

# Package ‘fpp’

January 27, 2015

**Title** Data for “Forecasting: principles and practice”

**Description** All data sets required for the examples and exercises in the book “Forecasting: principles and practice” by Rob J Hyndman and George Athanasopoulos. All packages required to run the examples are also loaded.

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**LazyLoad** yes

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fpp-package	<i>Data for "Forecasting: principles and practice"</i>
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## Description

All data sets required for the examples and exercises in the book "Forecasting: principles and practice" by Rob J Hyndman and George Athanasopoulos.

## Details

Package:	fpp
Type:	Package
License:	GPL2
LazyLoad:	yes

## Author(s)

Rob J Hyndman

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## See Also

[forecast](#) package

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a10	<i>Monthly anti-diabetic drug sales in Australia from 1992 to 2008.</i>
-----	---

---

**Description**

Total monthly scripts for pharmaceutical products falling under ATC code A10, as recorded by the Australian Health Insurance Commission.

**Usage**

```
data(a10)
```

**Format**

Monthly time series of class `ts`.

**Source**

Medicare Australia

**Examples**

```
plot(a10)  
seasonplot(a10)
```

---

ausair	<i>Air Transport Passengers Australia</i>
--------	---

---

**Description**

Total annual air passengers including domestic and international aircraft passengers of air carriers registered in Australia. 1970-2009.

**Usage**

```
data(ausair)
```

**Format**

Annual time series of class `ts`.

**Source**

World Bank. [data.is/x5KiE0](https://data.is/x5KiE0)

**Examples**

```
plot(ausair)
```

---

ausbeer                      *Quarterly Australian Beer production*

---

**Description**

Total quarterly beer production in Australia (in megalitres) from 1956:Q1 to 2008:Q3.

**Usage**

```
data(ausbeer)
```

**Format**

Quarterly time series of class `ts`.

**Source**

Australian Bureau of Statistics. Cat. 8301.0.55.001.

**Examples**

```
data(ausbeer)
seasonplot(ausbeer)
```

---

austa                      *International visitors to Australia*

---

**Description**

Total international visitors to Australia. 1980-2010. (millions)

**Usage**

```
data(austa)
```

**Format**

Annual time series of class `ts`.

**Source**

International Visitor Survey, Tourism Research Australia.

**Examples**

```
plot(austa)
```

---

austourists	<i>International Tourists to Australia: Total visitor nights.</i>
-------------	---

---

**Description**

Quarterly visitor nights spent by international tourists to Australia. 1999-2010.

**Usage**

```
data(austourists)
```

**Format**

Annual time series of class `ts`.

**Source**

Tourism Research Australia.

**Examples**

```
plot(austourists)
```

---

cafe	<i>Quarterly expenditure on eating out in Australia</i>
------	---

---

**Description**

The total quarterly expenditure on cafes, restaurants and takeaway food services in Australia (1982:Q2-2010:Q4)

**Usage**

```
data(cafe)
```

**Format**

Annual time series of class `ts`.

**Source**

Australian Bureau of Statistics. Catalogue No. 8501.0

**Examples**

```
plot(cafe)
```

---

credit

*Credit ratings on personal loans from an Australian bank.*

---

**Description**

A random sample of 500 observations of customers applying for personal loans at an Australian bank. All customers were 25 years old or under.

**Usage**

```
data(credit)
```

**Format**

A data frame with 500 observations on the following 7 variables.

score a numeric vector giving the credit scores calculated by the bank on a scale from 0 to 100.

savings a numeric vector giving the total personal savings of each customer (in thousands of \$).

income a numeric vector giving the total net income of each customer (in thousands of \$).

fte TRUE if the customer has full time employment, and FALSE otherwise.

single TRUE if the customer is single, and FALSE otherwise.

time.address a numeric vector giving the number of months each customer has lived at their current address.

time.employed a numeric vector giving the number of months each customer has been with their current employer.

**Examples**

```
data(credit)
```

---

debitcards

*Retail debit card usage in Iceland.*

---

**Description**

Retail debit card usage in Iceland (million ISK).

**Usage**

```
data(debitcards)
```

**Format**

Annual time series of class ts.

**Source**

Statistics Iceland. <http://data.is/HFzL69>

**Examples**

```
plot(debitcards)
```

---

departures

*Total monthly departures from Australia*

---

**Description**

Overseas departures from Australia: permanent departures, long-term (more than one year) residents departing, long-term (more than one year) visitors departing, short-term (less than one year) residents departing and short-term (less than one year) visitors departing.

**Usage**

```
data(departures)
```

**Format**

Multiple monthly time series of class `mts` containing the following series:

`permanent` a monthly time series of the permanent departures from Australia.

`reslong` a monthly time series of the long-term resident departures from Australia.

`vislong` a monthly time series of the long-term visitor departures from Australia.

`resshort` a monthly time series of the short-term resident departures from Australia.

`visshort` a monthly time series of the short-term visitor departures from Australia.

**Source**

Australian Bureau of Statistics. Catalogue No 3401.02.

**Examples**

```
plot(departures)
```

elecequip

*Electrical equipment manufactured in the Euro area.*

---

**Description**

Manufacture of electrical equipment: computer, electronic and optical products. Data adjusted by working days; Euro area (16 countries). Industry new orders index. 2005=100.

**Usage**

```
data(elecequip)
```

**Format**

Time series object of class `ts`.

**Source**

Eurostat. [data.is/y6d08i](https://data.is/y6d08i)

**Examples**

```
plot(elecequip)
```

---

elecsales

*Electricity sales to residential customers in South Australia.*

---

**Description**

Annual electricity sales for South Australia in GWh from 1989 to 2008. Electricity used for hot water has been excluded.

**Usage**

```
data(elecsales)
```

**Format**

Time series object of class `ts`.

**Source**

Australian Energy Market Operator.

**Examples**

```
plot(elecsales)
```

---

`euretail`*Quarterly retail trade: Euro area.*

---

**Description**

Quarterly retail trade index in the Euro area (17 countries), 1996-2011, covering wholesale and retail trade, and repair of motor vehicles and motorcycles. (Index: 2005 = 100).

**Usage**

```
data(euretail)
```

**Format**

Annual time series of class `ts`.

**Source**

Eurostat. <http://data.is/IdKyZr>

**Examples**

```
plot(euretail)
```

---

`fuel`*Fuel economy data on 2009 vehicles in the US.*

---

**Description**

Fuel economy data taken from <http://www.fueleconomy.gov/feg/advancedSearch.htm> with search options

- Year: 2009
- Vehicle/Fuel: Regular Gasoline
- Transmission: Automatic
- Drive Type: FWD, RWD
- Cylinders: 3-5

Then GAS/E85 vehicles were removed.

**Usage**

```
data(fuel)
```

**Format**

`fuel` is a data frame with 134 observations on the following 8 variables.

`Model` a factor indicating the model of each vehicle.

`Cylinders` a numeric vector with the number of cylinders of each vehicle

`Litres` a numeric vector with the engine size in litres.

`Barrels` a numeric vector containing the energy impact score: an estimate of the average number of barrels of petroleum used per year.

`City` a numeric vector with estimated city mpg

`Highway` a numeric vector with estimated highway mpg

`Cost` a numeric vector containing annual fuel cost in US\$

`Carbon` a numeric vector containing the carbon footprint: the car's average CO2 emissions in tons per year, along with the CO2 emitted in producing and distributing the fuel.

**Source**

<http://www.fueleconomy.gov/feg/>

**Examples**

```
data(fuel)
```

---

guinearice

*Rice production (Guinea)*

---

**Description**

Total annual rice production (million metric tons) for Guinea. 1970-2009.

**Usage**

```
data(guinearice)
```

**Format**

Annual time series of class `ts`.

**Source**

World Bank. [data.is/whKD8H](https://data.is/whKD8H)

**Examples**

```
plot(guinearice)
```

---

h02

*Monthly cortecosteroid drug sales in Australia from 1992 to 2008.*

---

**Description**

Total monthly scripts for pharmaceutical products falling under ATC code H02, as recorded by the Australian Health Insurance Commission. Measured in millions of scripts.

**Usage**

```
data(h02)
```

**Format**

Monthly time series of class ts.

**Source**

Medicare Australia

**Examples**

```
plot(h02)
seasonplot(h02)
```

---

insurance

*Insurance quotations and advertising expenditure.*

---

**Description**

Monthly quotations and monthly television advertising expenditure for a US insurance company. January 2002 to April 2005.

**Usage**

```
data(insurance)
```

**Format**

Monthly time series of class ts.

**Source**

Kindly provided by Dave Reilly, Automatic Forecasting Systems.

**Examples**

```
plot(insurance)
```

---

livestock	<i>Livestock (sheep) in Asia, 1961-2007.</i>
-----------	--

---

**Description**

Annual sheep livestock numbers in Asia.

**Usage**

```
data(livestock)
```

**Format**

Annual time series of class ts.

**Source**

United Nations. <http://data.is/GFwxQi>

**Examples**

```
plot(livestock)
```

---

melsyd	<i>Total weekly air passenger numbers on Ansett airline flights between Melbourne and Sydney, 1987–1992.</i>
--------	--

---

**Description**

Air traffic numbers are in thousands, and divided into first class, business class and economy class. There was a major pilots' industrial dispute during the data period resulting in some weeks with zero traffic. There was also at least two changes in the definitions of passenger classes.

**Usage**

```
data(melsyd)
```

**Format**

Multiple time series of class mts.

**Source**

Ansett Airlines (which no longer exists).

**Examples**

```
plot(melsyd)
```

---

oil	<i>Annual oil production in Saudi Arabia</i>
-----	--

---

**Description**

Annual oil production (millions of tonnes), Saudi Arabia, 1965-2010.

**Usage**

```
data(oil)
```

**Format**

Annual time series of class `ts`.

**Source**

BP. <http://data.is/GEOHU3>

**Examples**

```
plot(oil)
```

---

sunspotarea	<i>Annual average sunspot area (1875-2011)</i>
-------------	--

---

**Description**

Annual averages of the daily sunspot areas (in units of millionths of a hemisphere) for the full sun. Sunspots are magnetic regions that appear as dark spots on the surface of the sun. The Royal Greenwich Observatory compiled daily sunspot observations from May 1874 to 1976. Later data are from the US Air Force and the US National Oceanic and Atmospheric Administration. The data have been calibrated to be consistent across the whole history of observations. More information is available at <http://solarscience.msfc.nasa.gov/greenwch.shtml>.

**Usage**

```
data(sunspotarea)
```

**Format**

Annual time series of class `ts`.

**Source**

NASA. [http://solarscience.msfc.nasa.gov/greenwch/sunspot\\_area.txt](http://solarscience.msfc.nasa.gov/greenwch/sunspot_area.txt)

**Examples**

```
plot(sunspotarea)
```

---

usconsumption	<i>Growth rates of personal consumption and personal income in the USA.</i>
---------------	---

---

**Description**

Percentage changes in quarterly personal consumption expenditure and personal disposable income for the US, 1970 to 2010.

**Usage**

```
data(usconsumption)
```

**Format**

Time series object of class `ts`.

**Source**

Federal Reserve Bank of St Louis. <http://data.is/AnVtzB>. <http://data.is/wQPcjU>.

**Examples**

```
plot(usconsumption)
```

---

usmelec	<i>Electricity monthly total net generation. January 1973-October 2010.</i>
---------	---

---

**Description**

Electricity net generation measured in billions of kilowatt hours (kWh).

**Usage**

```
data(usmelec)
```

**Format**

Time series object of class `ts`.

**Source**

US Energy Information Administration. <http://data.is/zgRWCO>.

**Examples**

```
plot(usmelec)
```

---

vn

*Quarterly visitor nights for various regions of Australia.*

---

**Description**

Total quarterly visitor nights from 1998-2011 for eight regions of Australia:

Sydney The Sydney metropolitan area.

NSW New South Wales other than Sydney

Melbourne The Melbourne metropolitan area.

VIC Victoria other than Melbourne.

BrisbaneGC The Brisbane and Gold Coast area.

QLD Queensland other than Brisbane and the Gold Coast.

Capitals The other five capital cities: Adelaide, Hobart, Perth, Darwin and Canberra.

Other All other areas of Australia.

**Usage**

```
data(vn)
```

**Format**

Time series object of class `mts`.

**Source**

Tourism Research Australia.

**Examples**

```
plot(vn)
```

---

wmurders	<i>Monthly female murder rate (per 100,000 standard population) in the USA.</i>
----------	---

---

**Description**

Total Murdered women, per 100 000 standard population.

**Usage**

```
data(h02)
```

**Format**

Monthly time series of class `ts`.

**Source**

Gapminder Foundation. <http://data.is/XKa24F>

**Examples**

```
plot(wmurders)
```

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