

# Package: dmai (via r-universe)

August 20, 2024

**Type** Package

**Title** Divisia Monetary Aggregates Index

**Version** 0.5.0

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**Maintainer** Muhammad Yaseen <myaseen208@gmail.com>

**Description** Functions to calculate Divisia monetary aggregates index as given in Barnett, W. A. (1980) (<[DOI:10.1016/0304-4076\(80\)90070-6](https://doi.org/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

**LazyData** true

**RoxygenNote** 7.3.1

**Note** School of Mathematical and Statistical Sciences, Clemson University, Clemson, South Carolina, USA.

**Suggests** testthat

**Repository** <https://myaseen208.r-universe.dev>

**RemoteUrl** <https://github.com/myaseen208/dmai>

**RemoteRef** HEAD

**RemoteSha** ac5d3df83d700f460d05acbe18e410447f97fc62

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 dmai

*Divisia Monetary Aggregates Index*


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### 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)

1. Muhammad Yaseen (<myaseen208@gmail.com>)
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))
```

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dmaiIntro

*Divisia Monetary Aggregates Index*

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### **Description**

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

### **Author(s)**

1. Muhammad Yaseen (<myaseen208@gmail.com>)
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>)

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