Package 'dmai'

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Type Package

Title Divisia Monetary Aggregates Index

Version 0.5.0

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Description Functions to calculate Divisia monetary aggregates index as given in Barnett, W. A. (1980) (<DOI:10.1016/0304-4076(80)90070-6>).

Depends R (>= 3.1)

Imports dplyr, magrittr, ggplot2, stringr, tibble, tidyr

License GPL-2

URL https://github.com/myaseen208/dmai/, https://myaseen208.com/dmai/

Encoding UTF-8

RoxygenNote 7.3.1

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Suggests testthat

NeedsCompilation no

Repository CRAN

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Contents

dmai *Divisia Monetary Aggregates Index*

Description

Calculates Divisia monetary aggregates index as given in Barnett, W. A. (1980).

Usage

```
## Default S3 method:
dmai(.data, method = c("Barnett", "Hancock"), logbase = NULL)
```

Arguments

.data	data.frame
method	Method to calculate Divisia monetary aggregates index, Barnett or Hancock
logbase	base of log to be used in Barnett divisia monetary aggregates index method, default is NULL or 10

Value

Divisia Monetary Aggregates Index

Author(s)

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2. Ahmad Nadeem (<Ahmed.Nadeem@sbp.org.pk>)

References

Barnett, W. A. (1980). Economic Monetary Aggregates: An Application of Aggregation and Index Number Theory. *Journal of Econometrics*. **14**(1):11-48. (https://www.sciencedirect.com/science/article/pii/03044076809007

Examples

```
Data <-
  tibble::tibble(
   Date = paste(c("Jun", "Dec"), rep(seq(from = 2000, to = 2017, by = 1), each = 2), sep = "-")
  , x1    = runif(n = 36, min = 162324, max = 2880189)
  , x2    = runif(n = 36, min = 2116,   max =   14542)
  , x3    = runif(n = 36, min = 92989,  max = 3019556)
  , x4    = runif(n = 36, min = 205155, max = 4088784)
  , x5    = runif(n = 36, min = 6082,   max =  186686)
  , x6    = runif(n = 36, min = 11501,  max =   50677)
  , x7    = runif(n = 36, min = 61888,  max =  901419)
  , x8    = runif(n = 36, min = 13394,  max =  347020)
  , x9    = runif(n = 36, min = 25722,  max =  701887)
  , x10   = runif(n = 36, min = 6414,   max =   37859)
```

```
  , x11   = runif(n = 36, min = 11688,  max =  113865)
  , x12   = runif(n = 36, min = 2311,   max =   23130)
  , x13   = runif(n = 36, min = 23955,  max =  161318)
  , r1    = runif(n = 36, min = 0.00,   max =  0.00)
  , r2    = runif(n = 36, min = 0.00,   max = 0.00)
  , r3    = runif(n = 36, min = 0.00,   max = 0.00)
  , r4    = runif(n = 36, min = 0.93,   max = 7.43)
  , r5    = runif(n = 36, min = 1.12,   max = 7.00)
  , r6    = runif(n = 36, min = 0.99,   max = 7.93)
  , r7    = runif(n = 36, min = 1.51,   max = 7.42)
  , r8    = runif(n = 36, min = 2.20,   max = 9.15)
  , r9    = runif(n = 36, min = 2.64,   max = 9.37)
  , r10   = runif(n = 36, min = 2.80,   max = 11.34)
  , r11   = runif(n = 36, min = 3.01,   max = 12.41)
  , r12   = runif(n = 36, min = 2.78,   max = 13.68)
  , r13   = runif(n = 36, min = 3.23,   max = 14.96)
  )

Data$Date <- as.Date(paste("01", Data$Date, sep = "-"), format = "%d-%b-%Y")
Data

# Divisia monetary aggregates index using Barnett method
DMAIBarnett <- dmai(.data = Data, method = "Barnett", logbase = NULL)
DMAIBarnett
DMAIBarnett1 <- dmai(.data = Data, method = "Barnett", logbase = 10)
DMAIBarnett1
DMAIBarnett2 <- dmai(.data = Data, method = "Barnett", logbase = 2)
DMAIBarnett2
DMAIBarnett3 <- dmai(.data = Data, method = "Barnett", logbase = exp(1))
DMAIBarnett3

# Divisia monetary aggregates index using Hancock method
DMAIHancock <- dmai(.data = Data, method = "Hancock")
DMAIHancock

library(ggplot2)
ggplot(data = DMAIBarnett, mapping = aes(x = Date, y = DMAI)) +
  geom_point() +
  geom_line() +
  geom_text(aes(label = round(DMAI, 2)), vjust = "inward", hjust = "inward") +
  scale_x_date(
               date_breaks = "6 months"
             , date_labels = "%b-%Y"
             , limits = c(min(DMAIBarnett$Date), max = max(DMAIBarnett$Date))) +
  theme_bw() +
  theme(axis.text.x  = element_text(angle = 90))

ggplot(data = DMAIHancock, mapping = aes(x = Date, y = DMAI)) +
  geom_point() +
  geom_line() +
  geom_text(aes(label = round(DMAI, 2)), vjust = "inward", hjust = "inward") +
  scale_x_date(
               date_breaks = "6 months"
```

```
            , date_labels = "%b-%Y"
            , limits = c(min(DMAIHancock$Date), max = max(DMAIHancock$Date))) +
theme_bw() +
theme(axis.text.x  = element_text(angle = 90))
```

`dmaiIntro` *Divisia Monetary Aggregates Index*

Description

The `dmai` package provides functionalities to calculate Divisia monetary aggregates index as given in Barnett, W. A. (1980).

Author(s)

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References

Barnett, W. A. (1980). Economic Monetary Aggregates: An Application of Aggregation and Index Number Theory. *Journal of Econometrics*. **14**(1):11-48. (https://www.sciencedirect.com/science/article/pii/03044076809007

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