TRADE EFFECTS ON TOURISM:
SOME EMPIRICAL EVIDENCE FROM NEW ZEALAND

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Abstract

This research investigates the effect of trade on international visitor arrivals into New Zealand. The analysis is based on a consumer choice model that uses time-series data for the period 2004 to 2013 from New Zealand's main visitor origin countries. The results provide strong evidence that New Zealand's trade is statistically correlated with international visitor arrivals. We conclude that the government ought to consider improved trading environments of its partner countries in order to evaluate their own and their trading partner's trade policies and the impacts they may have on the domestic tourism industry.

Keywords: Trade, Business Visitors, Business Infrastructure, New Zealand.

1. Introduction

This research investigates the impact of international trade on visitor arrivals in New Zealand on the basis of aconsumer choice model that estimates data from New Zealand's main visitor origin countries while controlling core demand side influences. A review of the empirical trade literature indicates that less attention has been paid to the expansion of the tourism sector as a valuable strategy for increasing the level of trade. This research attempts to fill this gap and makes a new contribution by examining the impact that international trade may have on New Zealand's tourism sector.The next section provides a brief overview of tourism and trade in New Zealand. Section 3 reviews the theoretical literature. Section outlines the method of analysis and discusses the findings. Section 5 concludes.

2. Some Aspects of New Zealand's Tourism

New Zealand has enaged actively for trade integration for several years through bilateral or plurilateral preferential trade agreements with several countries around the globe (World Trade Organisation, 2009). Poot and Strutt (2010) provide a comprehensive account of New Zealand's trade agreements in force. Following the global financial and economic crisis (GFC) of 2007, many countries werecompelled to intensively engage within their respective geographic regions for trade, finance and investment. GFC also triggered New Zealand to secure more diversified trade and tourism markets.

Rapid economic growth among the Asia Pacific economies created several economic opportunities for New Zealand, including strengthened trade and tourism.Increases in per capita incomes in China, India and other emerging marketstranslated into thousands of Asian visitors coming to New Zealand (Figures 1 and 2). While Australia is the prime visitor origin country for New Zealand, China is in second place as visitors from China increased significantly over the period 2000 to 2015. In 2015, holidays ranked as the most important purpose of a visit, followed by visiting friends and relatives, conferences and conventions, business, and finally education (Statistics New Zealand, 2015, Table 6).

Rising visitor numbers to New Zealand has made a positive contribution to its economy as documented in the New Zealand Tourism Strategy 2015 report by the Ministry of Business, Innovation and Employment. Statistics New Zealand (2016) reported that for the year ended March 2016, tourism generated a direct contribution to gross domestic product (GDP) of 12.9 billion New Zealand dollars (NZD) or 5.6 percent of GDP; employed approximately 7.5 percent of the total number of people employed in New Zealand and generated some 2.8 billion NZD in goods and services tax revenue. At the same time, New Zealand's trade with visitor origin contries (Figure 3) were valued at 70.9 billion NZD while New Zealand's two way trade of goods and services (exports plus imports) was valued at 138 billion NZD for the year ended June, 2016 (Statistics New Zealand, 2016).

Figure 1. International visitor arrivals into New Zealand by country of residence (percentages of total)
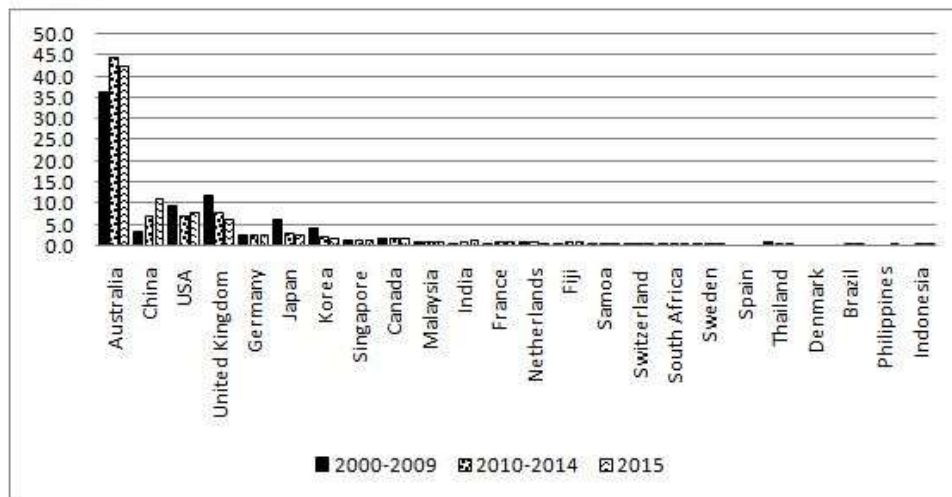
Source: Authors computations using data from Statistics New Zealand (Available from: www.stats.govt.nz).

In view of New Zealand's desire to have diversified markets for its tourism services, greater economic integration, and of the noted economic contribution of the New Zealand's tourism industry , an increased understanding of the effect of trade on tourism is essential for better targeted tourism policies.

Figure 3. New Zealand's trade share with major international visitor arrival countries (percentages of total trade)
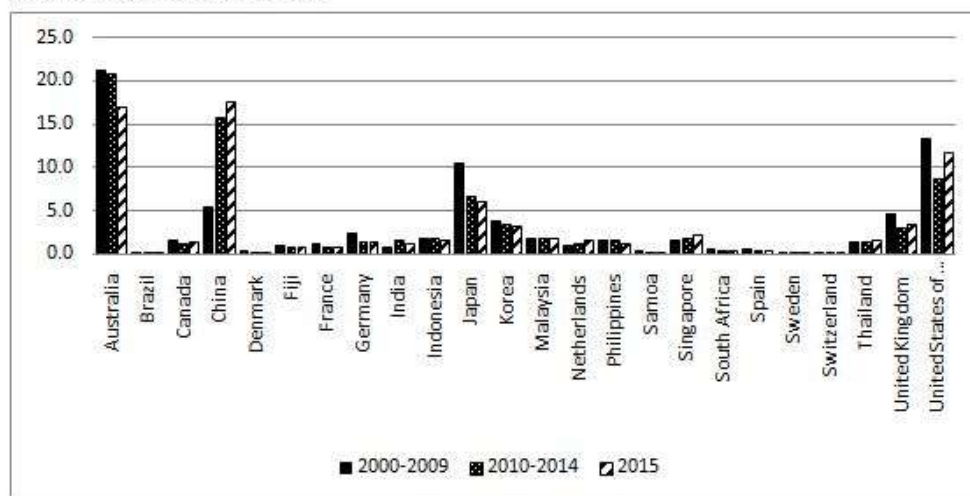
Source: Authors computations using data from Statistics New Zealand (Available from: www.stats.govt.nz).

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3. The Trade and Tourism Literature

According to the theoretical trade literature, open economies generate a positive impact on the well-being of nations, from increases in per capita incomes to reductions in poverty (Santos-Paulino, 2005 and Li and Samsell, 2009). Singh (2010) provides an extensive survey of the literature on the gains from trade. Similarly, tourisms contribution towards growth and the development is noteworthy. Gunduz and Hatemi-J (2005), Sequira and Nunes (2008), Bonham, Gangnes and Zhou (2009), and Min, Phoh and Bak (2016), have shown that countries with a significant tourism sector were economically progressive. On the basis of consumer choice models, the determinants of out and in-bound tourism has been addressed by Grey, 1966; Paraskevopoulos, 1978; O'Hagan and Harrison, 1984; White, 1985. The advancements in data recording and analysis have allowed researchers, for example, Divisekera, 2003;Vogt, 2008;Song et al., 2012;Gatt and Falzon, 2014;and Tavares and Leitao, 2016to empirically unfold the correlates of tourism demand.

Income is found to be a major determinant in people's decision to travel (for example, Song et al, 2012 and Fereidouni et. al., 2014). Price differential is found to be another economic determinant. On the basis of classical economic theoretical framework, Stronge and Redman (1982) and Loeb (1982) found that tourists made a decision to travel and spend on goods if the costs of the destination country's goods are lower than the costs in their home country. Exchange rates also matter as shown by Divisekera (2003) and Seo, Park and Yu (2009). The distance from home country to the destination countryhas been found to be a friction in terms of trade flows as per the gravity model (Anderson, 1979). In terms of the decision to travel, this implies that the greater the distance between the home country and the tourism destination country, the higher the cost of travel.

Destination country-specific variables (safety and security of visitors, value of natural environment, and good governance) have been found to influence people's desire to travel. The destination country general level of safety in adventure activities and incidence of domestic crime can be significantly influential as shown by Jud (1975).Destination country natural environment (mountains, lakes, natural forests, landscape, fresh water river systems, and bird species, amongst others) are strong influences Tribe (2011). Orchiston (2012), in a New Zealand context, has argued that tourists are attracted by the high scenic value of the country.

Institutional economist for example, Kaufmann et al, (2004), North(2005) and Rodrik (2007) have argued that good institutional structures (law and order, property rights, independence of the courts, low corruption and cronyism, and traditions of civic responsibility) favour efficient market outcomes. Tourists value this and get attracted to destinations with good governance where as bad governance can be a deterrant.

Environmentaldeterioration can also influence visitor arrivals as revealed by the findings of Sajjad et.al. (2014) and Zhang et.al. (2015). Extreme weather patterns (storms, floods and earthquake)can damage tourism infrastructureand cause loss of lives. For example, New Zealand was struck by a severe earthquake on 4 September 2010, a second earthquake on 22 February 2011 and a third earthquake in June 2011 (followed by some 3500 aftershocks) causing significant land and property damage, and a loss of 185 lives (Orchiston, 2012; Parker and Steenkamp, 2012).

4. The Method of Analysis and Findings

Our analytical framework is the consumer choice model as outlined by Rugg (1973). The review in the previous section indicated that there are variables other than trade and income that matter for tourists and we attempt to control them in our analysis.Per capita incomes in visitor origin countries *(INC)*, the relative prices between origin and destination countries *(PRI)*, the real exchange rate *(EXR)*, the distance between the origin and the destination country *(DIS)*, good governance in destination country *(GOV)*; and the destination country natural environment *(ENV)* are the variables of our interest. Our measures of trade include exports *(XP)*, imports *(IM)* and total trade *(TRD)*. Equation 1 represents the estimable form.

$$ln\Delta VIS_{i,t}^{NZ} = \delta_0 + \delta_1 ln\Delta INC_{i,t}^{OC} + \delta_2 ln\Delta PRI_{i,t}^{OC-NZ} + \delta_3 ln\Delta EXR_{i,t} + \delta_4 ln\Delta DIS_{i,t}^{OC-NZ} +$$
$$\delta_5 ln\Delta GOV_{i,t}^{NZ} + \delta_6 ln\Delta ENV_{i,t}^{NZ} + \delta_7 ln\Delta TRD_{i,t}^{NZ-OC} + \mu_{i,t} \qquad (1)$$

where, *VIS* is the total visitor arrivals to New Zealand by country of residencefor a stay of less than 12 months for all travel purposes (holiday, visiting friends and relatives, conferences and conventions, business and education), *nz* is New Zealand, *oc* is the origin country, *i* is the country,*t* is the time period, *Δ* is the change operator, *ln* is natural logs; and *v* is the error term. All other variables in eqaution 1 are as defined above.

INC is GDP per capita, PPP (constant 2011 international $). *PRI* is the ratio of the New Zealand consumer price index and the origin country consumer price index. *EXR*is the real effective exchange rate index (2010 = 100). *DIS* is the flight distance from Auckland to the capital city in the origin country. *ENV* is the natural environment in New Zealand measured by forest area (% of land area). *GOV* is good governance in New Zealand measured by the average annual estimates of four dimensions that capture good governance: political stability and absence of violence, control of corruption, the rule of Law, and voice and accountability. *TRD* is New Zealand's total trade with visitor origin countries. The source of data for *VIS*and *TRD* is *Statistics New Zealand* (various issues). *INC, PRI, EXR* and *GOV*are frim the *World Development Indicators* (The World Bank, 2016). *EXR* data for Korea, India, Thailand and Indonesia is from the Asian Development Bank's *Key Indicators 2015* (Asian Development Bank, 2015). *GG* is extracted from the Worldwide Governance Indicators database. The visitor arrival countries in the analysis are: Australia, China, People's Republic of; United States of America, United Kingdom, Germany, Japan, Korea, Republic of; Singapore, Canada, Malaysia, India, France; Netherlands; Fiji, Samoa, Switzerland, South Africa, Sweden, Spain, Thailand; Denmark, Brazil, Philippines, and Indonesia.

Table 1 presents the results. We estimated the effects of trade variables separately so as to avoid and overlapping effects. Our results show that the independent variables explain 82-85 percent of the variation in trade on visitor arrivals with a strong statistical relationship between the independent and the dependent variable. The results in Table 1 show that the signs on coefficients of trade measures are as expected, positive and statistically significant at high levels. Coefficient *DIS* is consistently negative and statistically significant in all three specifications. It imposes significant friction to visitor arrivals in New Zealand. *INC* is has the expected positive sign on its coeficient and statistically significant at the 1 percent level indicating that visitor arrivals to New Zealand increased as per capita incomes in visitor origin countries increased. Our results also reveal positive and statistically significant coefficients of *GOV* and *ENV* providing strong evidence in favour of good governance and natural environment as strong determinants of tourism.

Table 1. Effect of trade on total visitor arrivals into New Zealand

Variables	Cross-sectional estimation		
	Effect of exports	**Effect of imports**	**Effect of total trade**
Constant	8.369	9.432	9.613
	(7.638)*	(7.553)*	(7.470)*
$(ln)\Delta INC$	0.201	0.098	0.131
	(5.702)*	(2.221)**	(3.263)*
$(ln)\Delta PRI$	0.593	0.148	0.424
	(1.460)	(0.336)	(0.964)
$(ln)\Delta EXR$	0.315	0.521	0.259
	(1.310)	(2.026)**	(0.952)
$(ln)\Delta DIS$	-0.237	-0.383	-0.310
	(6.215)*	(8.118)*	(7.431)*
$(ln)\Delta GOV$	1.388	2.174	1.096
	(2.302)**	(3.353)*	(1.643)***
$(ln)\Delta ENV$	0.241	0.275	0.276
	(7.669)*	(7.596)*	(7.499)*
$(ln)\Delta XP$	0.376	...	...
	(9.419)*		
$(ln)\Delta IM$	...	0.175	...
		(6.498)*	
$(ln)\Delta TRD$	...	...	0.369
			(8.332)*
N	240	240	240
F	184.27	158.33	155.42
Adj.R²	0.85	0.83	0.82
DW	2.12	2.11	2.11

Notes: N is the number of observations; F is the F-statistics; Adj.R2 is the adjusted R-square; and DW is the Durbin-Watson statistics. (*), (**) and (***) indicate statistically significant at the 1, 5 and 10 percent levels respectively. (...) indicates variable not tested.

Table 2 shows the findings of the fixed and the random effects estimation procedureas we attempt to check for robustness of our cross-sectional results. The findings in Table 2 are consistent with the results in Table 1. Measures of trade: *EX, IM* and *TRD,* are positively and statistically significantly correlated with visitor arrivals, strongly confirming that New Zealand's trade is an integral variable in in facilitating international visitor arrivals. This finding certainly adds weight to the argument that trade, other than exchanging goods and

services, has much wider value added as it has a spillover effect in enabling peoples' desire to travel to destinations where the exchange of goods and services are being sourced or sold.

Table 2. Effect of trade on total visitor arrivals into New Zealand

Variables	Random effects estimation			Fixed effects estimation		
	Effect of exports	Effect of Imports	Effect of total trade	Effect of exports	Effect of imports	Effect of total trade
Constant	8.481 (7.085)*	9.184 (7.411)*	9.182 (7.359)*	...	...	...
$(ln)\Delta INC$	0.197 (5.252)*	0.072 (1.566)	0.120 (2.927)*	0.199 (5.236)*	0.088 (1.843)***	0.127 (2.991)*
$(ln)\Delta PRI$	0.731 (1.686)***	0.1954 (0.419)	0.554 (1.220)	0.765 (1.750)***	0.235 (0.503)	0.571 (1.253)
$(ln)\Delta EXR$	0.352 (1.336)	0.606 (2.264)**	0.407 (1.494)	0.131 (0.424)	0.093 (0.284)	-0.139 (0.427)
$(ln)\Delta DIS$	-0.229 (5.647)*	-0.349 (7.134)*	-0.301 (6.831)*	-0.307 (6.856)*	-0.436 (8.086)*	-0.395 (7.999)*
$(ln)\Delta GOV$	1.214 (1.884)**	2.165 (3.150)*	0.998 (1.447)	1.035 (1.572)	1.856 (2.639)*	0.703 (0.988)
$(ln)\Delta ENV$	0.244 (7.115)*	0.265 (7.451)*	0.264 (7.387)*	0.299 (7.242)*	0.356 (7.855)*	0.360 (8.160)*
$(ln)\Delta XP$	0.376 (8.984)*	...	...	0.366 (8.061)*	...	...
$(ln)\Delta IM$	...	0.155 (5.267)*	...	...	0.137 (4.403)*	...
$(ln)\Delta TRD$	...	...	0.359 (7.738)*	...	...	0.352 (6.862)*
N	240	240	240	240	240	240
F	182.71	153.68	153.88	154.01	126.64	128.35
Adj. R²	0.85	0.82	0.82	0.84	0.81	0.81
DW	2.16	2.17	2.16	2.48	2.53	2.50

Notes: N is the number of observations; F is the F-statistics; Adj.R2 is the adjusted R-square; and DW is the Durbin-Watson statistics. (*), (**) and (***) indicate statistically significant at the 1, 5 and 10 percent levels respectively. (...) indicates variable not tested.

In terms of our control variables, the results in Table 2 revealed that coefficients *INC*, *DIS*, *GOV* and *ENV* have the expected signs and statistically significant. The results of *DIS* provides strong evidence that distance between New Zealand and its main visitor origin countries is an important determinant of visitor numbers. The positive outcome of *ENV* suggests that New Zealand's natural environment with a diversity in its natural flora and fauna (mountains, lakes, natural forests, landscape, fresh water river systems, and bird species,

amongst others) are major visitor attractants, consistent with Orchiston (2012) who argued that international tourists are attracted by the high scenic value of the country and the potential to view diverse and spectacular landscapes. The results of *GOV* suggests that New Zealand's exemplary achievement in good governance is a major attribute that has attracted an increasing number of visitors over the long-term.

Conclusion

The central focus of this research was to investigate if trade can determine international visitor arrivals in New Zealand on the basis of the consumer choice model. The findings provide strong evidence that New Zealand's exports, imports as well as total trade are statistically significantly correlated with international visitor arrivals. Our findings also confirm that per capita incomes of visitor origin countries, the distance between New Zealand and its main visitor origin countries, New Zealand's achievements in good governance and New Zealand's natural environment are statistically significant correlates of tourism.

The findings here makes a new contribution towards understanding the effect and connection of trade on New Zealand's tourism. Our empirical analysis within the consumer choice modelling framework adds new value to the tourism economics literature as our research has taken a step beyond the perimeters of analyzing the determinants to international visitor arrivals to that of investigating the importance of trade in determining peoples desire to travel.

The findings of this study has important policy implication for the trade-tourism nexus. For New Zealand, in terms of tourims development policies, the government should pay close attention to the trading environments of its partner countries in order to evaluate their own and their trading partner's trade policies and the impacts they may have on the domestic tourism sector. In practice, open trade policies normally have the added benefits of attracting more international visitors.

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