The Determinants of Inbound Tourism In European and Asia-Pacific Countries

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Employing the fixed-effects estimation method, we analyze how economic and social advancements as well as the development in other aspects of a country determine the competitiveness of its tourism sector. Our panel data consists of observations for 20 countries in Asia-Pacific and 38 countries in European region over the 2000-2013 period. Our findings suggest that in the long run, a country's physical infrastructures, economic growth status, trade liberalization, social and political development, and natural resources potential are significant determinants of its inbound tourism market. Compared to previously obtained results, the results of fixed-effects estimations with interaction terms indicate that social and political stability, health of the economy and natural resources preservation efforts are more important to low-and-middle-income countries than to high-income- countries.

Keywords: Asia, Europe, tourism, tourism arrivals, fixed-effects models

JEL Classification: L83, O52, O53, C23

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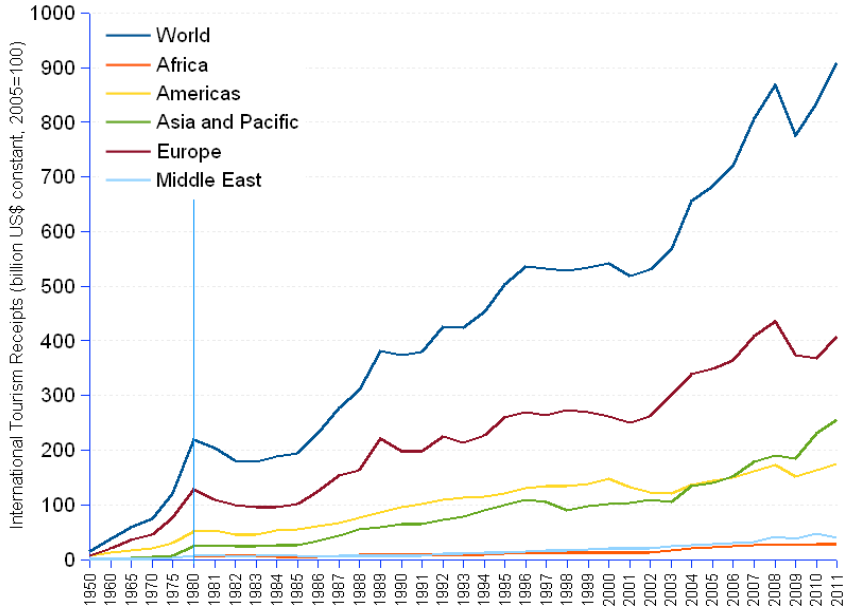
I. Introduction

Global tourism has achieved enormous growth over the recent years. The number of tourists all over the world increased nearly 27 times from 1950 to 2013 (Gokovali and Bahar, 2006). Diversified into a variety of types, the tourism sector has grown faster than any other industry, and accounted for almost 10% of total international trade and almost half of total trade in services in 2003. (Eilat and Enav, 2004). Furthermore, tourism contributed more than 10 percent to the global gross domestic product (GDP) in 2004 (Phakdisoth and Kim, 2007). According to the World Tourism Organization estimates in 2014, tourism has become the third largest economic activity, slightly surpassed by oil exports and motor vehicles industry. Statistical analysis also shows that as tourism has become cheaper over time, the robust growth of the tourism sector is driven by the rapid increase in tourist flows across the globe.

At the regional level, Europe has been the leading exporter of tourism services for the last six decades. In 2011 European countries attracted 517.5 million tourists, who helped generate $463.4 billion of tourism receipts in constant 2005 US dollars. The second most popular region is Asia-Pacific, with 218.1 million tourists that generated $289.4 billion (World Bank). It is undeniable that the European and Asia-Pacific regions have become the two major inbound tourism markets that are the driving forces behind the phenomenal growth in the global tourism industry (Fuller, 2013).

FIGURE 1.

INTERNATIONAL TOURIST RECEIPTS (BILLION US$ CONSTANT, 2005 = 100), 1950 – 2011



Source: areppim

The impressive growth of tourism has enormous impact on both advanced and emerging economies. A crucial part of volume exports, tourism receipts play as a major provision of foreign currency to the destination country. This source of earnings helps the country alleviate the foreign exchange gap, and finance capital-goods imports (Sinclair, 1998). Furthermore, government revenues generated by tourism also support manufacturing expansion (Sinclair, 1998). Especially in emerging Asian economies, tourism is a key factor in generating employment in both formal and informal sectors. A labor-intensive industry, tourism enables a significant part of the population to move from their domestic roles or informal economic activities to higher-paid jobs in the formal sectors (Sinclair, 1998). Tourism also stimulates technology and knowledge transfers, encourages foreign investments and promotes peace through cultural interactions (Gkovali and Bahar, 2006).

In light of the benefits that tourism can bring about to an economy, policy-makers have been increasingly concerned with how government activities, both in terms of public finance and policy enhancement, can add value to the tourism sector. For example, in 2009, the Thai government issued a policy that exempts visa application fees and reduces tax rates on many tourism-related activities in order to mitigate the negative impacts of its political crisis. In 2015 Indonesia has poured more than $98 million into tourism marketing and promotion in the hope that the country can welcome at least 10 million foreign tourists. In general, there has been a strong incentive for the government to analyze on which development aspects it should focus in order to boost the competitiveness of the country's tourism, or to regain its reputation as an attractive tourism destination under unfavorable circumstances such as epidemics, natural disasters or political instability.

There have been a lot of research efforts that throw light on the determinants of inbound tourism in a specific country market. With the use of static and dynamic panel data methods, Phakdisoth and Kim (2007) conclude that tourism in Laos is not a luxury good and thus not responsive to changes in income and relative price levels. Their findings suggest that destination-specific factors such as communication and transportation infrastructures, political stability, and the economic relationships between origin and destination countries play the most crucial role in attracting tourism inflows to a developing country, in this case, Laos. Similarly, Naudé and Saayman (2005) assert that tourism infrastructures, the level of development, marketing and information, and political stability are contributors to the development of African tourism. Other developed-countries-related factors, such as the income level of the origin country, and cost of travel and relative prices, do not explain the demand for African tourist service. Furthermore, Eilat and Einav (2004) reconfirm in their paper that exchange rates only matter for tourism in developed countries. According to them, developing countries should focus on facilitating their overall political stability and improving the availability and quality of tourism infrastructures in order to enhance tourist inflows into their countries.

The common approach in existing literature is to look at tourism under the scope of supply and demand between pairs of countries. Specifically, Phakdisoth and Kim's and Naudé and Saayman's papers view destination countries as differentiated tourism products and investigate how consumers in each origin market would make decisions based on their preferences. In a roughly similar way, Eilat and Einav's paper takes into account both the countries of origin and destination and shows that different determinants are important to different markets.

However, in several cases, the primary goal of tourism-related policies is to maximize the number of inbound tourists regardless of where they come from. For example, a country's reform of its air and ground transportation infrastructures usually aims to attract as many visitors as possible. Such an investment does not necessarily target travellers from any particular country. Therefore, our research attempts to take an approach that disregards the tourists' countries of origins in investigating potential determinants of tourist inflows. The analysis aims to explore the factors that make a country an attractive destination to tourists across the globe.

In this paper, we apply fixed-effects models to examine tourism data of 58 countries in Asia-Pacific and European regions in order to discover the determinants of the number of inbound tourists who visited the countries in the period from 2000 to 2013. We look into factors which represent the countries' physical and social infrastructures, expenditures on tourism development, and their natural potentials as tourist attractions. The main question is whether a country's economic status, its physical, social and other types of infrastructures, and tourism spending and investments have positive relationships with the competitiveness of its tourism industry in the last decade.

In section II of this paper, we propose the empirical methods – how we utilize the data and the fixed-effects models to obtain meaningful results. Section III describes the dataset and explains our intentions in choosing the variables. Section IV presents and interprets the results of estimating our models in the context of our research question. The last section offers concluding remarks.

II. Empirical Approach

We assume that the attractiveness of a country as a travel destination, measured by tourist inflows, is a linear function of the country's characteristics and the time fixed effects which affect all countries. The fixed-effects model is proposed as follows:

$$y_{it} = \beta_0 + \beta_1 x_{it} + \alpha_i + \tau_t + u_{it}$$

In the model, y_{it} denotes the total number of international tourist arrivals to a specific country i at time t. x_{it} is the vector of time-variant tourism determinants reflecting both the economic and social infrastructures and the intrinsic tourism potentials of the country. α_i represents the time-invariant unobserved factors that affect tourists' decisions to visit the country, which can be correlated with x_{it}. τ_t

is the time fixed effects that affect all countries identically. μ_{it} is the idiosyncratic, which is uncorrelated with x_{it}, α_i and τ_t.

We estimate the model using panel data for 20 Asia-Pacific and 38 European countries, which provides generous degrees of freedom. The fixed-effects model has been frequently employed to explore the determinants of tourism demand in literature, as it allows for country-specific effects that can be correlated with the independent variables. The fixed-effects estimator is also robust to the omission of time-constant independent variables, which is a valid concern in our analysis because there are many unobserved or immeasurable determinants of a country's tourism sector such as the friendliness of local people, climate, etc., which we cannot specify in the model. Although time-invariant regressors cannot be included in the fixed-effects model, we can still examine their effects through interaction terms.

On the other hand, there are some concerns about the assumptions behind the validity of fixed-effects estimators. In order for the estimator to be consistent, the strict exogeneity assumption requires the idiosyncratic errors to be uncorrelated with the explanatory variables across all time periods:

$$E(u_{it}|x_{it}, \alpha_i, \tau_t) = 0.$$

This assumption may not hold in subtle ways. If the model omits time-variant variables correlated with both tourist inflows and some independent variables in the model, or there is feedback from the dependent variable to some independent variable, the fixed-effects estimators are biased. Measurement errors can also lead to the violation of strict exogeneity. As collecting data in developing countries is challenging, development data is prone to mismeasurement, raising the concern about biased estimators. In order for the fixed-effects estimators to be efficient, the errors must be serially uncorrelated

$$(Cov(u_{it}, u_{is}|x_{it}, \alpha_i, \tau_t) = 0 \text{ for all } t \neq s)$$

and homoskedastic

$$(Var(u_{it}|x_i, \alpha_i) = Var(u_{it}) = \sigma_u^2)$$

While we can easily accommodate for heteroskedasticity in our estimations, serially correlated errors may distort our analysis.

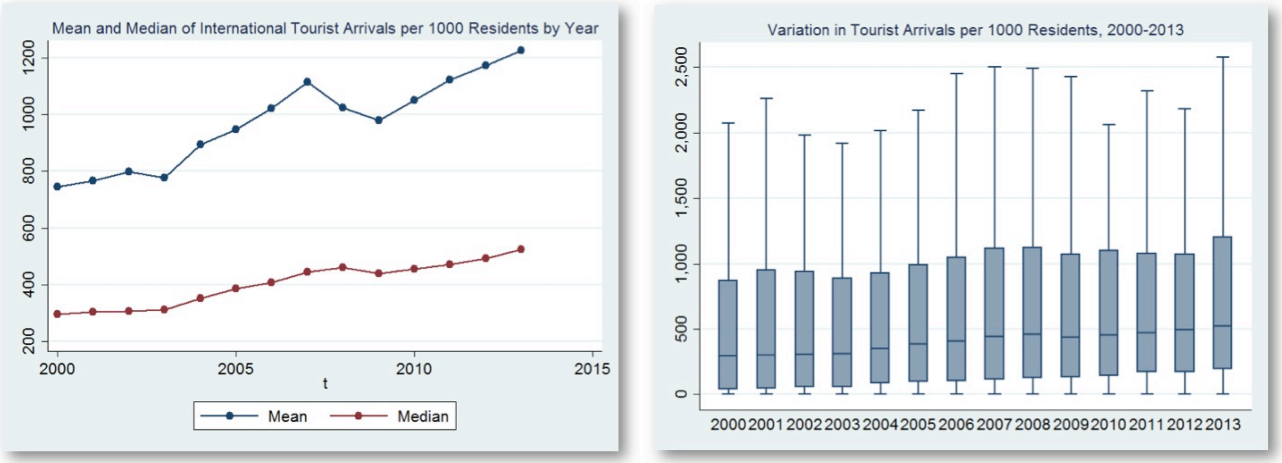
III. Data and variables

Our analysis focuses on 20 Asia-Pacific and 38 European countries. The data is retrieved from various databases published by the World Bank (WB), the World Tourism and Travel Committee (WTTC) and the Asian Development Bank (ADB). Our key dependent variable is the total number of international tourist arrivals per 1,000 residents in each country from 2000 to 2013. We retrieve data on total number of inbound tourists from the WTO, which defines arrivals to be "the flows of international visitors to the country of reference: each arrival corresponds to one inbound tourism trip" (WTO). If a tourist visits a country multiple times a year, each trip is counted as one arrival. The data does not distinguish between different travel purposes such as leisure, business, or other short stay purposes. The total number of international tourist arrivals per 1,000 residents is calculated as the ratio between total international inbound tourists and population multiplied by 1,000. The variable is then log transformed in order for the estimators to have elasticity interpretation.

Figure 2 shows the means and medians of the number of international tourists arrivals per 1000 residents across the countries in our data over time. Generally, foreign tourist inflows increased over the years from 2000 to 2013, although there was a slight drop around 2002-2003 due to the Early Recessions and a more significant tumble in 2008 due to the financial crisis.

FIGURE 2.

CROSS-COUNTRY VARIATION IN THE NUMBER OF INTERNATIONAL TOURIST ARRIVALS PER 1000 RESIDENTS, 2000 – 2013



In the context of our research question, it is straightforward why we choose the total number of international tourist arrivals as our key regressand. Since it is reasonable to assume that the majority of

tourists only travel to countries of their preferences, the total number of international arrivals in a country is a good predictor of how attractive the country is as a tourist destination.

In our paper, we introduce 11 independent variables to account for the countries' physical, social and other types of infrastructures as well as capital investments and government expenditures on tourism development. Comprehensive definitions of all independent variables are summarized in Table 1.

TABLE 1.
SUMMARY DESCRIPTION OF KEY VARIABLES

Name	*Definition*
Capital Formation	*Capital formation (% of GDP) - consists of outlays on additions to the fixed assets of the economy, including land improvements, equipment purchases, and the construction of roads, railways, hospitals, industrial buildings, etc., plus net changes in inventory level, according to the World Bank's definition. The variable, therefore, represents the improvement in physical infrastructures of the country.*
Tourism Spending	*Government individual spending (% of GDP) - is the proportion in GDP of national government spending on travel and tourism services that are directly linked to tourists, such as cultural services (eg: museums) or recreational services (eg: national parks), as defined by the WTTC. The variable represents the government's willingness to invest in tourism promotion as a priority.*
Tourism Investment	*Tourism investment per capita (constant 2011 US$) – includes capital investment by all industries directly involved in Travel & Tourism. According to the WTTC's definition, this also constitutes investment spending by other industries in specific assets such as new visitor accommodation and passenger transport equipment, as well as restaurants and leisure facilities for specific tourism use. This variable represents the infrastructural development of the tourism sector in a country.*
GDP	*Gross domestic product per capita (constant 2005 US$) - is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes minus any subsidies not included in the value of the products, as defined by the World Bank. The variable represents the economic growth status of a country. We will use per capita GDP lagged by one year as a regressor.*
Unemployment	*Unemployment rate (% of total labor force) – is the share of the labor force that is without work but available for and seeking employment. Unemployment, along with per capita GDP, is an indicator of the health of the economy.*
Price Level	*National price level - is obtained by dividing the PPP conversion factor (GDP) by the market exchange rate, as defined by the World Bank. The ratio reflects how many dollars are needed to buy a dollar's worth of goods in the country as compared to the United States, therefore enabling us to compare the cost of the bundle of goods that make up GDP across countries (World Bank).*
Openness	*Openness ratio - is the total value of exports and imports divided by total value of GDP. This represents the country's degree of openness in its course of development.*

Internet	*Internet users per 100 residents – is the number of individuals who have used the Internet (from any location) in the last 12 months. Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc. The variable is a proxy for a country's communication infrastructure, specifically, the effects of developing network and information on tourism promotion. The variable is relevant in today's world as communication and information technology have enabled countries to effectively and cheaply promote their images via the Internet. To account for possible lags in the effects of tech, we use internet users per 100 residents lagged by one year as one of the regressors.*
Urbanization	*Proportion of urban population – refers to the percentage of people living in urban areas in total population. The variable reflects the country's urbanization and modernization process.*
Rule of Law	*Rule of law index estimate – is estimated by the World Bank as a measure of "the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." (WTO) The estimate, ranging from approximately -2.5 to 2.5, is the country's score in units of a standard normal distribution. The variable captures the social and political infrastructures of the country.*
Protected Area	*Terrestrial protected areas (% of total land area) - are totally or partially "protected areas of at least 1,000 hectares that are designated by national authorities as scientific reserves, national parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes, and areas managed mainly for sustainable use" (World Bank). The variable is a proxy for a country's natural resources potential in developing tourism. We use terrestrial protected areas lagged by one year as one of the regressors.*

Among the 11 regressors, capital formation, government tourism spending, tourism capital investment and lagged per capita GDP reflect the country's level of economic development and infrastructure improvement that are related both directly and indirectly to the tourism sector. These variables are expected to have strong positive effects on tourist inflows, and are log-transformed to have the constant elasticity interpretation.

The rapid growth of communication and information technology, especially of the World Wide Web, has created new, cost-effective channels for tourism promotion and sales (Batinić, 2013). Modern technology not only enables information on tourism products and services to reach the global community at minimal cost, but also helps tourists research, communicate and navigate while travelling. To account for the impacts of technology development on tourism, our models include the number of lagged Internet users in each country as a proxy for the country's level of communication and information technology. Controlling for other infrastructure variables, we expect technology to have a positive effect on the growth of the tourism sector.

It is noteworthy that tourism price elasticity — the relationship between tourists' decisions of travel destinations and the price levels in the destination countries — is widely explored in literature. The

common approach to price elasticity has been to examine tourism supply and demand between pairs of origin and destination countries (Eilat and Einav, 2004). Such an approach allows for price level comparison between specific pairs of countries, which resembles tourists' utility maximization and decision-making process. However, our variable for countries' price levels reflects the price levels as compared to that of the United States. These price levels represent the relative living costs in different destination countries, but they are not appropriate for comparing living costs between any specific pair of origin and destination countries. Therefore, the coefficient on the price level variable in our model is interpreted as the effect of changes in the cost of living on tourist inflows in general, without reference to any origin country. We expect the coefficient on price level to be negative, as holding other factors equal, tourists are expected to prefer cheaper destinations.

While physical infrastructures and price levels reflect the economic situation of the destination country, the proportion of terrestrial and marine protected areas in total territorial area represents the country's potential of tourism development as the result of its geographic position and natural resources. Moreover, as a time-variant variable, changes in the protected areas tell us about the country's efforts to preserve and promote its natural endowments. The variable is expected to have a positive effect on tourist inflows.

We account for the impact of the country's social and political infrastructures on tourism by the Rule of Law Index. Political stability, law enforcement and human rights conditions are expected to strongly affect tourists' safety and experience in the destination country, so we expect the coefficient on the Rule of Law Index to be positive.

Table 2 lists all key variables, as well as their sources and descriptive statistics across time.

TABLE 2.

SUMMARY STATISTICS OF KEY VARIABLE

Name of Variables	Mean			Sources
	Overall	High-Income Countries	Low-and-Middle-Income Countries	
Number of International Tourist Arrivals per 1,000 Residents	974.96 (2648.40)	1,441.03 (3225.31)	158.15 (197.87)	United Nations World Travel Organization (UNWTO)
Capital formation (% of GDP)	24.81 (6.45)	23.98 (5.56)	26.26 (7.56)	Asian Development Bank (ADB) and World Bank (WB)
Tourism Spending (% of GDP)	3.02 (2.98)	2.76 (3.03)	3.47 (2.84)	World Tourism and Travel Committee (WTTC)
Tourism Investment per capita (constant 2011 US$)*	3.58×10^{7} (7.37×10^{7})	5.32×10^{7} (8.77×10^{7})	0.52×10^{7} (0.53×10^{7})	WTTC
Per capita GDP (constant 2005 US$)	18,837.37 (19,787.32)	28,306.22 (19,139.12)	2,242.80 (1,781.34)	WB
Unemployment Rate (%)	7.79 (6.22)	7.47 (5.78)	8.35 (6.90)	WB
National Price Level	0.67 (0.38)	0.83 (0.36)	0.38 (0.22)	WB
Openness Ratio (%)	103.75 (71.24)	115.65 (83.31)	82.91 (33.65)	WB
Internet Users per 100 Residents	39.48 (29.35)	53.66 (25.74)	14.64 (15.49)	WB
Urbanization Rate (%)	63.67 (21.49)	73.78 (16.82)	45.94 (16.81)	WB
Rule of Law Index	0.48 (1.02)	1.05 (0.80)	-0.52 (0.42)	WB
Protected Area (% of Territorial Area)	12.97 (10.00)	13.80 (9.47)	11.50 (10.73)	WB

Note: Standard deviations are reported in parentheses.

IV. Results

TABLE 3.

REGRESSION ESTIMATES OF THE EFFECTS OF SOCIO-ECONOMIC VARIABLES ON THE NUMBER OF INTERNATIONAL TOURIST ARRIVALS

(DEPENDENT VARIABLE: LOG(ARRIVALS))

Independent Variables	*Pooled OLS Estimates*	*Fixed-effects Estimates*	
log(Capital formation)	*0.558***	*0.383****	*0.348****
	(0.256)	*(0.090)*	*(0.080)*
log(Tourism Spending)	*0.049*	*-0.004*	*-0.002*
	(0.058)	*(0.007)*	*(0.007)*
log(Tourism Investment)	*-0.918****	*-0.402****	*-0.392****
	(0.080)	*(0.071)*	*(0.062)*
log(Lagged per capita GDP)	*1.183****	*0.879****	*0.805****
	(0.158)	*(0.148)*	*(0.114)*
Unemployment Rate (%)	*-0.021***	*-0.013***	*-0.015****
	(0.009)	*(0.006)*	*(0.005)*
National Price Level	*-0.251*	*-0.464****	*-0.373***
	(0.366)	*(0.150)*	*(0.143)*
Openness Ratio (%)	*0.004****	*0.001*	*0.001**
	(0.001)	*(0.001)*	*(0.001)*
Internet Users per 100 Residents	*-0.019*		*-0.004*
	(0.006)		*(0.002)*
Urbanization Rate (%)	*(-0.002)*		*0.003*
	(0.007)		*(0.012)*
Rule of Law Index	*0.130*		*0.223**
	(0.205)		*(0.133)*
Protected Area (% of Territorial Area)	*0.003*		*0.006***
	(0.008)		*(0.003)*
R·	*89.48%*	*80.64%*	*79.95%*

Note: a. Heteroskedasticity-robust standard errors adjusted for 58 country clusters are reported in parentheses.

*b. *: Significant at the 10% level; **: Significant at the 5% level; ***: Significant at the 1 % level*

Column 3 of Table 3 shows that among the three variables indicating expenditures and investment which are expected to directly affect tourism infrastructures, capital formation and tourism investment per capita have statistically significant effects on tourist inflows at the 1% significance level. Specifically, a 1% increase in the share of capital formation in GDP induces a 0.35% increase in the number of international tourist arrivals, so the general level of capital investment in the country strongly affects tourist inflows. Indeed, the development of multiple-use infrastructures, such as roads, railways, and

other transportation modes, constitutes the basic facilities for tourism development. In addition, the improvement of medical facilities also gives rise to medical tourism, which was a highly remarkable and contested phenomenon in 2009 (Johnston, Crooks, Snyder and Kingsbury, 2010).

On the other hand, the coefficient estimate on tourism investment suggests that a 1% increase in tourism investment per capita will lead to a 0.4% decrease in total tourist arrivals.

Such a counterintuitive estimate suggests a complicated causal relationship between tourism investment and tourist inflows. One explanation may be ineffective investment in luxurious tourism services. It is obvious that investment in specific assets, such as hotels and restaurants, are important to tourism development, but at the same time, these tourism-dependent businesses need a significant tourist demand in order to sustain. As low-cost travelling, or "backpacking," has become a growing trend in recent years, cheap services which require little investment have gained popularity. When the demand for expensive leisure facilities is low, investing more money in them may not prove very effective. However, whether ineffective investment is the underlying reason for the negative relationship between investment and tourism outcomes remains an interesting question for further empirical research.

The regression result also shows that government tourism spending does not have any significant effect on the competitiveness of the country's tourism sector, as the estimate is nearly zero and insignificant at conventional levels. A possible explanation is that because most of the expenditures may be recurrent expenses such as payments for maintenance services rather than capital investment, government spending on tourism does not add much value to the sector. Moreover, governments may have been focusing on using tourism-related policies rather than investing in tourism infrastructures to attract tourists. A closer look at the data shows that while tourist inflows have been increasing, government spending on tourism in most countries has stayed at the same level. It is evident that government expenditure was not the driving force behind the development of the tourism industry in the last decade.

The coefficient estimates on log-transformed lagged per capita GDP and unemployment rates, which are statistically significant at the 1% level, imply that tourists prefer to visit countries with stable and positive economic outlook, as expected. Specifically, a 1% increase in GDP per capita will lead to a 0.8% increase in tourist inflows in the following year. In addition, given that the unemployment rate increases by 1 percentage point, the number of tourist arrivals will fall by 1.5%. A notable example for the strong correlation between unemployment and tourist inflows is the case of Spain in 2010: when Spain's unemployment rate reached 20% after the financial crisis, many restaurants and bars sat empty for a long time during the year despite the much lower level of price for services. In fact, there is a significant relationship between unemployment and social instability, especially crime rate (Elliott and Ellingworth,

1998), so it is understandable that people are reluctant to travel to countries with high unemployment rates.

As it is common for travellers to venture into cheap places to save money while enjoying high-quality services, there is a negative relationship between national price level and the country's attractiveness as a tourist destination, as suggested by the negative coefficient estimate on national price level. The estimate is statistically significant at the 1% significance level, implying that a 0.1 unit fall in the national price level is expected to increase the number of international tourist arrivals by 3.7%.

Statistically significant at the 10% level, the positive estimate of openness ratio suggests that trade liberalization can be a catalyst for the development of a country's tourism sector in the long run. Specifically, our regression results imply that for each 10-percentage points increase in openness ratio, tourist inflows may increase by 1%.

The proxy for social and political infrastructures, the Rule of Law Index, has a positive sign, as expected, and is statistically significant at 10% level. This suggests that a country's political stability and safety level play an important role in attracting foreign tourists. Holding other factors fixed, a one-point increase in the Rule of Law Index results in a 22.3% increase in the number of international tourist arrivals.

A country's efforts to protect and improve its natural resources prove to be important to the development of its tourism sector. The coefficient estimate on lagged protected area is statistically significant at the 5% significance level. Holding other factors fixed, if the protected area increases by 1% out of the total territorial area, tourist inflows is expected to rise by 0.6% in the following year.

Both the coefficient estimates on lagged Internet users per 100 residents and urbanization ratios are not statistically significant at conventional levels, suggesting that there might be no explicit correlation between a country's communication infrastructures, as well as its urbanization and modernization process, and tourist inflows.

TABLE 4.

REGRESSION ESTIMATES OF THE EFFECTS OF SOCIO-ECONOMIC VARIABLES, DIFFERENTIATED BY COUNTRY INCOME STATUSES, ON THE NUMBER OF INTERNATIONAL TOURIST ARRIVALS

(DEPENDENT VARIABLE: LOG(ARRIVALS))

log(Capital formation)	*0.348*** (0.080)*	*0.326*** (0.082)*	*0.359*** (0.246)*
Interacted with Income Status		*0.101 (0.128)*	
log(Tourism Spending)	*-0.002 (0.007)*	*-0.001 (0.010)*	*-0.007 (0.009)*
Interacted with Income Status		*-0.025* (0.013)*	
log(Tourism Investment)	*-0.392*** (0.062)*	*-0.246*** (0.061)*	*-0.359 (0.057)*
Interacted with Income Status		*-0.276*** (0.101)*	
log(Lagged per capita GDP)	*0.805*** (0.114)*	*0.409** (0.158)*	*0.583*** (0.171)*
Interacted with Income Status		*0.215 (0.229)*	*0.045 (0.246)*
Unemployment Rate (%)	*-0.015*** (0.005)*	*-0.006 (0.005)*	*-0.007 (0.005)*
Interacted with Income Status		*-0.015* (0.009)*	*-0.016* (0.009)*
National Price Level	*-0.373** (0.143)*	*-0.416*** (0.129)*	*-0.375*** (0.129)*
Interacted with Income Status		*0.373 (0.452)*	*0.462 (0.453)*
Openness Ratio (%)	*0.001* (0.001)*	*0.002 (0.001)*	*0.002* (0.001)*
Interacted with Income Status		*0.001 (0.002)*	*0.001 (0.002)*
Internet Users per 100 Residents	*-0.004 (0.002)*	*-0.004* (0.002)*	*-0.003 (0.002)*
Interacted with Income Status		*0.000 (0.003)*	*-0.001 (0.004)*
Urbanization Rate (%)	*0.003 (0.012)*	*0.007 (0.013)*	*0.006 (0.014)*
Interacted with Income Status		*-0.010 (0.022)*	*-0.009 (0.026)*
Rule of Law Index	*0.223* (0.133)*	*0.050 (0.115)*	*0.035 (0.118)*
Interacted with Income Status		*0.241 (0.173)*	*0.373* (0.226)*
Protected Area (% of Territorial Area)	*0.006** (0.003)*	*0.004 (0.003)*	*0.005 (0.003)*
Interacted with Income Status		*0.010** (0.005)*	*0.009* (0.005)*
R·	*79.95%*	*10.54%*	*84.78%*

*Note: a. Heteroskedasticity-robust standard errors adjusted for 58 country clusters are reported in parentheses. b. ***: Significant at the 1% level; **: Significant at the 5% level; *: Significant at the 10% level; (*): Significant at the 11% level*

The counter-intuitive coefficient estimates on the variables that represent tourist investment and technology advancement may be due to the differentiated effects of these variables in different socio-economic conditions. In order to check for differentiated effects, we interact the socio-economic variables with a binary variable indicating whether the tourist destination is a low-and-middle-income country, and then estimate the coefficients using fixed-effects estimation. The results are shown in Table 4. The first column shows the regression result for the model without interaction terms for comparison purposes. The second column shows the results for the model in which all variables are interacted with income status. The coefficient estimates on interaction terms for capital formation, government expenditures and total tourism investment are either not significant or counterintuitive. Specifically, the negative relationship between total investment in tourism and tourist inflows remains for both high income and low and middle income countries. Such an estimate calls for further investigation into the nature and effectiveness of tourism investment. In the context of our model, the estimates on capital formation, government spending and tourism investment interaction terms add little to our understanding of tourists' decisions. Moreover, the R-squared from the regression is strikingly small. Therefore, we decide to drop the interaction terms for the first three variables and estimate the coefficients on the remaining regressors. The result of the refined model is reported in the third column of Table 4.

Estimates from the refined model show that, in general, the coefficient estimates on most variables do not change much in magnitudes and significance levels when countries' income statuses are taken into account. An exception is the coefficient estimate on lagged GDP, which drops from 0.805 to 0.583 and remains significant at the 1% level. The drop suggests that 20% to 30% of the impact of economic development on tourist inflows is due to long-term development rather than the mere booms and busts of business cycles. The estimates on capital formation and openness ratio generally remain robust at the 1% and 10% significance levels, respectively.

The coefficient estimate on government spending on tourism is still insignificant at conventional levels. The coefficient estimates on internet users and urbanization rates, as well as the associated interaction terms, are insignificant, suggesting no explicit relationship between modernization, particularly between information technology advancement, and tourist inflows in both high income and low and middle income countries.

The estimate on the Rule of Law Index interaction term is significant at the 11% level, while the estimate on the Rule of Law Index loses its significance. The result suggests that changes in social and political infrastructures of high-income countries do not affect tourist inflows. However, social and political conditions in low and middle income countries do have considerable impacts on tourists' travel

decisions: a country's social improvement reflected in a one point increase in its Rule of Law Index estimate will induce 37% increase in tourist inflows. This finding corresponds to existing literature, which emphasizes the importance of the country's political stability in promoting its tourism sector.

The interaction term on unemployment rates is significant at 1% level, while the coefficient estimate on unemployment for high-income countries loses its significance at conventional levels. The estimated coefficient on unemployment interaction term is roughly identical to that on unemployment rate in the model without interacted income status. Also, the interaction term on lagged protected areas is significant at the 11% level, while the coefficient estimate on lagged protected areas for high-income countries is no longer significant. The evidence implies that a country's unemployment rate and its efforts to improve tourism-related natural resources mostly affect tourist inflows in low-and-middle-income countries rather than high-income countries.

Interactive coefficient estimates on price levels, openness ratio, internet users and urbanization rates are not significant at conventional levels, suggesting no explicit differentiated effects on tourist inflows. The estimates are robust to adding and dropping variables and interactions.

V. Final Discussion

The robust development of tourism across the globe, driven by the rapid increase in international tourist flows, has not only significantly contributed to global GDP, but also benefited countries in reducing the exchange gap, promoting manufactures, generating employment and stimulating technological and cultural exchange. The benefits of a healthy tourism sector provide strong incentives for policy makers to enhance a country's attractiveness as a tourist destination. Research into the determinants of the amount of tourist flows between countries has suggested that relative price levels, tourism infrastructures and socio-political conditions strongly affect tourists' choices of destination countries. Moreover, there are differentiated effects of such determinants on tourist inflows in high-income countries and low-and-middle-income countries.

Taking the approach that disregards the tourists' origin countries, we find that the level of economic development of the destination countries has a profound impact on tourist inflows. Specifically, there exists a positive correlation between log-transformed lagged per capita GDP and tourist inflows and a negative correlation between unemployment rate and the attractiveness of a country tourist destination. The estimate of national price level also implies that countries with lower costs of living are expected to attract a larger number of foreign tourists. Another interesting findings are that while the improvement in multiple-use physical infrastructures of a country may boost the competitiveness of its tourism sector,

investment in tourism-related assets may not. Other variables such as openness ratio, rule of law index, and lagged protected area, are all important determinants of inbound tourism with expected signs.

Interacting all variables with income status, we discover that rule of law index, unemployment rate, and a country's effort to preserve its natural resources, play more important roles in low-and-middle income countries than in high income countries. The positive and significant coefficient estimate on lagged GDP reinforces our belief that long-term economic development has a remarkable effect on a country's tourism industry. Other variables either provide little valuable information in context of our research question or suggest that there is no distinct difference between tourism products of high-income countries and low-and-middle-income countries.

Our approach and analysis are not without limitations. Tourists from different origin countries have different preferences, face different budget constraints and view tourism service from a destination country as different goods. Therefore, the approach that disregards the country of origins may under- or over-estimate the roles of some determinants of people's decisions to travel to a certain destination. For example, it is impossible to account for the costs of traveling from the origin countries to the destination countries, which is an important factor affecting tourists' choices of destination countries, without taking into account where tourists in a certain country come from. Omitting the costs of traveling may bias tourism price elasticity, because national price level may not well represent the costs tourists face. Moreover, tourism investment, especially investment in luxurious tourism services, may not affect tourist inflows from low and middle countries as much as inflows from high-income countries. Thus, estimating models which do not account for tourists' origin countries may result in counterintuitive coefficient estimates on investment, which may be the case for our analysis.

Another limitation of our model is possible reverse causal relationship between tourist inflows and the regressors. For example, tourist inflows may boost GDP, reduce unemployment, induce investment and stimulate technology advancement. If such feedbacks from tourist inflows to the other variables occur, the fixed-effects model may not be appropriate, resulting in counterintuitive estimates. Although we attempt to accommodate for feedbacks by using lagged variables, the relationships between tourism and socio-economic conditions assumed in the models still call for further investigation and justification.

APPENDIX

Please refer to the .do file attached for concisely commented Stata commands that we use to produce our regression results. Table 5 lists all countries in our observation sample in alphabetical order.

TABLE 5
LISTS OF COUNTRIES IN THE SAMPLE

Number	Country	Region	Number	Country	Region	Number	Country	Region
1	Armenia	Europe	21	Greece	Europe	41	Norway	Europe
2	Australia	Australia	22	Hong Kong SAR, China	Asia	42	Pakistan	Asia
3	Austria	Europe	23	Hungary	Europe	43	Philippines	Asia
4	Azerbaijan	Europe	24	Iceland	Europe	44	Poland	Europe
5	Bangladesh	Asia	25	India	Asia	45	Portugal	Europe
6	Belarus	Europe	26	Indonesia	Asia	46	Romania	Europe
7	Belgium	Europe	27	Ireland	Europe	47	Russian Federation	Europe
8	Bosnia and Herzegovina	Europe	28	Italy	Europe	48	Singapore	Asia
9	Bulgaria	Europe	29	Japan	Asia	49	Slovenia	Europe
10	Cambodia	Asia	30	Kazakhstan	Europe	50	Spain	Europe
11	China	Asia	31	Korea, Rep.	Asia	51	Sri Lanka	Asia
12	Croatia	Europe	32	Lao PDR	Asia	52	Sweden	Europe
13	Cyprus	Europe	33	Luxembourg	Europe	53	Switzerland	Europe
14	Czech Republic	Europe	34	Macao SAR, China	Asia	54	Thailand	Asia
15	Denmark	Europe	35	Macedonia, FYR	Europe	55	Turkey	Europe
16	Estonia	Europe	36	Malaysia	Asia	56	Ukraine	Europe
17	Finland	Europe	37	Moldova	Europe	57	United Kingdom	Europe
18	France	Europe	38	Mongolia	Asia	58	Vietnam	Asia
19	Georgia	Europe	39	Nepal	Asia			
20	Germany	Europe	40	Netherlands	Europe			

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