes.

nelsonplosser

The file "nelsonplotter.csv" contains the data set listing fourteen US economic time series used by Nelson and Plosser in their seminal paper. The time series are:

"%Y%m%d" - Date index from 18601231 until 19701231,

"gnp.r" - Real GNP, [Billions of 1958 Dollars], [1909 - 1970],

"gnp.n" - Nominal GNP, [Millions of Current Dollars], [1909 - 1970],

"gnp.pc" - Real Per Capita GNP, [1958 Dollars], [1909 - 1970],

"ip" - Industrial Production Index, [1967 = 100], [1860 - 1970],

"emp" - Total Employment, [Thousands], [1890 - 1970],

"ur" - Total Unemployment Rate, [Percent], [1890 - 1970],

"gnp.p" - GNP Deflator, [1958 = 100], [1889 - 1970],

"cpi" - Consumer Price Index, [1967 = 100], [1860 - 1970],

"wg.n" - Nominal Wages, [current Dollars], [1900 - 1970],

"wg.r" - Real Wages, [Nominal wages/CPI], [1900 - 1970],

"M" - Money Stock (M2), [Billions of Dollars, annual averages], [1889 - 1970],

"vel" - Velocity of Money, [1869 - 1970],

"bnd" - Basic Bond Yields of 30-year Corporate Bonds, [Percent per annum], [1900 - 1970],

"sp" - Stock Prices, [Index; 1941 - 43 = 100], [1871 - 1970].

nyse

The file "nyse.csv" archives a two-column dataset, the first contains the date in the format "%Y-%m-%d" and the second daily records of the NYSE Composite Index.

recession

The file "recession.csv" holds the data set used in the regression analysis of US recession. The data include short and long term interest rates from the US, the 3 Month Tbills data from US FED, the 10 Year Tbons data from US FED, and also the Stock-Watson experimental recession index.

shiller.dat

shiller.annual

The files "shiller.dat.csv" and "shiller.annual.csv" hold data used in the book "Irrational Exuberance" by Robert Shiller. The data are `price` - monthly nominal US SP stock market prices, `dividend` - nominal SP Composite Index dividends, `earnings` - nominal SP Composite Index earnings, `cpi` - US Consumer Price Indexes, `real.price` - real US stock market prices, `real.dividend` - real SP Composite Index dividends, `real.earnings` - real SP Composite Index earnings, `pe.10` - price-earnings ratios, `dp.ratio` - dividend-price ratios, `dp.yield` - dividend-price yield. The last two are only listed in `shiller.annual`. The series start January 1871 and end on March 2001.

`singleIndex.dat`

The file "recession.csv" holds monthly index and price data records from January 1990 to January 2001. Included are monthly closing prices for Microsoft Corporation (MSFT) and SP500 Index (SP500).

`sp500dge`

`sp500index`

The first file "sp500index.csv" lists daily SP500 index values. The data cover the period January 1995 until December 1999, and have 1249 observations. The first column of the file lists dates, and the second column lists index values. The second file "sp500dge.csv" lists daily returns from the SP500 as used in the paper of Ding, Granger and Engle.

`surex1.ts.dat`

The file "surex1.ts.csv" contains exchange rate spot returns and forward premium data as used in the article of E. Zivot (2000).

`yhoo.df`

The file "yhoo.df.csv" contains data representing daily transaction information of Yahoo stock, with the following six columns: Date, Open, High, Low, Close, Volume.

Format

All files are in CSV Excel spreadsheet format. The delimiter is a semicolon.

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