Digression (from yesterday)

- Seasonality in average *spend*
- Most seasonality is arrivals
- But spending patterns change too
  - Different depending on what month of the year leaving (see next chart)
  - Depends on visitor type (e.g., particularly strong for education)
  - And possibly day of the week or month too
Two examples

1. Destination marketing evaluation
2. Rugby World Cup
1. Destination marketing

• Tourism New Zealand
  • Around NZ$100m per year
  • Key campaign “100% Pure”
  • Current strategy focuses on “Active Considerers”
  • Increasingly focused on-line

• The evaluation challenge
  • Well regarded outputs
  • But translation to outcomes?
  • Do they “convert” to actually come to New Zealand?
The problem:

- Growth has been steady
  - But so has Tourism New Zealand’s effort
  - Hard to construct the counter-factual
- Long delays in decision-making
- External effects obvious impacts
  - Conflict and international tensions
  - Fuel prices
  - Exchange rates
Multivariate time series model

<table>
<thead>
<tr>
<th>Response variable</th>
<th>Growth in Australian arrivals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main explanatory variable</td>
<td>Marketing budget for Australia</td>
</tr>
<tr>
<td>Control variables</td>
<td>Airfares</td>
</tr>
<tr>
<td></td>
<td>Exchange rates</td>
</tr>
<tr>
<td></td>
<td>Australian general propensity to travel</td>
</tr>
<tr>
<td></td>
<td>Australian consumption</td>
</tr>
<tr>
<td></td>
<td>(a few others …)</td>
</tr>
</tbody>
</table>
Multivariate time series model

- Didn’t answer our question
  - Not enough variation in marketing budget to explain variation in arrivals
  - Control variables changed more and were much more statistically important
  - Not enough reliable data for long time series (airfare)
- Unlikely to be much use for this
  - But will use the technique for other purposes eg relationship of airfares and oil prices to arrivals or expenditure

Case study – America’s Next Top Model

- Website and bookings
  - Spikes website hits for newzealand.com and for Air New Zealand
  - Bookings on Air New Zealand from 20 April-28 May rose by 17 percent compared to the same period in 2009,
  - Especially positive as had been trending down
- Awareness
  - 26% aware of link
  - Of those aware, 56% more likely to consider a holiday
Case study – China
‘Experience New Zealand’

• Campaign won prestigious award
• Six-fold increase in web hits
  • 23,000 traceable referrals to commercial partners
  • But can’t track how many led to purchases
• China has had massive growth
  • But cannot attribute to campaign
  • General Chinese outbound increase the main cause
Questions to visitors

- Simply asking
  - “Were you influenced by….”
  - Probably an underestimate
  - Subjects don’t realise the full range of marketing activity that may influence them

Questions to visitors

- Experimental analysis results
  - Could estimate extra expenditure per year due to advertising
  - A large fraction of expenditure by those reporting advertising "main influence"
  - A small fraction of those reporting "an influence"
- Estimate return on marketing investment
  - Massive uncertainty…
  - Not enough sample size to say how these visitors different to others
More econometric modelling

- Funded as blue skies research
- Cross-country, time series
- Multi-year project
- Might avoid some problems:
  - May be able to use variation in marketing activities \textit{between} market countries
  - This variation is more than the variation in one market country, over time

On-line analytics

- A range of improved tools for tracking behaviour
Our next steps

- A new longitudinal study
- Australia and possibly Singapore
- Based on “active considerers”
  - Will follow up at six monthly intervals
  - Observe behaviour
  - If they don’t go to NZ, where do they go?
  - Tease out awareness of range of marketing activity, not just commercials

Summary – destination marketing evaluation

- Time series modelling
- Case studies x 4
- Questions in IVS and VEM
- Cross-country modelling
- Longitudinal study
- Increased on-line analytics
2. – The Rugby World Cup

- A “mega event”
- Benefits and costs well beyond tourism
- Our question:
  - “what was the change in arrivals and expenditure that can be attributed to the Rugby World Cup?”
  - Needs to be robust in the face of criticism of uncertainty, displacement, attribution issues, etc

Arrivals…

- 133,000 marked their arrival cards
  - We think the first time all arrivals for a mega-event recorded
- Main problems are
  - “how big is the increase in historical terms?”
  - “how many would have come anyway?”
How big was the increase compared to previous years?
For some market countries, the increase was unprecedented.

How many *extra*?

- Two methods for the “no Cup” counterfactual:
  1. Naïve comparison to same months previous year
  2. Expected arrivals in Sept-Oct, given arrivals in May

- Weaknesses of each
  1. Doesn’t take into account Christchurch earthquake
  2. Vulnerable to just “May”

- Result is a range of estimates
  - $89,000 \pm 10,000$ net increase
Expenditure…

• More straightforward
• Rugby arrivals were also tagged in the IVS
  • But resulting sub-sample very small
  • $3,400 \pm $630 average spend
• Total expenditure result of two sources of randomness
  • Multiply the arrivals (over 15) and average spend
  • Used simulations to derive an overall confidence interval
$280 million ± $60 million

Further information

- Surveyed 12,000 international ticket-buyers
- Weaknesses:
  - Expenditure information not comparable
- Good for:
  - Overall satisfaction
  - Comparing satisfaction with different aspects (results were similar to normal tourist profile)
  - Assessing issues of particular interest such as engagement with cultural activities, Maori, etc
Summary – Rugby World Cup

- Drew on:
  - Immigration data
  - International Visitors Survey
  - Ad hoc survey of ticket holders

- Further analysis was required:
  - How much net increase in arrivals?
  - Combining uncertainty from multiple sources

- Final results very robust

Bonus slides (not for showing)