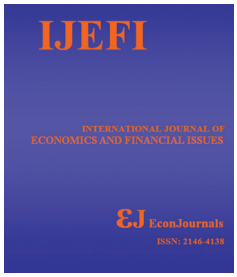

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International Tourism Demand and Macroeconomic Factors

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ABSTRACT

The global financial crisis (GFC) in the early 21st century curtailed international tourism growth, and the tourism industry suffered significantly during the financial crisis. There is evidence in the academic literature that the demand for international tourism declined significantly during the GFC and the impact remain consistent after the GFC. In this paper, we use several country level economic variables and find evidence that political stability and exchange rate volatility is negatively correlated with international tourism demand for our sample developed and emerging country group. Therefore, we conclude that the favourable macroeconomic policy, governance mechanisms and lower exchange rates are desirable for the growth of a tourist-based economy.

Keywords: Tourism Income, Exchange Rate, Global Financial Crisis, Macroeconomic Factors, Governance
JEL Classifications: G14, G15

1. INTRODUCTION

The tourism industry and its economic and social significance have been ignored by governments in emerging economies for several years. Even though the governments of those countries have started to recognise the economic importance of the tourism industry in the last few decades, but there are so much to do to develop a sustainable tourism industry (Crouch and Ritchie, 1999). Several countries also imposed a broad range of taxes on the tourism sector and that have significantly added to the cost and well-established concept in the field of tourism. The tourism industry is now at the forefront of economic research and governments are increasingly invested in this booming sector. Income from the international tourism industry has also become a leading source of foreign revenue for many countries (e.g., Maldives). In Australia, inbound international tourism income was about 14.36% of total exporting income during 2009, dropping to about 11% in 2012. The same trend is also visible in other countries, including India, Japan, Germany, the UK and the USA during 2009-2012.

A plethora of research had been conducted on the causes of, effects of and policy responses to the global financial crisis (GFC) in Asia and the rest of the world using multi-country studies (Chor and Manova, 2011; Claessens and Kose, 2010; Crotty, 2009; Fidrmuc, 2010). For example; Willenbockel and Robinson (2009) assess the impact of the GFC on world commodity prices and trade in developing countries. Their results show that the impact of the GFC on developing countries through the channel of changes in international trade differs widely in magnitude across country groups. According to Weaver (2012), the GFC has relegated sustainability-related issues around tourism, where Kenway and Fahey (2010) argue that longer term implications for sustainability are more subtle and relate to the climate of anger, anxiety and resentment as a consequence of pervasive hardship and uncertainty.

Webber (2001) investigates the long-run determinants of outbound tourism from Australia to its nine major destination countries using exchange rate volatility as a control variable (unique in an Australian context) and by using a composite substitute price variable for the period of June 1983-December 1997. The results show that the variance of the exchange rate volatility is the most significant determinant of the long-run tourism demand, the result is further supported by Dwyer et al. (2002).

Further, Lim (1997) and Lim and McAleer (2001) investigate the long run demand movement by Hong Kong and Singaporeans

tourists to Australia. They examined some of the leading macroeconomic variables to explain tourism demand; including gross national income (GNI) per capita, tourism prices in Australia, transportation costs and exchange rates between the two countries and Australia and found evidence that exchange rates and transportation costs are the most dominant factors for international tourist to choose a country.

Additionally, Belloumi (2010) analyses the role of tourism in the economic growth of Tunisia using the sample period of 1970-2007. His study includes the real effective exchange rate along with the real gross domestic product (GDP) per capita and real international tourism receipts (per capita) as determinants to examine the relationship between economic growth and tourism. He suggests that co-integration exists in the relationship between tourism and economic growth. This result is further supported by Dristakis (2004) who finds a similar result using a different sample size.

In this paper, we select a number of country level variables in order to determine the growth and decline of the international tourism industry during and after the GFC. We use political stability index, internet users (per 100 population), GNI (Atlas Model), GDP growth rate (annual %), foreign direct investment (FDI) inflow (% of GDP), exports of goods (% of GDP), exchange rate (US Dollar) and corruption perception index (CPI) as an independent variable and international tourism demand as a dependent variable. We select countries with the largest economies in the world, including emerging and developed economies, to examine the impact of the negative growth in international tourism industry. Our sample country includes Australia, China, Germany, India, Japan, the UK and the USA.

2. RESEARCH METHODOLOGY

Two analytical approaches have been used for this research. First: We include descriptive statistics and correlation analyses, and, Second: We use a linear regression model following balanced panel data analysis. For the linear regression model, we use the following equation:

$$Tourism_{i,t}=a+\beta_1 Accountability_{i,t}+\beta_2 Exports_{i,t}+\beta_3 GDP_{i,t}+\beta_{4i,t} Stability+\beta_5 Corruption_{i,t}+\beta_6 Exchange_{i,t}+\beta_7 FDI\ Iflow_{i,t}+\beta GDP_{i,t}+\beta_8 GNI+\beta_1 InternetUses_{i,t}+\varepsilon_{i,t} \quad (1)$$

Here, $Tourism_{i,t}$ is the dependent variable and α is the constant. Accountability is the voice and accountability of the government to the public collected from the World Bank Governance database. Export is the export of goods and services of a country as a percentage of GDP; GDP is the GDP growth rate in annual percentage; stability is the political stability and absence of violence and terrorism; Corruption is the control of corruption estimate collected from the TI database; Exchange is the international exchange rate of the local currency; FDI inflow is the FDI net inflows as a percentage of GDP; GNI, the GNI per capita (Atlas method), is a proxy variable for tourists' income. Internet Users is the number of Internet users per 100 people in a country.

3. DATA

We use data from a number of different sources. These sources include the World Bank, International Monetary Fund, transparency international database and CIA database. The study uses nine independent variables, including accountability index, corruption perception index (CPI), exchange rate (US dollar), export of goods (percent of GDP), FDI net inflow (percent of total export), GDP growth rate (percent), GNI index (Atlas Model), internet users (per 100 population), political stability index and tourism income (percent of GDP) to determine the impact of inbound international tourism demand during the GFC for the selected countries. Exchange rate data are collected from the International Monetary Fund database from 2004-2013. While selecting the sample countries, the study uses two approaches, first availability of dataset on open access sources and second, listed in the World Bank database as six largest economies. The study also includes Australia as the largest economy of Oceania and a point of interest. The sample developed countries include Australia, Germany, Japan, the UK and the USA and emerging countries include China and India.

FDI as a percentage of GDP, GDP growth rate (annual), international tourism receipt (percent export), and number of internet users (per 100 people) data are collected from "World Bank" databases. The study also collects political violence and government accountability data from the "World-Bank" corporate governance database. It is noted that the "World-Bank" uses six corporate governance indicators for measuring good governance, which are divided into three clusters. In this paper, we use two corporate governance indicators from the "World-Bank" governance database rather than using all six indicators due to multicollinearity issues. The governance indicators are measured in units ranging from −2.5 to 2.5. Higher values correspond to better governance outcomes and lower values correspond to poorer outcomes.

4. DATA ANALYSIS AND RESULTS

Table 1 reports the descriptive statistics for the independent variables used in this paper. It is found that the Australia (1.46), Germany (1.38) and UK (1.36) have the highest points in accountability indices and China has the lowest (−1.60). The same trend can also be seen in the corruption index, internet users per 100 population and political stability index. Further, Australia receives the highest percentage of tourist arrival income and receives 12.72% of its GDP income from the tourism sector.

Table 2 exhibits the correlation coefficients between the independent variables for the observation period. It is to note that we initially selected 12 independent country-level variables for cross sectional analysis, but removed two variables due to multicollinearity problems. Nevertheless, we also run the pooled OLS estimation method using equation (i) by removing one predictor variable at a time for the robustness test.

Table 3 presents the balanced panel data analysis results for international tourism demand using equation i. It is found that

Table 1: Descriptive statistics of the independent variables for each country

Country	Accountability index	Corruption perception index (CPI)	Exchange rate (with US dollar)	Export of goods (% of GDP)	FDI net inflow (% of total export)	GDP growth rate (%)	GNI index (Atlas model)	Internet users (per 100 ppl)	Political stability index	Tourism income (% of GDP)
Australia										
Minimum	1.40	1.97	0.97	17.00	−3.62	1.74	25510	62.00	0.83	10.58
Maximum	1.53	2.10	1.36	22.52	6.01	4.16	65520	83.00	1.00	14.42
Mean	1.46	2.04	1.17	19.85	3.37	3.00	43573	72.39	0.92	12.72
China										
Minimum	−1.68	−0.64	6.20	26.40	3.22	7.65	1490	7.30	−0.66	2.54
Maximum	−1.46	−0.48	8.28	39.13	4.93	14.16	6560	45.80	−0.36	4.13
Mean	−1.60	−0.56	7.16	32.20	4.19	10.22	3582	25.45	−0.52	3.23
Germany										
Minimum	1.31	1.70	0.63	38.55	−0.36	−5.15	30750	64.73	0.63	2.98
Maximum	1.47	1.86	0.83	51.79	1.91	4.01	46100	83.96	1.00	3.66
Mean	1.38	1.76	0.76	46.39	0.97	1.32	40654	76.73	0.84	3.27
India										
Minimum	0.35	−0.57	41.35	17.55	0.80	3.89	630	1.98	−1.33	3.97
Maximum	0.45	−0.30	58.60	24.82	3.55	10.26	1570	15.10	−0.99	4.96
Mean	0.41	−0.46	47.24	21.66	1.84	7.53	1123	6.59	−1.19	4.37
Japan										
Minimum	0.92	1.21	79.79	12.70	−0.11	−5.53	37150	62.39	0.84	1.35
Maximum	1.09	1.61	117.75	17.75	0.61	4.65	47690	86.25	1.09	2.31
Mean	1.01	1.40	99.44	15.19	0.17	0.82	40924	75.55	0.95	1.72
UK										
Minimum	1.29	1.56	0.50	25.21	0.18	−5.17	34990	65.61	0.10	5.94
Maximum	1.61	1.96	0.65	32.07	10.93	3.43	45990	89.84	0.64	6.66
Mean	1.36	1.70	0.59	29.03	4.88	1.14	40197	78.92	0.36	6.28
USA										
Minimum	1.08	1.26	1.00	9.64	1.06	−2.80	43690	64.76	−0.20	8.73
Maximum	1.31	1.86	1.00	13.53	2.35	3.80	53670	84.20	0.63	9.87
Mean	1.14	1.39	1.00	11.78	1.61	1.75	48979	72.66	0.38	9.16
SD	0.05	0.04	0.14	1.50	2.52	0.79	12029.47	6.90	0.04	1.37
Skewness	0.14	−0.34	−0.22	−0.14	−2.01	−0.22	0.34	−0.10	−0.27	−0.21
Kurtosis	1.50	1.78	1.55	2.69	6.27	1.71	2.21	1.75	2.89	1.57

GDP: Gross domestic product, FDI: Foreign direct investment, GNI: Gross national income, SD: Standard deviation

Table 2: Correlation of coefficient of independent variables for the observe countries

Variables	Tourism income (% of GDP)	Political stability index	Internet uses per 100 population	GNI (Atlas model)	GDP growth rate (Annual %)	FDI inflow (% of GDP)	Export of goods (% of GDP)	Exchange rate (US Dollar)	Corruption perception index (CPI)
Political stability	−0.649**								
Internet users (per 100 population)	−0.779**	0.240**							
GNI (Atlas model)	−0.775**	0.358**	0.965**						
GDP growth rate (annual %)	0.136	0.631**	−0.515**	−0.376**					
FDI inflow (% of GDP)	−0.305*	0.359	0.207	0.112	0.169**				
Exports of goods (% of GDP)	−0.332**	−0.056	0.682	0.607	−0.579	0.167			
Exchange rate (US Dollar)	0.886**	−0.497	−0.893	−0.869	0.266	−0.171**	−0.493**		
Corruption perception index (CPI)	−0.061**	−0.164**	0.140**	−0.039**	−0.110**	0.637	0.092**	−0.004	
Accountability index	−0.156	0.218**	−0.126**	−0.023**	0.259	−0.369*	−0.485	−0.099*	−0.227**

The values reported below are the estimated coefficient. Values with **represent statistical significance at the 5% level and values with *represent statistical significance at the 5% level.
GDP: Gross domestic product, FDI: Foreign direct investment, GNI: Gross national income

the accountability is positively correlated with the inbound international tourism income and the effect is statistically significant at the 5% level with the coefficient of 0.350. The political stability index is positively correlated with the Tourism index at the 5% level with a coefficient of 0.535.

Further, the exchange rate is negatively correlated with tourism income at 1% level with the coefficient of −0.845. The study provides standardised coefficient in Table 3. This provides evidence that countries with a lower exchange rate, e.g., China and India attract more international tourists than countries with a higher exchange rate (e.g., the UK). Further, GNI (Atlas Model) is negatively correlated with inbound tourism income at the 10% level. This is an interesting result yet consistent with previous research. Additionally, export of goods (percentage of GDP) is negatively correlated with the inbound international tourist income at 1% level.

Table 3: Least square model (all variables)

Variable	Standardized coefficient	Standard error	t-statistic	P
Constant	16.059	1.465	10.959	0.000
Accountability index	0.350	0.635	1.991	0.051
Corruption perception index (CPI)	0.301	1.100	0.995	0.324
Exchange rate (Us Dollar)	−0.845	0.008	−10.909	0.000
Export of goods (% of GDP)	−0.717	0.020	−11.404	0.000
FDI inflow (% of GDP)	0.014	0.085	0.245	0.807
GDP growth rate (annual %)	0.099	0.088	1.022	0.311
GNI index (Atlas model)	−0.340	0.000	−1.839	0.071
Internet users (per 100 population)	−0.468	0.026	−2.324	0.024
Political stability index	0.535	0.870	2.934	0.005
R^2		0.866		
Adjusted R^2		0.846		

GDP: Gross domestic product, FDI: Foreign direct investment, GNI: Gross national income

On the contrary, the percentage of internet users are negatively correlated with tourism income at 5% level, and FDI inflow and GDP growth rate (annual percentage) are positively correlated with the percentages of international tourism income, although the effect is not statistically significant. The adjusted R^2 value or explained variation of this model is 0.846.

As a robustness test, we run the pooled OLS estimation method using equation (i) by removing one predictor variable at a time to determine the impact of that predictor variable in the model. Overall, the results from robustness tests are generally consistent with those reported in Table 3[1].

5. CONCLUSION

Our research finds evidence that the income from the international tourism declined during the GFC and the effect remain constant after the GFC, which is aligned with the previous literatures (Weaver (2012). For example, Australia, the UK and the USA's tourism sector suffered significantly during and after the GFC. The study finds that macroeconomic factors played an important role reducing tourism income during and after the financial crisis (Prideaux and McNamara, 2013). For example, it is found that countries' accountability and political stability are crucial for tourism development and, those countries having higher political stability and accountability receive higher tourism income (Weaver 2012; Kenway and Fahey 2010). It is found that the export (export of goods) oriented countries, such as Germany and Japan are less reluctant on the international tourism income than their counterparts and suffer less significantly during the GFC. Additionally, Meng et al. (2015) suggest that the GFC has had negative long-run effects on the overall development of Asian economy.

The exchange rate plays a vital role in international tourism demand. Evidence suggests that a higher exchange rate is negatively correlated with the international tourism arrivals and, during and after the GFC, countries with a higher exchange rate are less favourable destinations for international tourists (Webber, 2001). This result is further supported by the study of Perles-Ribe et al. (2016). We also find that FDI and GDP growth (annual percent) rates are not statistically significant in their association with the international tourism income.

The policy implications of this paper are also valuable. Our research finds evidence that countries with political violence are least favourable destinations for international tourists (Kenway and Fahey, 2010). We also found that the higher exchange rates and macroeconomic policy can influence inbound international tourism demand. A favourable macroeconomic policy, governance mechanisms, low level of violence and lower exchange rates are desirable for the growth of a tourist based economy.

1 Results are available upon request

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