



# **Exchange Rates and Tourism Relationships in New Zealand**

**Report to Ministry of Tourism**

**July 2007**



## Preface

NZIER is a specialist consulting firm that uses applied economic research and analysis to provide a wide range of strategic advice to clients in the public and private sectors, throughout New Zealand and Australia, and further afield.

NZIER is also known for its long-established Quarterly Survey of Business Opinion and Quarterly Predictions.

Our aim is to be the premier centre of applied economic research in New Zealand. We pride ourselves on our reputation for independence and delivering quality analysis in the right form, and at the right time, for our clients. We ensure quality through teamwork on individual projects, critical review at internal seminars, and by peer review at various stages through a project by a senior staff member otherwise not involved in the project.

NZIER was established in 1958.

## Authorship

This report has been prepared at NZIER by John Stephenson, Simona Vita, Mark Walton and Alice Wang and reviewed by Jean Pierre De Raad. The assistance of Mike Chan, Ministry of Tourism is gratefully acknowledged.

8 Halswell St, Thorndon  
P O Box 3479, Wellington 6140  
Tel: +64 4 472 1880  
Fax: +64 4 472 1211  
econ@nzier.org.nz  
www.nzier.org.nz

NZIER's standard terms of engagement for contract research can be found at [www.nzier.org.nz](http://www.nzier.org.nz).

While NZIER will use all reasonable endeavours in undertaking contract research and producing reports to ensure the information is as accurate as practicable, the Institute, its contributors, employees, and Board shall not be liable (whether in contract, tort (including negligence), equity or on any other basis) for any loss or damage sustained by any person relying on such work whatever the cause of such loss or damage.



# Executive Summary

The purpose of this report is to determine the link between the value of New Zealand's currency and inbound and outbound travel demand and tourist expenditure.

The report is entirely based on quantitative methods. We decompose the natural growth and fluctuations in travel demand and separate out the effects of movements in exchange rates. A summary of our results for inbound and outbound travel can be found in Table 1 and Table 2 respectively.

## Tourism is reasonably exposed to exchange rate movements

We find that tourism in New Zealand is exposed to movements in the value of the New Zealand dollar but less so than many of New Zealand's other export industries.

While many of New Zealand's export industries experience large absolute reductions in returns when the New Zealand dollar appreciates, this is not necessarily so for tourism.

The reason the tourism industry as a whole is less exposed to the adverse impacts of an appreciating NZ dollar is that underlying trend growth in visitor numbers and average visitor expenditure is very strong.

As a rule of thumb, it takes a 13% appreciation in the New Zealand dollar (year on year) to reduce the absolute value of visitor expenditure by 1%. As such, declining absolute visitor expenditure is rarely due to exchange rates – occurring only during peaks of exchange rate cycles.

## Income growth abroad has a greater influence than exchange rates...

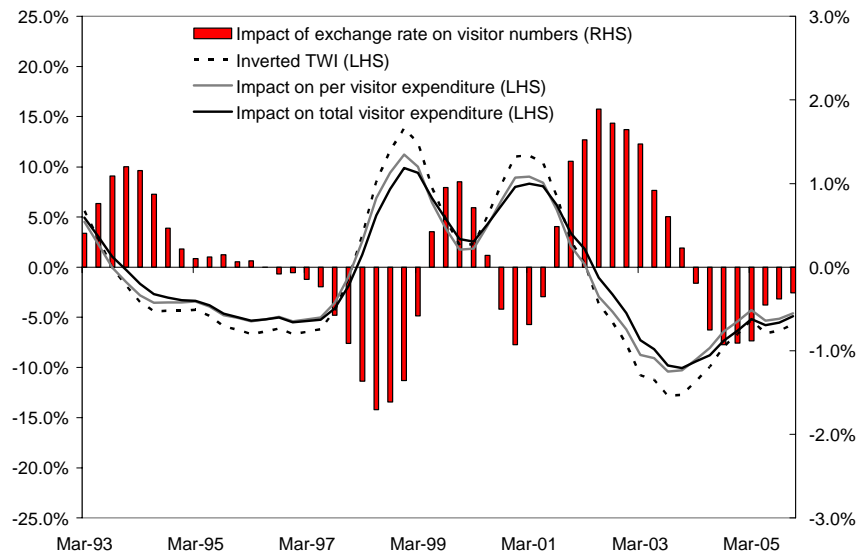
Tourism is linked to income growth around the world by a greater than 1 to 1 relationship. We find that a 1% growth in world incomes typically helps drive growth in visitor numbers by 1.7% and increases expenditure per visitor by 1.3%.

We also find that, at an aggregate level, changes in the exchange rate have very little influence on visitor arrivals. A 1% increase in the value of the New Zealand dollar is estimated to reduce the number of visitors by 0.02%. The chart on page ii provides a summary of that finding. It shows that a depreciation of the New Zealand dollar (shown as an *increase* as we inverted the TWI) has a positive impact on visitor arrivals. But the magnitude of changes for the exchange rate (left hand axis) is much larger than the magnitude of changes in visitor numbers due to exchange rate impacts.

---

## Impact of exchange rates on visitor arrivals

Annual average percent change (LHS), rolling annual percent change (RHS)



Source: NZIER

---

## ...but exchange rates have a profound impact on expenditure

While we find that visitor numbers aren't especially responsive to exchange rates at an aggregate level, we find that exchange rate changes have short run profound impacts on visitor expenditure that dwarf considerations around the exchange rate impacts on visitor numbers.

We find that expenditure per visitor to New Zealand goes down by around 0.8% for every 1% increase in the value of the New Zealand dollar. That means that growth in returns to the tourism industry is likely to be dampened considerably when the New Zealand dollar appreciates and, conversely, improve considerably when the New Zealand dollar depreciates.

## Exchange rate impacts vary considerably by market segment

The extent of variation in our results by market and purpose of travel suggests that careful attention needs to be paid the risks facing some markets (and market segments) over others.

People on holiday are typically much more sensitive to movements in exchange rates than other types of travellers. At an aggregate level holiday arrivals go down by 0.2% when the New Zealand dollar goes up in value by 1%. That impact is 10 times greater than the impact that exchange rates have on other categories of travellers at an aggregate level.

Particular markets are also very sensitive to exchange rate changes. The number of visitors from Germany, for example, tends to reduce by around 0.9% for every 1% appreciation in the New Zealand dollar. Moreover, that degree of responsiveness rises to 1.5% for every 1% appreciation in the dollar in the case of people on holiday from Germany.

Numbers of visitors from Japan, the United States, and Korea are also fairly sensitive to the value of the New Zealand dollar, especially in the case of holiday travellers. Although underlying trend growth in visitor numbers from these markets means that it takes fairly large changes in exchange rates (10% or more) to see an absolute reduction in arrivals.

We also find evidence of an emerging relationship between slowing growth in visitor numbers from China and increases in the value of the New Zealand dollar. However, we cannot be definitive about the strength of that relationship because the rapid increase in visitor numbers in recent years – in part because of New Zealand acquiring ‘Approved Destination Status’ and also because of rapid income growth in China – makes it impossible to decipher the impacts of exchange rates on visitor numbers. Given the growing importance of Chinese arrivals to New Zealand tourism, the impact of exchange rates on visitor numbers from China should perhaps be revisited in the future.

The only major tourist markets that are not especially sensitive to the value of the New Zealand dollar, in terms of visitor arrivals, are Australia and the United Kingdom. Given that they account for half of all visitor arrivals, it is our assessment that the comparative lack of responsiveness of visitor numbers from those markets to changes in the exchange rate is the main reason that visitor arrivals in aggregate are not very sensitive to the value of the New Zealand dollar.

Two figures are provided below to summarise the relative exchange rate sensitivity of various market segments for visitor arrivals and expenditure. In those figures we have mapped exchange rate sensitivity alongside underlying trend growth to provide a sense of those markets which are comparatively high risk (i.e. those in the top left quadrant, where growth is below average and exchange rate sensitivity is high) and those which are comparatively low risk (those in the bottom right quadrant where growth is above average and exchange rate sensitivity is comparatively low).

### **Expenditure per visitor is generally very sensitive to exchange rates...**

In contrast to visitor numbers, expenditure per visitor appears to be very sensitive to changes in the value of the New Zealand dollar. As previously mentioned, at an aggregate level, expenditure per visitor declines by 0.8% for every 1% increase in the value of the New Zealand dollar. In some markets that figure is much higher with, for example, visitors from the United States reducing their expenditure by 0.96% for every 1% increase in the value of the New Zealand dollar.

That said, although 0.96% is close to 1%, we find no evidence to prove the hypothesis that expenditure budgets are set in foreign currency terms and therefore a 1% change in the value of the New Zealand dollar leads to a 1% reduction in expenditure.

**Arrival sensitivity to exchange rates by market and visit purpose**

Average exchange rate sensitivity = 1% increase in value of NZ\$ reduces visitor numbers by 0.11%. Average trend growth = 4.8% p.a. VFR = visiting friends and relatives.

Sensitivity of visitor arrivals to exchange rates	Above average	<ul style="list-style-type: none"> <li>• Germany, total</li> <li>• Germany, holiday</li> <li>• Japan, total</li> <li>• Japan, business</li> <li>• Japan, holiday</li> <li>• Korea, business</li> <li>• US, total</li> <li>• US, business</li> <li>• US, holiday</li> </ul>	<ul style="list-style-type: none"> <li>• All markets, holiday</li> <li>• Korea, holiday</li> <li>• Korea, VFR</li> <li>• US, VFR</li> </ul>
	Below average	<ul style="list-style-type: none"> <li>• Australia, total</li> <li>• Australia, business</li> <li>• Australia, VFR</li> <li>• UK, business</li> </ul>	<ul style="list-style-type: none"> <li>• All markets, total</li> <li>• All markets, business</li> <li>• All markets, VFR</li> <li>• Australia, holiday</li> <li>• Germany, business</li> <li>• Germany, VFR</li> <li>• Japan, VFR</li> <li>• Korea, total</li> <li>• UK, total</li> <li>• UK, holiday</li> <li>• UK, VFR</li> </ul>
		Below average	Above average

Source: NZIER

**...but in a few markets the exchange rate has no impact on expenditure per visitor**

Rather in some cases we find no evidence that the value of the New Zealand dollar affects average expenditure at all. For example, in the case of German visitors we find no evidence that they adjust the amounts they spend, on average, in response to changes in the exchange rate. We believe that finding reflects the fact that some visitors, not just German visitors, come to New Zealand with a fixed agenda rather than a fixed budget. If that agenda is unaffordable, then they don't come. This may be an important reason why German visitor numbers are highly responsive to the value of the New Zealand dollar.



### Expenditure sensitivity to exchange rates by market and visit purpose

Average exchange rate sensitivity = 1% increase in value of NZ\$ reduces expenditure by 0.66%. Average trend growth = 4.8% p.a. VFR = visiting friends and relatives.

Sensitivity of visitor expenditure to exchange rates	Above average	<ul style="list-style-type: none"> <li>• Germany, total</li> <li>• Germany, holiday</li> <li>• Japan, total</li> <li>• Japan, business</li> <li>• Japan, holiday</li> <li>• US, total</li> <li>• US, business</li> <li>• US, holiday</li> </ul>	<ul style="list-style-type: none"> <li>• All markets, VFR</li> <li>• All markets, holiday</li> <li>• Germany, business</li> <li>• Germany, VFR</li> <li>• Japan, VFR</li> <li>• Korea, total</li> <li>• Korea, holiday</li> <li>• Korea, VFR</li> <li>• UK, total</li> <li>• UK, VFR</li> <li>• US, VFR</li> </ul>
	Below average	<ul style="list-style-type: none"> <li>• Australia, total</li> <li>• Australia, business</li> <li>• Australia, VFR</li> <li>• UK, business</li> <li>• Korea, business</li> </ul>	<ul style="list-style-type: none"> <li>• All markets, total</li> <li>• All markets, business</li> <li>• Australia, holiday</li> <li>• Japan, VFR</li> <li>• UK, holiday</li> </ul>
		Below average	Above average
		Trend growth in visitor numbers	

Source: NZIER

### Exchange rate impacts take a long time to materialise...

We also find that there is a substantial degree of variation in the timing between exchange rate changes and impacts on visitor arrivals, with German holiday makers taking the “longest” to respond to changes in exchange rates – possibly reflecting long planning horizons for those travellers. German visitor numbers don’t start to react to changes in the value of the New Zealand dollar until half a year after a change in the exchange rate. A change in the exchange rate still has a detectable effect on visitor numbers more than two years later.

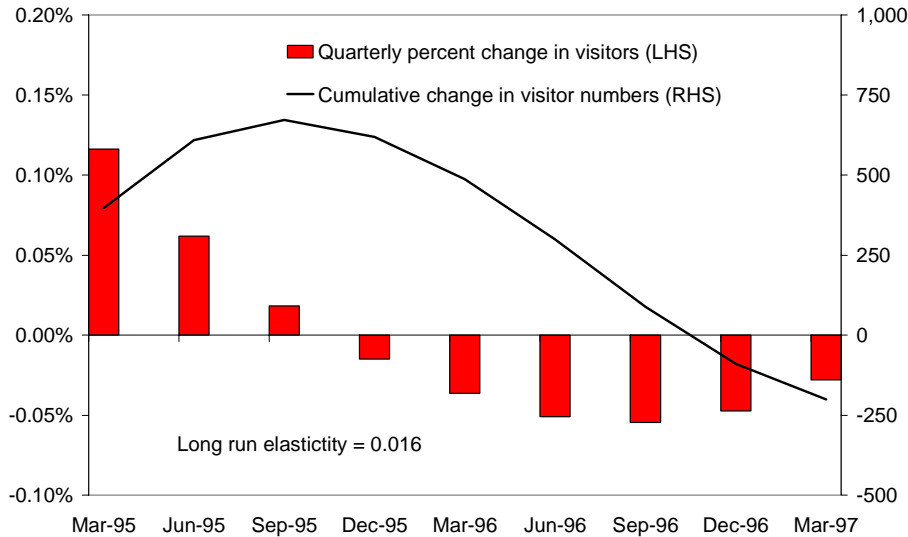
In fact our analysis shows that there are substantial lags in the effect of the exchange rate on visitor numbers across all markets. At an aggregate level, exchange rate effects don’t become their strongest until a year or more after the exchange rate changes and the effect of a change is still felt slightly over a year later.

Substantial lags in the effect of the exchange rate on visitor numbers are a result of long planning horizons on the part of most travellers. They also arise because of stickiness of

prices. That is, travel brochures and package deals have pricing schedules that are fixed for long periods so that, for example, the price “today” may in fact reflect the prevailing exchange rate a year earlier.

### Impact of an exchange rate change on total arrivals

March 1995 TWI appreciates 2.2%, arrivals decline by 0.04% over the long run



Source: NZIER

The length of time over which the exchange rate affects total visitor arrivals is summarised in the chart above, which shows, by way of example, the sole effect of a 2.2% appreciation of the New Zealand dollar on a trade weighted basis on visitor numbers in that quarter and over the subsequent 8 quarters.

### ...except in the case of visitors from Australia

The only major exception to the protracted impact that a change in the exchange rate can have on visitor number is in the case of Australian arrivals. That exception most likely reflects shorter planning horizons for visitors coming from Australia.

The long lags between exchange rate changes and visitor numbers means there are opportunities for tourism operators to focus their marketing efforts to try and offset potential for reduced demand. That is especially so in the case of the Japanese, German, and US markets where visitor numbers are quite sensitive to exchange rates.

There is, however, much less opportunity to temper the effects of exchange rate changes on visitor expenditure. When the New Zealand dollar appreciates the impact on per visitor expenditure starts to take effect very quickly. As it is very difficult to predict the timing of changes in the exchange rate, it is difficult to use such information to forestall the effects of a change in the exchange rate on visitor expenditure. Any efforts that might be made to increase per visitor expenditure are just as likely to be strategies that should have general

application than strategies that should be employed to offset the impacts of exchange rate changes.

### **Some evidence of increased visitors when the NZ dollar appreciates**

In our research we also found some interesting paths in the dynamic adjustment of visitor numbers to changes in the exchange rate that suggests that visitor numbers increase in the short run following an increase in the value of the New Zealand dollar.

Two effects seem likely explanations for this counter-intuitive result. One is that some travellers substitute to the New Zealand experience when their currency depreciates so that alternative destinations become more expensive, and because New Zealand is especially price competitive. For that effect to make sense it would have to be operating at the upper ends of the market in terms of the wealth of the travellers and the cost of the experiences those travellers would otherwise be purchasing.

Another possible driver is that tourism operators or even airlines increase their marketing or introduce specials to try and sell off some of the packages or seats they have available at cheaper rates (to avoid or reduce exchange rate risks around further appreciation).

Those ideas need to be fleshed out by qualitative research before they can be relied upon. But they do raise some interesting questions. Is New Zealand tourism so price competitive that it becomes a substitute for more expensive alternatives even when the New Zealand dollar increases in value? If so, are there additional gains in focussing on the high end of the international travel market where such effects are likely to exist, if at all?

### **Exchange rates have a large impact on outbound tourism**

Outbound travel is highly sensitive to exchange rates, especially holiday travel where there is a nearly proportionate relationship between growth in departures and growth in the value of the New Zealand dollar (a 1% change in the value of the dollar yields an approximate 0.9% increase in holiday departures). That suggests that tourism operators who rely on domestic tourism as well as overseas visitors will find that returns get squeezed not only by a reduction in spending by international visitors, but also by an increase in outbound travel from New Zealand when the dollar appreciates. It also means that when the dollar is high, relying on domestic tourism to fill the gap from falling foreign demand is not a great option.

**Table 1 Summary of results for NZ arrivals**

		Market size			Impact of a 1 % appreciation in the NZ dollar				Impact of 1 % growth in income		Trend growth (4)	
		Visitors (1) (number)	Share (1) (% of total)	Spend (2) (\$ per visit)	Visitors (% change)	Time to full effect (quarters)	Importance (3)	Spend (% change)	Visitors (% change)	Spend (% change)	Visitors (% p.a.)	Spend (% p.a.)
Total	Total	2,362,291	100.0%	2,898	-0.02%	9	Not very important	-0.81%	1.7%	1.3%	5.2%	4.6%
	Business	264,812	11.2%	2,311	-0.02%	9	Not very important		1.8%		5.3%	
	Holiday	1,183,028	50.1%	3,227	-0.20%	8	Not very important		1.6%		5.1%	
	VFR	672,384	28.5%	1,988	-0.02%	6	Important		2.1%		5.6%	
Australia	Total	870,731	36.9%	1,795	-0.02%	3	Not very important	None	2.6%	na	4.7%	1.9%
	Business	154,136	6.5%	1,671	-0.02%	3	Not very important		2.7%		4.8%	
	Holiday	336,808	14.3%	2,448	-0.02%	3	Not very important		2.9%		5.0%	
	VFR	308,803	13.1%	1,189	-0.02%	3	Not very important		2.5%		4.6%	
Germany	Total	57,466	2.4%	4,753	-0.88%	11	Important	None	1.6%	na	3.3%	5.7%
	Business	2,573	0.1%	2,736	0.57%	1	Very important		3.5%		5.2%	
	Holiday	41,363	1.8%	4,380	-1.50%	12	Important		0.9%		2.6%	
	VFR	8,153	0.3%	2,992	0.61%	6	Important		4.4%		6.1%	
Japan	Total	153,208	6.5%	3,739	-0.27%	9	Very important	-0.74%	2.2%	1.9%	3.7%	2.9%
	Business	7,109	0.3%	2,972	-0.26%	12	Important		0.7%		2.2%	
	Holiday	120,837	5.1%	3,172	-0.27%	9	Very important		1.7%		3.2%	
	VFR	12,117	0.5%	3,634	-0.03%	7	Not very important		10.9%		12.4%	
Korea	Total	107,422	4.5%	3,458	-0.10%	8	Very important	None	4.3%	na	5.8%	18.3%
	Business	3,191	0.1%	1,781	na	na	Very important		2.2%		3.7%	
	Holiday	74,858	3.2%	2,424	-0.13%	8	Very important		4.4%		5.9%	
	VFR	16,522	0.7%	5,078	-0.12%	6	Not very important		4.4%		5.9%	
United Kingdom	Total	306,608	13.0%	3,534	-0.02%	10	Important	-0.65%	3.7%	1.6%	5.4%	2.7%
	Business	12,376	0.5%	2,796	0.41%	5	Important		1.5%		3.2%	
	Holiday	162,916	6.9%	4,119	-0.03%	9	Important		4.5%		6.2%	
	VFR	118,414	5.0%	2,439	-0.02%	9	Important		3.2%		4.9%	
United States	Total	219,882	9.3%	3,513	-0.17%	8	Important	-0.96%	1.7%	1.6%	3.5%	2.9%
	Business	21,263	0.9%	3,540	-0.12%	3	Not very important		1.7%		3.5%	
	Holiday	132,517	5.6%	3,650	-0.24%	8	Important		1.4%		3.2%	
	VFR	42,442	1.8%	2,107	-0.13%	11	Important		3.6%		5.4%	

Notes: (1) March 2006 year.

(2) Estimate from the International Visitor Survey for year end December 2006.

(3) Importance of exchange rates in explaining fluctuations in travel demand: Very important, important, and not important. Not important implies there are many other factors that are much more important in influencing travel demand compared to exchange rates. Such factors might be, for example, flight capacities or marketing effects.

(4) Trend growth is evaluated by comparing average income growth for each market (1990-2005) with income sensitivity – i.e. it is trend growth assuming trend income growth.

Source: NZIER

**Table 2 Summary of results for NZ departures**

		Market size		Impact of a 1 % appreciation in the NZ dollar			Impact of 1 % growth in income	Trend growth
		Departures (1) (number)	Share (1) (% of total)	Departures (% change)	Time to full effect (quarters)	Importance (2)	Departures (% change)	Departures (% p.a.)
Total	Total	1,864,002	100.0%	0.35%	8	Important	2.8%	4.40%
	Business	280,493	15.0%	na	na	na	na	na
	Holiday	800,664	43.0%	0.87%	8	Important	2.2%	3.80%
	VFR	563,367	30.2%	0.27%	8	Not very important	3.2%	4.80%
Australia	Total	938,037	50.3%	0.02%	7	Not very important	2.8%	4.37%
	Business	159,040	8.5%	na	na	na	na	na
	Holiday	413,598	22.2%	0.43%	8	Important	2.5%	4.05%
	VFR	281,885	15.1%	na	na	na	na	na
Fiji	Total	101,122	5.4%	0.05%	7	Important	3.3%	4.85%
	Business	8,245	0.4%	na	na	na	na	na
	Holiday	69,951	3.8%	0.06%	7	Important	3.5%	5.06%
	VFR	14,811	0.8%	0.04%	7	Not very important	2.9%	4.50%
UK	Total	86,212	4.6%	0.15%	12	Not very important	1.7%	3.30%
	Business	9,553	0.5%	0.22%	12	Important	1.6%	3.24%
	Holiday	25,313	1.4%	0.59%	10	Very important	0.9%	2.45%
	VFR	44,386	2.4%	na	na	na	na	na
US	Total	90,359	4.8%	0.87%	9	Very important	0.7%	2.32%
	Business	17,608	0.9%	1.24%	12	Very important	1.8%	3.39%
	Holiday	36,648	2.0%	1.50%	6	Very important	-1.4%	0.20%
	VFR	22,824	1.2%	0.02%	5	Very important	3.2%	4.80%

Notes: (1) Annual, March 2006 year.

(2) Importance of exchange rates as a factor in influencing travel demand: Very important, important, and not important.

Source: NZIER