

Industry-based research

Rob J Hyndman



MONASH University

My perspective



My perspective



My perspective



My perspective



Australian Government

Department of Health and Ageing

FOXTEL  TM
digital

My perspective



Tourism Australia
Tourism Research Australia



Australian Government

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digital

My perspective

Incitec Pivot



AEMO

AUSTRALIAN ENERGY MARKET OPERATOR

Tourism Australia
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Two case studies

- 1 Monthly government expenditure on pharmaceutical benefits: **Commonwealth Department of Health and Aging.**

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 - ② Half-hourly peak electricity demand: **Australian Energy Market Operator.**
- Highly complex data for which no standard models were suitable.
 - Real-world complications that existing research doesn't cover.
 - Problems motivated some of my research papers.

Outline

- 1 **Pharmaceutical Benefits Scheme**
- 2 Electricity demand
- 3 Conclusions

Forecasting the PBS

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- The total cost is budgeted based on forecasts of drug usage.

Forecasting the PBS



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SPECIALS

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POLITICS

Opp demands drug price restriction after PBS budget blow-out

The Federal Opposition has called for tighter controls on drug prices after the Pharmaceutical Benefits Scheme (PBS) budget blew out by almost \$800 million.

The money was spent on two new drugs including the controversial anti-smoking aid Zyban, which dropped in price from \$220 to \$22 after it was listed on the PBS.

**the
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Federal Election 2001

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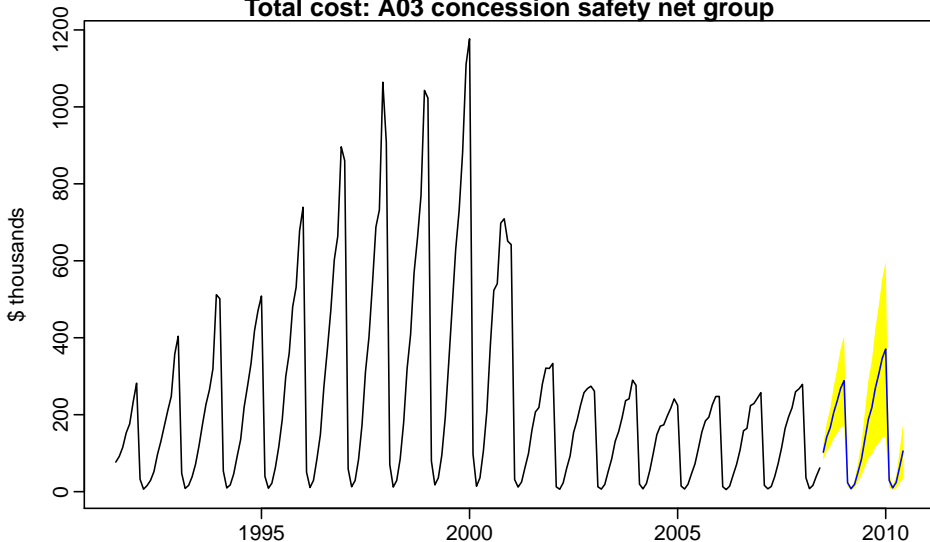
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- All forecasts being done with the FORECAST function in MS-Excel!

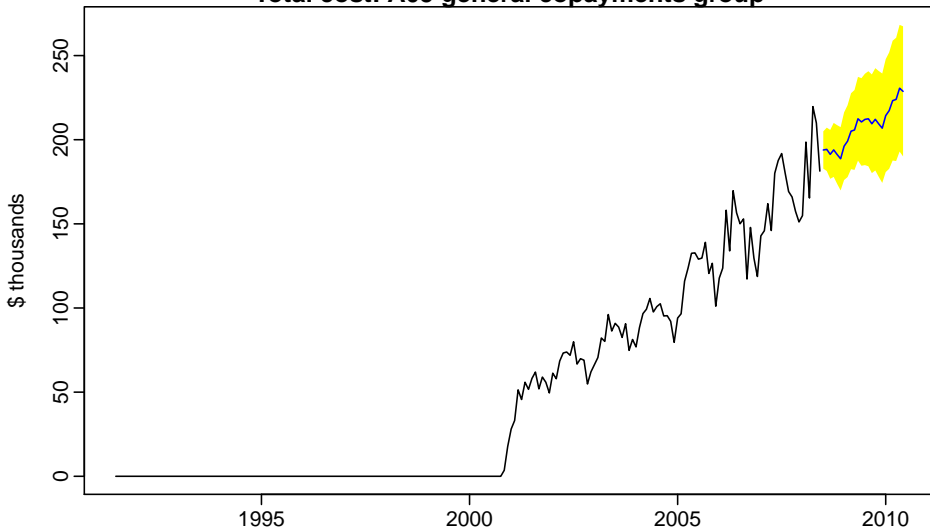
Forecasting the PBS

Total cost: A03 concession safety net group



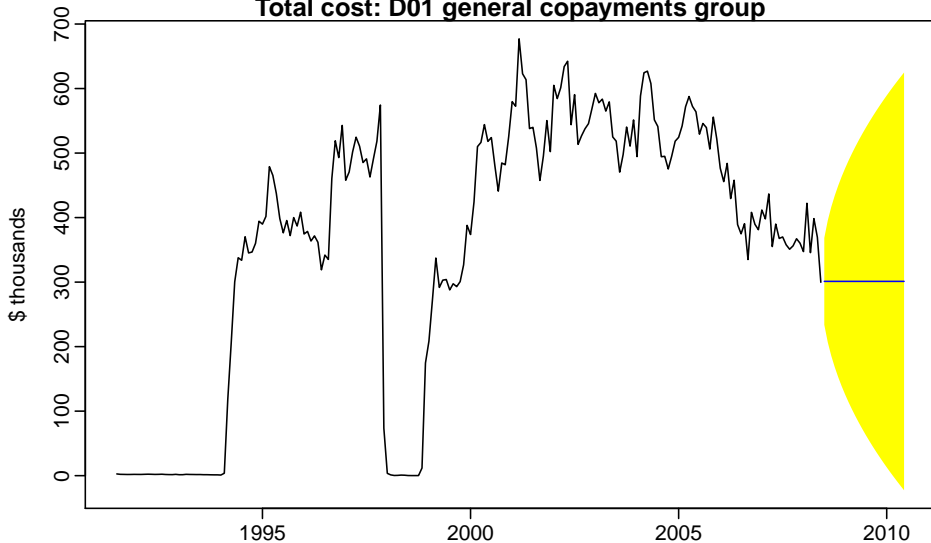
Forecasting the PBS

Total cost: A05 general copayments group



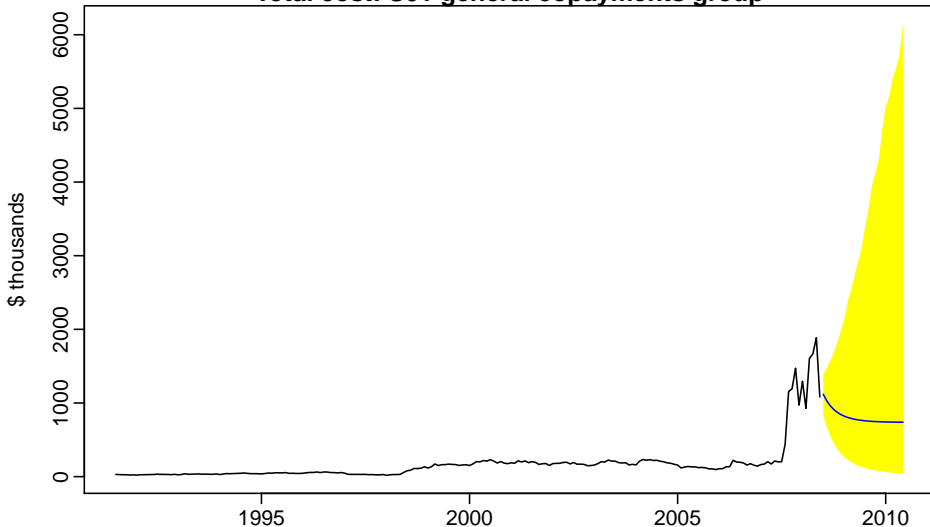
Forecasting the PBS

Total cost: D01 general copayments group



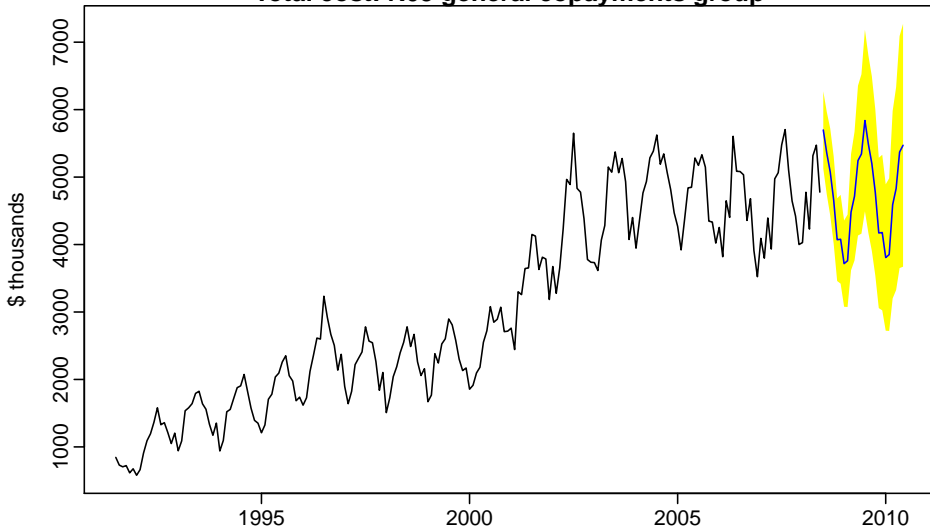
Forecasting the PBS

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Forecasting the PBS

Total cost: R03 general copayments group



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- Several research papers and a book have arisen from this project.
- The software has been made freely available in the R language.
- The methods developed are now used in thousands of businesses worldwide.

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2 **Electricity demand**

3 **Conclusions**

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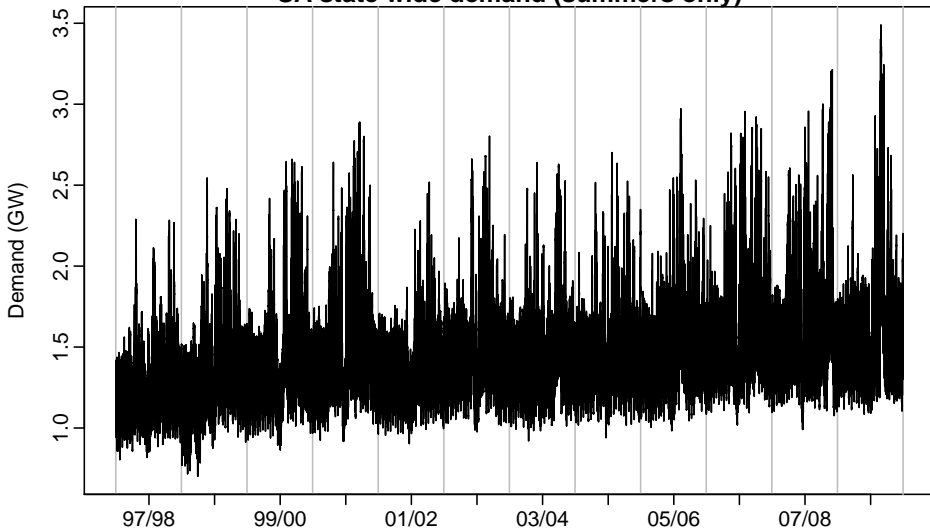
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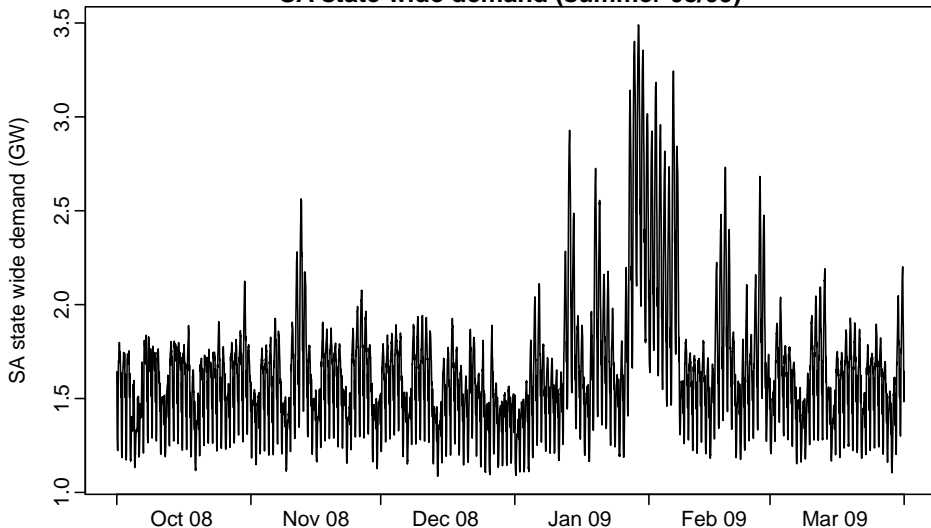
Demand data

SA state wide demand (summers only)



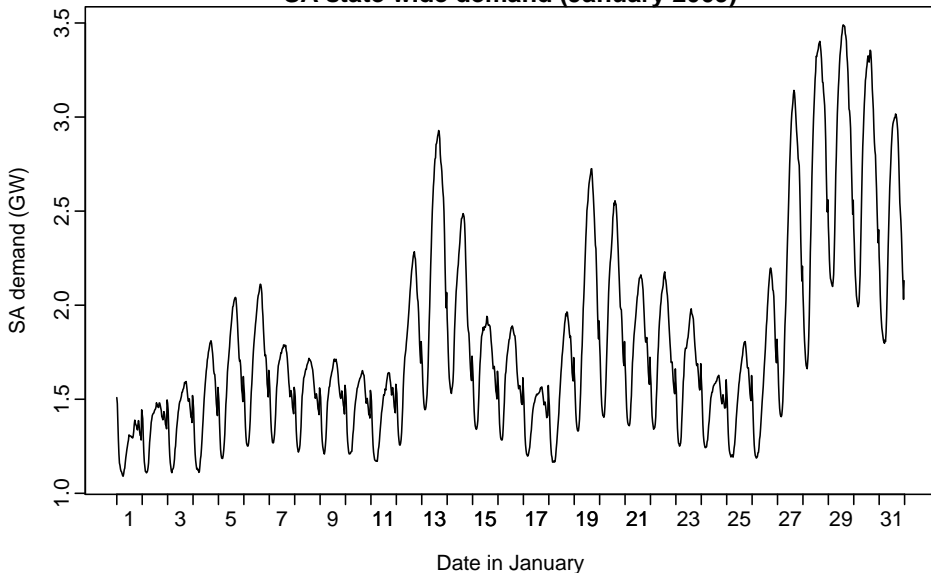
Demand data

SA state wide demand (summer 08/09)



Demand data

SA state wide demand (January 2009)



Electricity demand model

Demand drivers

- calendar effects
- prevailing and recent weather conditions
- climate changes
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 - This method has now been adopted for the official South Australian and Victorian long-term peak electricity demand forecasts.

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- Commercial problems can (and should) motivate research.

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- Make it easy for businesses to use your research (e.g., free computer code).