MONASH University

Rob J Hyndman

Forecasting:

Principles and Practice

CASE STUDY 1: Paperware company

Problem: Want forecasts of each of hundreds of items. Series can be stationary, trended or seasonal. They currently have a large forecasting program written in-house but it doesn't seem to produce sensible forecasts. They want me to tell them what is wrong and fix it.

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- They employ no statisticians and want the program to produce forecasts automatically.

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Methods currently used

A 12 month average

C 6 month average

E straight line regression over last 12 months

G straight line regression over last 6 months

H average slope between last year's and this year's values.
(Equivalent to differencing at lag 12 and taking mean.)

I Same as H except over 6 months.

K I couldn't understand the explanation.

CASE STUDY 2: PBS

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- Many drugs bought from pharmacies are subsidised to allow more equitable access to modern drugs.
- The cost to government is determined by the number and types of drugs purchased. Currently nearly 1% of GDP.
- The total cost is budgeted based on forecasts of drug usage.

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- Thousands of products. Seasonal demand.
- Subject to covert marketing, volatile products, uncontrollable expenditure.
- Although monthly data available for 10 years, data are aggregated to annual values, and only the first three years are used in estimating the forecasts.
- All forecasts being done with the FORECAST function in MS-Excel!

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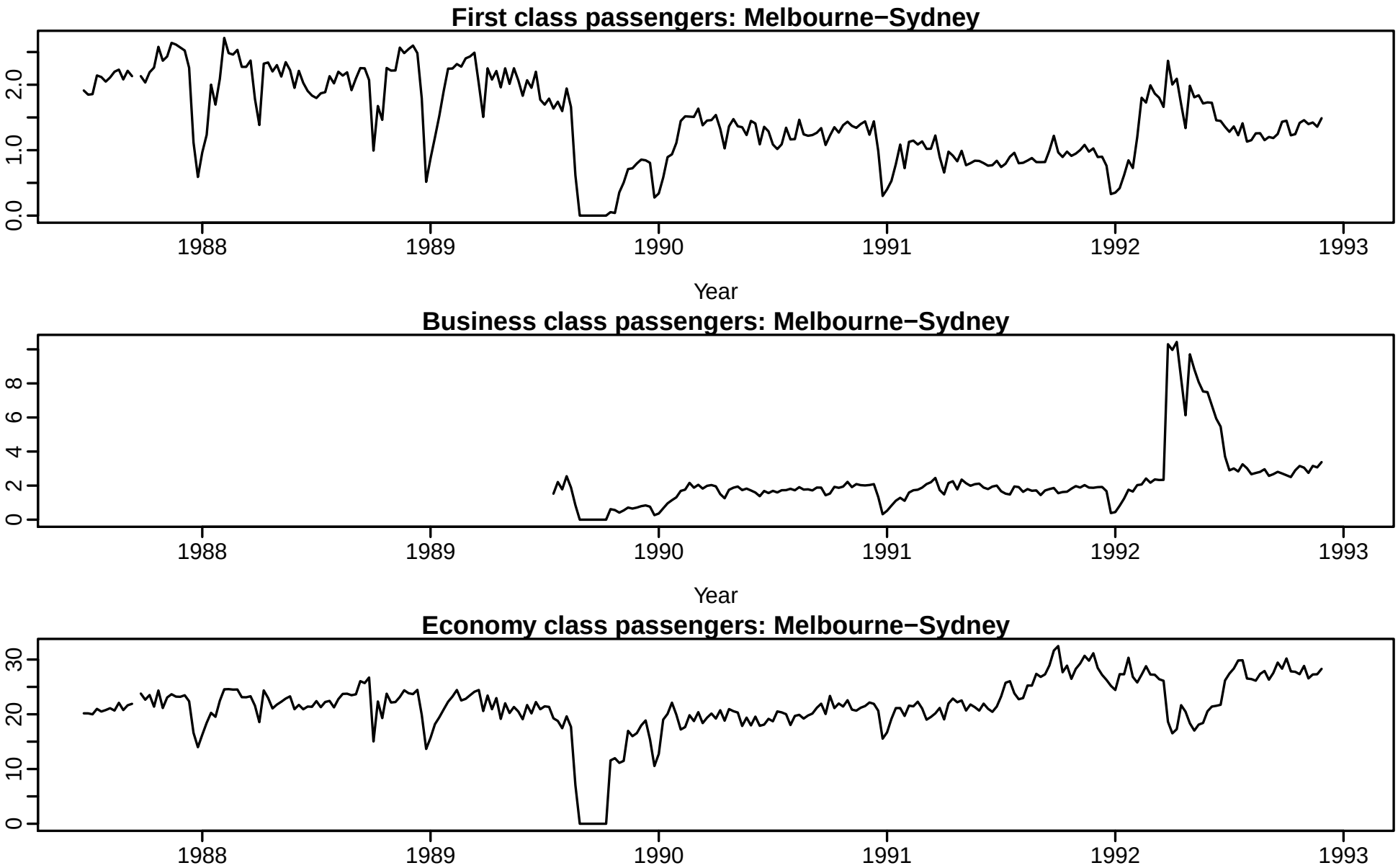

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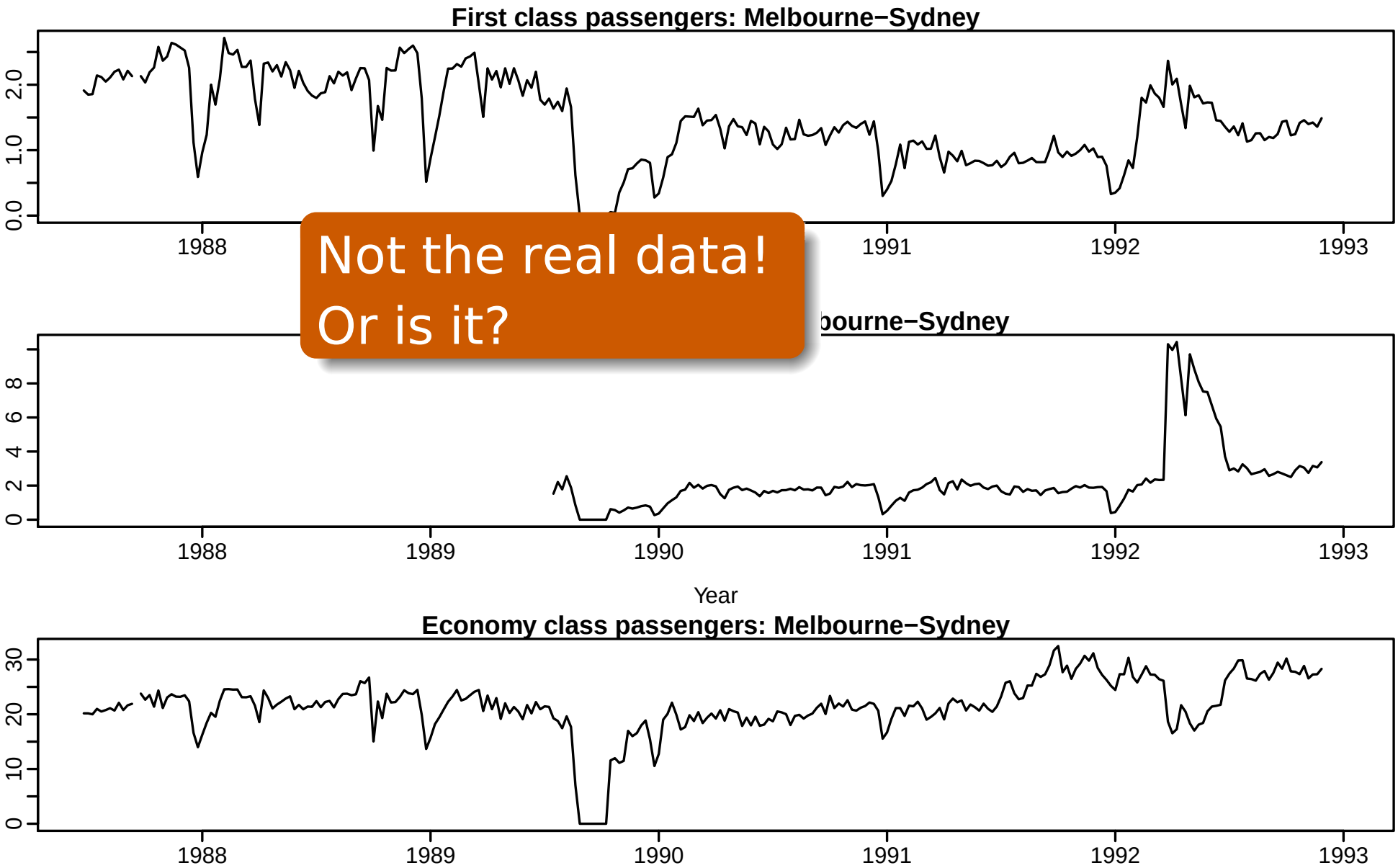

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Problem: how to forecast passenger traffic on major routes.

Additional information

- They can provide a large amount of data on previous routes.
- Traffic is affected by school holidays, special events such as the Grand Prix, advertising campaigns, competition behaviour, etc.
- They have a highly capable team of people who are able to do most of the computing.

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Resources

- Slides
- Exercises
- Textbook
- Useful links

robjhyndman.com/uwa

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Organization:

- International Institute of Forecasters.

Blog:

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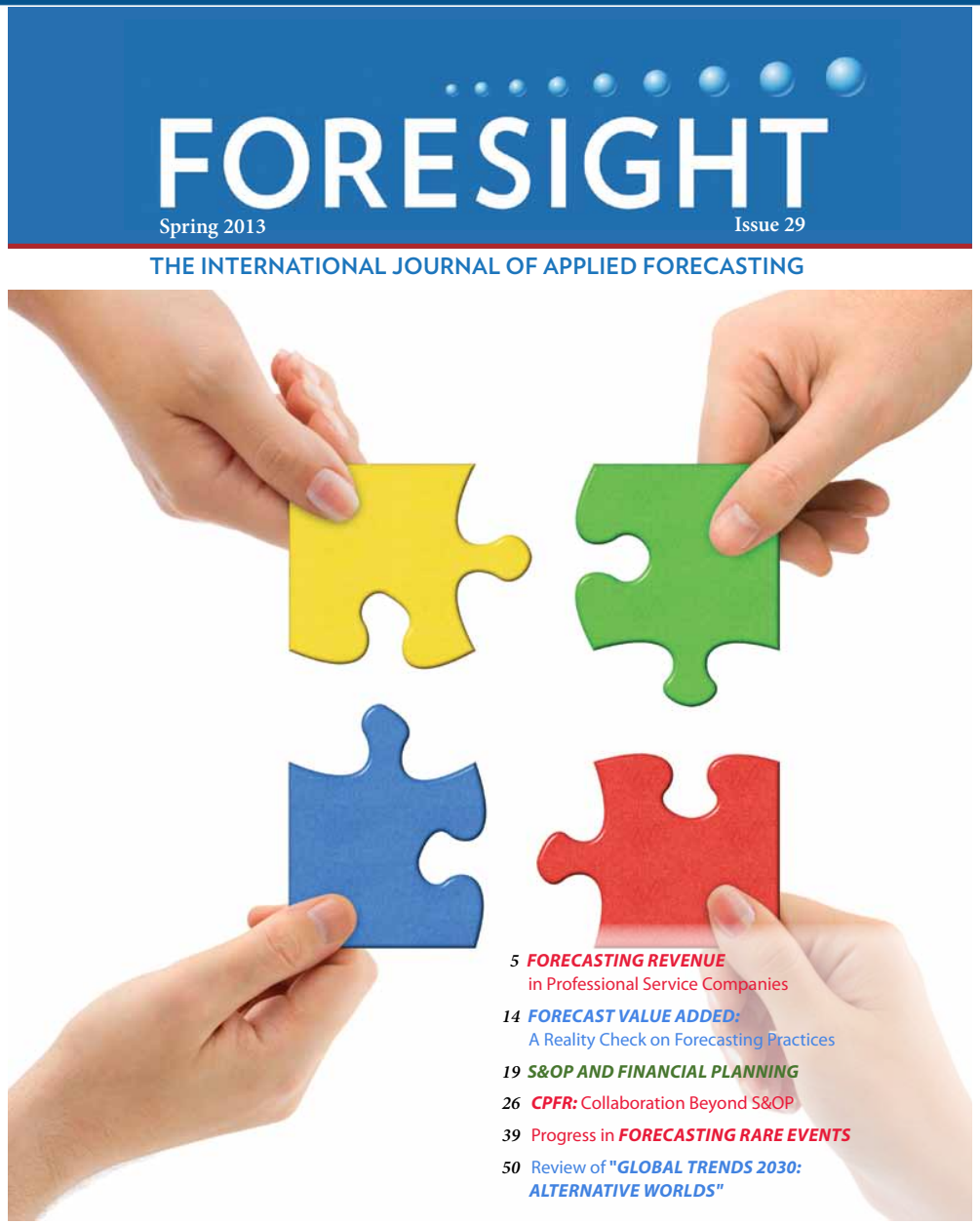
Applied Forecasting Journal



Happy forecasting

A good forecaster is not smarter than everyone else, he merely has his ignorance better organised.