The price of tourism in the context of global oil prices

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• 3-year FRST-funded project on Tourism & Oil

• **Aim**: to help manage tourism’s vulnerability to global oil prices

• Three objectives:
  1. Modelling tourist behaviour IN and TO New Zealand
  2. Analysing economy-wide effects (CGE)
  3. Adaptation measures for the sector
Weekly Average Dubai Crude and NZ Exchange Rate

Source: Ministry of Economic Development (Dec. 2008)
Petrol Prices and Taxes in OECD Countries

March Quarter 2008

Source: Ministry of Economic Development (Dec. 2008)
### Segments used in this research

<table>
<thead>
<tr>
<th>Segment</th>
<th>Sample size in 2007</th>
<th>Market share in 2007</th>
<th>Total Adults arrivals in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia FIT Holiday</td>
<td>312</td>
<td>13.0</td>
<td>291,087</td>
</tr>
<tr>
<td>Australia FIT VFR</td>
<td>296</td>
<td>12.7</td>
<td>286,005</td>
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<tr>
<td>Australia FIT Other</td>
<td>252</td>
<td>8.7</td>
<td>195,029</td>
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<tr>
<td>Australia Tour</td>
<td>79</td>
<td>3.9</td>
<td>86,823</td>
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<tr>
<td>UK Holiday</td>
<td>305</td>
<td>6.3</td>
<td>141,995</td>
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<tr>
<td>UK VFR and Other</td>
<td>257</td>
<td>5.6</td>
<td>126,081</td>
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<tr>
<td>USA FIT Holiday</td>
<td>265</td>
<td>4.2</td>
<td>93,247</td>
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<tr>
<td>USA FIT VFR and Other</td>
<td>226</td>
<td>2.9</td>
<td>64,537</td>
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<tr>
<td>USA Tour</td>
<td>97</td>
<td>1.6</td>
<td>35,032</td>
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<tr>
<td>Japan FIT Holiday</td>
<td>107</td>
<td>1.4</td>
<td>30,509</td>
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<tr>
<td>Japan FIT VFR and Other</td>
<td>138</td>
<td>1.2</td>
<td>26,957</td>
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<tr>
<td>Japan Tour</td>
<td>161</td>
<td>2.5</td>
<td>56,418</td>
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<td>South Korea All</td>
<td>238</td>
<td>3.8</td>
<td>85,592</td>
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<tr>
<td>China FIT</td>
<td>174</td>
<td>1.2</td>
<td>27,000</td>
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<tr>
<td>China Tour</td>
<td>217</td>
<td>3.7</td>
<td>82,995</td>
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<tr>
<td>Germany All</td>
<td>182</td>
<td>2.5</td>
<td>55,082</td>
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<tr>
<td>Rest of World FIT</td>
<td>1760</td>
<td>22.4</td>
<td>503,736</td>
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<tr>
<td>Rest of World Tour</td>
<td>180</td>
<td>2.5</td>
<td>55,862</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5246</strong></td>
<td><strong>100.0</strong></td>
<td><strong>2,243,987</strong></td>
</tr>
</tbody>
</table>
The average amount spent on fuel (directly) by a tourist in each segment

Spend per trip on fuel, based on Car+Campervan kms
Comparisons across segments and change over time

Example: UK and USA segments

DOMESTIC AIR
CAR
BUS/COACH
Consumption bundles and Price Indices

- We determined the consumption bundle for each segment based on:
  - Accommodation
  - Road and air transport
  - Fuel (petrol)
  - Other
- We have calculated price indexes (based on Statistics NZ) to represent the price of the bundle of tourism products consumed by tourists in each market segment.
- We fixed consumption bundles at their 2006 levels, and apply that pattern to price indices.
Price Change in NZD 1997-2007

AVERAGE 26.8%
Rest of World FIT 26.7%
Japan FIT Holiday 26.6%
Rest of World Tour 26.6%
Australia FIT VFR 26.5%
Australia FIT Other 26.5%
Japan FIT VFR and Other 26.3%
Japan Tour 26.1%
USA Tour 26.1%
Australia Tour 26.0%
China FIT 25.8%
South Korea All 25.8%
China Tour 25.4%
CPI increased 24.1% over the same period.
Exchange Rate Effects

Total price change 1997 – 2007

- USA FIT Holiday
- USA FIT VFR and Other
- USA Tour
- South Korea All
- Japan FIT Holiday
- Japan FIT VFR and Other
- Japan Tour
- China FIT
- China Tour
- Germany All
- Australia FIT Holiday
- Australia FIT VFR
- Australia FIT Other
- Australia Tour
- UK VFR and Other
- UK Holiday

Price Change in Foreign Currency
Price Change in NZD
International Arrivals

- Linear regression
- Quarterly data 1997-2006
- General – to – specific model selection process
  - Real consumption per capita (foreign)
  - Real GDP per capita (foreign)
  - CPI (foreign)
  - Exchange rate (foreign with $NZ)
  - Oil price (world price)
  - OTG price index (in foreign currency)
  - Airfare (in foreign currency)
  - Quarterly dummy variables
For example: Korea

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
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<tbody>
<tr>
<td>Consumption</td>
<td>0.05</td>
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<tr>
<td>CPI</td>
<td>-2827</td>
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<tr>
<td>Exchange Rate</td>
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<tr>
<td>OTG Price</td>
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<td>Oil Price</td>
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<td>q1</td>
<td>7626</td>
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<td>Constant</td>
<td>215032</td>
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Outlook

• More work on price elasticity
• Input into Computable General Equilibrium Model
• Research on energy behaviour in tourism businesses (published)
• Tourist behaviour
• Identifying at risk destinations, products and markets