

# **Tourist Arrivals in the APEC Region: Determinants and Inclusive Impacts**

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The Asia-Pacific Economic Cooperation (APEC), founded in 1989, is a regional forum dedicated to promoting economic integration and cooperation in the Asia-Pacific region. Its 21 member economies<sup>2</sup> aim to create greater prosperity for the region by promoting balanced, inclusive, sustainable, innovative and secure growth.

Tourism has been consistently recognised as an important source of inclusive economic growth in the APEC region. In the 1994 Bogor Goals Declaration, tourism was identified as an area of cooperation that will help “attain sustainable growth and equitable development of APEC economies, while reducing economic disparities among them, and improving the economic and social well-being of our people”.<sup>3</sup> This was reiterated by Leaders in 2010, where they emphasised tourism promotion as a means to contribute to inclusive growth through its linkages with business, employment, entrepreneurship, and MSME (micro, small, and medium enterprises) development, as well as sustainable growth through ecotourism.<sup>4</sup> In 2000, during the 1<sup>st</sup> APEC Tourism Ministerial Meeting (TMM1) in Seoul, Korea, tourism ministers agreed to step up actions to “improve the economic, cultural, social and environmental well-being of APEC member economies through tourism”. During TMM8 in 2014 in Macao, China, ministers announced efforts “to achieve the target of 800 million international tourists among APEC economies by 2025” and called on governments to place more emphasis on the development of tourism in the region.<sup>5</sup>

The APEC region received 426 million tourists in 2013, an increase of 168% from the 159 million tourist arrivals in 1995. Between 1995 and 2013, tourist arrivals in the region grew at an average rate of 5.6% per annum. However, in more recent years growth in tourist arrivals has slowed down, growing an average of 4.3% per year in 2011-2013. Achieving the 2025 target of 800 million tourist arrivals is a massive effort, requiring average annual tourism arrivals growth of at least 5.4% in the next decade—almost matching the growth of the late 1990s and 2000s but from a much higher base.

This study aims to contribute to tourism policy discussions in the APEC region in two ways. First, it will examine the likely impacts of policies that can contribute to achieving the target of 800 million international tourist arrivals by 2025 through an analysis of the determinants of tourism arrivals in APEC economies. Second, it will look at the linkages between tourist arrivals and inclusive growth in terms of poverty headcount reduction or encouraging a pro-poor pattern of economic growth.

## **Determinants of Tourist Arrivals**

Tourism arrivals are determined by push and pull factors: push factors are those that lead a person to leave home and become a tourist, while pull factors are those that lead that tourist to visit a specific destination. For example, income and awareness of interesting destinations are push factors because they provide an opportunity and desire for a person to become a tourist. On the other hand, that person’s choice of where

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<sup>2</sup> APEC member economies are Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; the Philippines; Russia; Singapore; Chinese Taipei; Thailand; the United States; and Viet Nam.

<sup>3</sup> 1994 Bogor Goals Declaration, para 8: [http://www.apec.org/Meeting-Papers/Leaders-Declarations/1994/1994\\_aelm.aspx](http://www.apec.org/Meeting-Papers/Leaders-Declarations/1994/1994_aelm.aspx).

<sup>4</sup> 2010 APEC Leaders’ Growth Strategy: [http://www.apec.org/Meeting-Papers/Leaders-Declarations/2010/2010\\_aelm/growth-strategy.aspx](http://www.apec.org/Meeting-Papers/Leaders-Declarations/2010/2010_aelm/growth-strategy.aspx).

<sup>5</sup> 2014 Macao Declaration, para 3: [http://www.apec.org/Meeting-Papers/Sectoral-Ministerial-Meetings/Tourism/2014\\_tourism.aspx](http://www.apec.org/Meeting-Papers/Sectoral-Ministerial-Meetings/Tourism/2014_tourism.aspx).

to go is affected by various pull factors such as expected costs, connectivity, safety, and destination attractions.

Push and pull factors affecting tourism may or may not be influenced by tourism development policy. Factors such as cultural affinity, language, or geography are accidents of history or nature and are beyond the influence of tourism development policy. Meanwhile, shocks such as natural disasters, epidemics, or global financial crises are external factors that nevertheless affect tourism arrivals. Although factors such as economic growth, trade, or poverty can be influenced by policy in general, they are quite removed from the area of tourism development policy and are also considered external to the tourism sector. In the context of tourism policy, these factors that are external or indirectly related to tourism development are thus “exogenous factors”. On the other hand, “endogenous factors” are those that are more directly related to, or influenced by tourism development policy. Examples of endogenous factors include connectivity, safety, awareness, and entry requirements. Table 1 provides the push and pull variables classified into exogenous and endogenous factors in the context of tourism development policy.

**Table 1. Matrix of factors affecting tourism arrivals**

	<b>Pull factors</b>	<b>Push factors</b>
<b>Endogenous factors</b>	Connectivity Entry requirements Safety Attractions	Awareness/interest
<b>Exogenous factors</b>	Economic growth Exchange rate Shocks History Culture Language Geography	Economic growth Exchange rate

Source: Author.

To quantitatively analyse the determinants of tourist arrivals, we estimate a gravity model with bilateral tourism flows as the dependent variable. Gravity models are a class of econometric models that are commonly used to explain bilateral trade flows. As tourism is a form of trade in services, analysing determinants of tourism performance lends itself to gravity modelling, and has been done by trade economists looking into the tourism industry.<sup>6</sup>

Formally, we estimate the following equation; subscripts denote  $o$  = the tourist’s origin economy,  $d$  = the destination economy, and  $t$  = time in calendar years (terms in bold are vectors):

$$\ln(T_{odt}) = \alpha + \beta_1 \ln(Y_{ot}) + \beta_2 \ln(Y_{dt}) + \beta_3 \ln(X_{odt}) + \beta_4 \ln(M_{odt}) + \beta_5 R_{ot} + \beta_6 R_{dt} + \beta_7 \ln(P_{ot}) \\ + \beta_8 \mathbf{G}_{od} + \beta_9 V_{od} + \beta_{10} N_{od} + \beta_{11} F_{od} + \beta_{12} W_o + \beta_{13} \mathbf{D}_{dt} + \delta_1 \mathbf{d} + \delta_2 \mathbf{o} + \delta_3 \mathbf{t} + \varepsilon_{odt}$$

where  $Y$  = gross domestic product,  $X$  =  $d$ ’s exports to  $o$ ,  $M$  =  $d$ ’s imports from  $o$ ,  $R$  = real effective exchange rate,  $P$  = population,  $G$  = vector of time-invariant gravity control variables (e.g., distance, common border, common language, common colony),  $V = 1$  if  $d$  requires a visa from passport holders from  $o$ ,  $N = 1$  if there is a direct flight between  $d$  and  $o$ ,  $F$  = total flight time between  $d$  and  $o$  (excluding layovers),  $W$  = passport power of  $o$  (i.e., total number of visa-free jurisdictions for passport holders),  $D$  = vector of destination-specific variables (e.g., connectedness index, terrorism, crime, search popularity, number of UN heritage sites),  $d$  = vector of destination economy dummy variables,  $o$  = vector of origin economy dummy variables,

<sup>6</sup> See, for example, Eilat and Einav (2004); Culiuc (2014); and Morley, Rossello and Santana-Gallego (2014).

and  $t$  = vector of year dummy variables. As there are time-invariant independent variables (e.g., common language, common border, etc.), we estimate the above equation through random effects panel OLS using Huber-White standard errors to correct for heteroscedasticity.

Data sources to estimate the above equation are given in Appendix A, while the regression results are shown in Table 2.

**Table 2. Determinants of tourist arrivals**

	Coefficient	Standard Error	Significance
<b>Exogenous factors</b>			
Destination GDP <sup>a</sup>	0.218	0.248	
Origin GDP <sup>a</sup>	0.717	0.138	***
Bilateral exports <sup>a</sup>	0.044	0.015	***
Bilateral imports <sup>a</sup>	0.018	0.011	*
Destination REER	0.001	0.001	
Origin REER	0.004	0.001	***
Distance <sup>a</sup>	-0.0001	3.01e-05	***
Common border <sup>b</sup>	1.958	0.371	***
Common language <sup>b</sup>	0.853	0.135	***
Common colony in 1945 <sup>b</sup>	3.353	1.219	***
Origin population <sup>a</sup>	-0.470	0.408	
<b>Endogenous factors</b>			
Visa required <sup>b</sup>	-0.514	0.135	***
Origin passport power	0.015	0.008	*
Direct flight <sup>b</sup>	0.346	0.122	***
Flight time <sup>a</sup>	-0.001	0.0004	**
Connectedness index	0.014	0.003	***
Number of terrorist events	-0.0003	0.0003	
Homicide per 100,000 people	-0.008	0.004	*
Search popularity (economy)	-0.005	0.001	***
Number of UN heritage sites	0.006	0.011	
Observations		3,401	
Overall R-squared		0.924	
Prob > chi2		0.000	

Notes: The dependent variable is log of tourist arrivals. <sup>a</sup> = marginal effect is an elasticity estimate (regressor is in logs). <sup>b</sup> = marginal effect is for discrete change of dummy variable from 0 to 1. REER = real effective exchange rate. \*\*\* = significant at  $\alpha = 0.01$ ; \*\* = significant at  $\alpha = 0.05$ ; \* = significant at  $\alpha = 0.10$ . Constant and economy and year dummy variables coefficients are suppressed for brevity. Robust standard errors are used.

Source: Various data sources and APEC PSU estimates.

Looking at the exogenous variables, tourism arrivals have a positive linkage with macroeconomic indicators such as GDP or bilateral trade: economies with higher incomes and trade linkages are more likely to have larger bilateral tourism flows. Note that origin GDP is a statistically significant determinant of tourism performance (i.e., 1% GDP growth in origin translates to 0.717% arrivals growth to the destination) while destination GDP is not, pointing to the importance of income growth in origin economies as a push factor

for tourism. Likewise, an increase in the origin's real effective exchange rate, which implies a relative appreciation of the origin economy's currency, increases tourist flows because it makes prices in the destination relatively cheaper. As may be expected, distance has a negative impact on tourist flows, although the marginal effect is very small. Having a common border is a very strong determinant of arrivals as it makes travel less expensive—this is especially strong in the case where there is a land border crossing, such as China-Hong Kong, China; Malaysia-Singapore; or Mexico-USA.<sup>7</sup> Historical and linguistic ties are also a major determinant of tourism flows as they cultivate cultural familiarity between peoples of the origin and the destination economies.

Among the policy-relevant endogenous factors in the analysis, we can see two areas that are the strongest determinants of tourist arrivals: entry requirements and connectivity. The strongest marginal effect, albeit on the negative, is seen with entry requirements: imposing visas alone reduces bilateral tourist arrival growth by 0.514% (all other factors held constant). Further analysis shows that the type and cost of visas are also important factors affecting tourist flows. Among destination economies that impose visas, easing visa requirements through visa-on-arrival or e-visa systems (rather than applications with consular interviews) has a strong and positive impact on tourist flows. However, as may be expected, higher visa costs, even coupled with easier visa requirements, have a negative impact on tourist flows. Conversely, as a push factor, passport power of the origin economy—i.e., the number of economies a passport holder can visit without a visa—is positively linked with tourism flows to any destination economy even after controlling for visa requirements.

On the positive side, connectivity, particularly having direct flights, is a strong determinant of bilateral tourist arrivals: having a direct flight between the origin and destination adds to tourism growth by 0.346% (all other factors held constant). While geographic distance and flight time have negative impacts on tourist flows, it seems that having a direct flight is more than enough to offset these negative impacts of geographical distance. Moreover, if direct flights are impossible, there is evidence to show that reducing the number of flight legs also has a positive impact on tourist flows even after controlling for distance and flight time: reducing flight legs by one (e.g., from 2 stopovers to 1 stopover) increases bilateral tourist arrivals growth by 0.556% even after controlling for distance and flight time. Likewise, having greater connectedness—which is an indicator of both outcomes and policies connecting two economies—has positive impacts on tourism performance in the region.

As may be expected, safety indicators such as terrorist events and crime are negatively correlated with tourist flows. However, while these effects are relatively small in magnitude, it should be noted that terrorism and crime statistics are highly subjective and subject to error and legal definition, so the impacts of these safety factors may be understated in this estimation. Moreover, many of the major terrorist events are one-off shocks that will likely manifest as year-specific idiosyncrasies (i.e., one-year drop in tourist arrivals that will recover in one or two years) rather than affect the longer-run trend of tourist arrivals.

On awareness, it seems that relative search popularity is negatively associated with tourism flows. Note that due to conceptual and manpower constraints, we examined the search popularity of the economy names rather than particular sites (e.g., Indonesia rather than Bali or Borobudur), so a lot of the search popularity may be linked with news events that might not be positive (e.g., natural disasters). Thus, this finding may be more reflective of data constraints rather than advertising or image management. That said, this finding indicates that people seem more likely to search for a destination due to negative publicity rather than positive publicity—something that can be due to the reporting bias of news outlets where bad news is more likely to be reported and given wide coverage.

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<sup>7</sup> This can also point to the weakness of the data as it is sometimes unable to distinguish tourist arrivals from cross-border commuters.

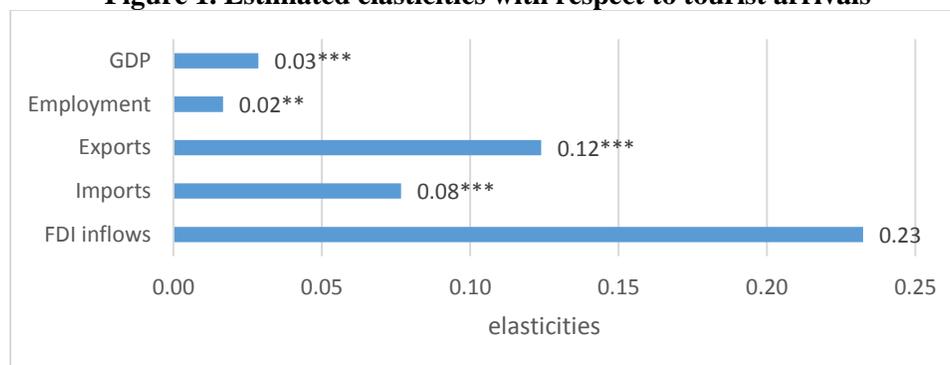
Finally, the number of UN heritage sites, as an indicator of tourist attractions, is a positive but statistically insignificant determinant of tourist flows. Many economies have no or few heritage sites but are nevertheless able to attract tourists: an example is Singapore which until 2015 had no recognised UN heritage site but has been able to attract more than double its population in tourist arrivals. On the other hand, some economies with many heritage sites are punching below their weight in tourist arrivals. Note, however, that heritage sites are just one indicator on the number and quality of attractions in a destination economy, and a better quantitative indicator of attractions may need to be developed to measure the impact of site development.

## Tourist Arrivals and Inclusive Growth

Tourism has long been recognised as a major contributor to economic growth and employment in the region. The 2012 *Business Growth Opportunities in the New APEC Economy* report by the APEC Tourism Working Group predicts the tourism industry will boost GDP and employment growth significantly within the next decade—by 4.8% and 1.8% per annum, respectively. As a result, an additional 8.9 million jobs are expected to be created within the tourism sector as well as in sectors closely related to it (APEC Tourism Working Group 2012). Developing economies in particular are expected to benefit from this increase in employment opportunities.

Indeed, our estimates of the elasticities of various macroeconomic indicators (i.e., GDP, employment, exports, imports, and foreign direct investment inflows) with respect to tourism arrivals are all positive even after controlling for origin, destination, and year idiosyncrasies (Figure 1). These results are expected and confirm the positive contribution of tourism—as a source of external consumption demand and foreign exchange—to the economy.

**Figure 1. Estimated elasticities with respect to tourist arrivals**



Note: FDI = foreign direct investments. \*\*\* = significant at  $\alpha = 0.01$ ; \*\* = significant at  $\alpha = 0.05$ ; \* = significant at  $\alpha = 0.10$ . Data are for 1995-2013. Regression models used are fixed effects panel OLS (employment, exports, imports, and FDI) and Arellano-Bond estimation (GDP) to control for reverse causality. All regressions control for economy- and year-specific idiosyncrasies and use robust standard errors.

Source: COMTRADE, DGBAS, UNWTO, WDI data and APEC PSU estimates.

Although the linkages between tourism and macroeconomic variables are well-established, relatively less is known about the linkages between tourism and inclusive growth. To fill this gap, we analyse the correlations between tourism growth and poverty reduction as well as inclusive growth (i.e., pro-poor growth).

For this analysis, poverty reduction is simply defined as a reduction in the poverty headcount using the \$1.25 PPP per person per day poverty line. On the other hand, we define inclusive growth as an improvement in income and its distribution, both of which must complement each other. Economic

growth that generously benefits the well-off and marginally benefits the poor can hardly be called inclusive. Likewise, a fairer distribution of income (as measured by a reduction in inequality), without an increase in average incomes, can hardly be called growth. Hence, we apply a measure of inclusive growth that considers both an increase in mean incomes and improvements in income distribution that was developed by Son and Kakwani (2008).<sup>8</sup> We estimate the inclusive growth rate as:

$$\gamma = \Delta \ln(\mu) - \Delta \int_0^1 \left[ \ln(p) - \ln\left(\frac{\mu_p p}{\mu}\right) \right] dp, \mu > 0, p \in [0,1]$$

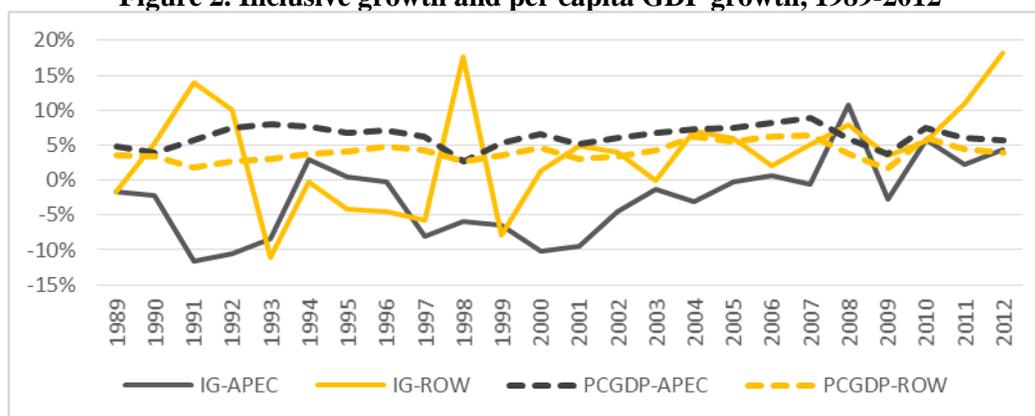
where  $\mu$  = mean household income of the entire population,  $p$  = the proportion of the population from individual 1 to individual  $p$  arranged from poorest to richest (i.e., the poorest  $p$  percent of the population), and  $\mu_p$  = the mean household income of the  $p^{\text{th}}$  proportion of the population (so if  $p = 1$  then  $\mu_p = \mu$  and for all  $p < 1$  then  $\mu_p < \mu$ ). One may recognise that the second term of  $\gamma$  preceded by the integral sign is the area bounded by the Lorenz curve. Intuitively, this measure of inclusive growth can be described as:

*inclusive growth = growth in mean household income – increase in inequality*

That is, inclusive growth is income growth adjusted for changes in inequality: an increase in inequality reduces the inclusiveness of income growth. This measure implies that growth is inclusive if the poor's incomes are proportionally rising faster than that of the rich; that is, the benefits of economic growth accrue proportionally more to the poor than to the rich. Note that this does not necessarily mean a narrowing of the income gap: in money terms, the rich may still gain more from economic growth than the poor even if the poor's income grew proportionally faster (e.g., a 1% growth from \$1 million is still larger in magnitude than a 10% growth from \$10,000). However, inclusive growth means that economic growth is being felt among the poorer segments of society who need growth the most.

Using this indicator of inclusive growth, we see that between 1989 and 2012, the APEC region has grown faster than the rest of the world in terms of per capita GDP growth, but has mostly lagged behind in terms of inclusive growth (Figure 2). This indicates that, in general, the gains from APEC's rapid economic growth in the past two decades have been felt proportionally more by the well-off rather than the poor.

**Figure 2. Inclusive growth and per capita GDP growth, 1989-2012**



Note: IG = inclusive growth; PCGDP = per capita GDP growth; ROW = rest of the world. Aggregate growth rates are averages of economy-level growth rates weighted by population.  
Source: PovcalNet and WDI data and APEC PSU estimates.

<sup>8</sup> The same methodology was used by San Andres and Wirjo (2015) to analyse the linkages between trade and inclusive growth in the report on *Trade, Inclusive Growth, and the Role of Policy*; the report can be found here: [http://publications.apec.org/publication-detail.php?pub\\_id=1678](http://publications.apec.org/publication-detail.php?pub_id=1678).

Although we have seen in Figure 1 that tourism has a positive impact on economic growth and employment, it does not necessarily follow that it will have a positive impact on poverty reduction or achieving pro-poor growth. Ex ante, it is not clear that tourism development benefits the poor proportionally more than the rich. In order to determine this relationship, we conduct panel data analysis between poverty indicators and tourism arrivals while controlling for other factors that can influence poverty indicators. These factors include GDP growth, population growth, changes in inequality, economy-specific idiosyncrasies (e.g., history, domestic policy, etc.), and year-specific events (e.g., economic shocks or natural disasters). Formally, we estimate the equations (terms in bold are vectors; subscripts  $d$  and  $t$  are as previously defined):

$$\ln(H_{dt}) = \alpha + \beta_1 \ln(T_{dt}) + \beta_2 \ln(Y_{dt}) + \beta_7 \ln(P_{dt}) + I_{dt} + \delta_1 \mathbf{d} + \delta_3 \mathbf{t} + \varepsilon_{dt}$$

and

$$\gamma_{dt} = \alpha + \beta_1 \dot{T}_{dt} + \beta_2 \dot{Y}_{dt} + \beta_7 \dot{P}_{dt} + I_{dt} + \delta_1 \mathbf{d} + \delta_3 \mathbf{t} + \varepsilon_{dt}$$

where  $H$  = poverty headcount,  $\gamma$  = inclusive growth rate,  $T$  = tourist arrivals,  $Y$  = GDP,  $P$  = population,  $I$  = inequality measured as the Gini index,  $d$  = vector of destination economy dummy variables, and  $t$  = vector of year dummy variables; dots on top of variables denote growth rates for that variable. Results of the econometric analysis are shown in Table 3.

**Table 3. Marginal effects on poverty reduction and inclusive growth**

Explanatory variables	Dependent variable	
	Number of extremely poor <sup>9</sup>	Inclusive growth rate <sup>10</sup>
Tourist arrivals	-0.124* (0.076)	0.001 (0.001)
GDP	-0.909*** (0.282)	-0.291 (0.682)
Population	5.845*** (0.618)	-0.060 (0.042)
Inequality	0.096*** (0.009)	-0.036*** (0.009)
N	958	1,051
Prob > chi2; F	0.000	0.012

Notes: \*\*\* = significant at  $\alpha = 0.01$ ; \*\* = significant at  $\alpha = 0.05$ ; \* = significant at  $\alpha = 0.10$ . Constant and coefficients for destination and year dummy variables are suppressed for brevity. Robust standard errors are in parentheses.

Source: UNWTO, WB PovcalNet, WDI data and APEC PSU estimates.

The results show that tourism generally has a positive effect on poverty reduction and inclusive growth, albeit statistically insignificant for the latter: it can be seen that tourist arrivals (measured in number of arrivals in each economy) has a negative sign for number of extremely poor and positive sign for inclusive growth rate. This means that an increase in tourist arrivals is correlated with a statistically significant

<sup>9</sup> Dependent and independent variables are in logs (except for inequality, which is the Gini index), so coefficients are elasticities; regression model used is the Arellano-Bond method to control for reverse causality of the dependent variable. Due to data coverage period, extreme poverty line used is \$1.25 per person per day (in 2005 PPP dollars).

<sup>10</sup> Dependent and independent variables are in growth rate percentages (except for inequality, which is the Gini index), so coefficients are marginal effects; regression model used is fixed effects panel OLS.

reduction in the number of people living in extreme poverty. To be precise, every 1% increase in tourist arrivals is correlated with a 0.124% reduction in the number of poor people. Note that this poverty reduction effect already excludes the impacts of overall GDP growth, population growth, changes in inequality, and economy- and year-specific idiosyncrasies; hence, the tourism-poverty elasticity of -0.124 can be seen as a more direct impact of tourism development on poverty reduction. There is also indicative evidence to say that tourism development contributes to inclusive growth; i.e., it helps ensure that the poor benefit proportionally more from economic growth. As can be seen in Table 3, there is a positive albeit statistically insignificant coefficient (0.001) for tourism arrivals with respect to the inclusive growth rate.<sup>11</sup>

## Conclusion

The analysis on the determinants of tourism performance pointed to two main areas of policy development: easing visa requirements and improving connectivity. Among the policy areas considered, it was these two that produced the strongest impacts on tourist inflows and should be the focus of policy prioritisation.

Visa requirements discourage potential tourists from visiting a destination and lead them to consider alternative and more open destinations. However, for the economies that impose them, visas provide essential controls for security and immigration and are a useful tool for gathering information on visitors. These are important considerations, but given the costly impact of visas on tourist flows, it would be beneficial for economies to consider easing visa requirements while implementing other measures to meet security, immigration, and information requirements. For example, advance passenger information systems, passport background checks, and information sharing between security authorities of economies (as well as Interpol) can be substitutes for outright visa requirements. Likewise, if visas need to be imposed, policies that facilitate application and processing—such as e-visas or visas-on-arrival—can contribute to tourism growth.

The other tourism policy area that has the strongest impact on tourist arrivals is connectivity. Improving connectivity between economies—in this case, passenger transport links—enable potential tourists to conveniently arrive at a destination. For economies that share a land border, land transportation linkages can strongly impact tourist arrivals as seen in the high marginal effects for common border. However, for most partner economies, the main transportation linkage is through air travel. Indeed, marginal effects for direct flights and connectedness index are strongly positive and significant. These findings point to the importance of opening up skies to direct flights. Hence, policies that encourage more direct flights, and more competition between air service providers, can contribute to tourism arrivals in the region. Moreover, efforts at reducing the number of stopovers can contribute to tourism arrivals in lieu of direct flights.

An analysis of the impacts of tourist arrivals on economic indicators reiterates positive linkages that have been previously established. Elasticity estimates for GDP, employment, trade, and foreign direct investments are all positive and mostly statistically significant. Moreover, analyses between tourist arrivals and poverty reduction as well as inclusive growth (i.e., pro-poor growth) indicate positive correlations: the elasticity of poverty headcount with respect to tourist arrivals is significantly negative, while that for inclusive growth is positive but insignificant. These findings provide some indication that tourism is positively linked with improvements in income distribution, which supports views that tourism helps develop service sectors that mainly employ workers from poor households (e.g., food and beverage, personal services). It points to the potential of tourism as an avenue for poverty reduction through jobs creation and entrepreneurial activity at the micro-level.

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<sup>11</sup> A similar analysis with total trade yields negative coefficients (cf. San Andres and Wirjo 2015).

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### Appendix A: data and sources

DATA	DESCRIPTION	SOURCE
<b>Tourism Performance Indicators</b>		
Bilateral tourism flows	Annual tourism flows from each economy to each economy; 1995-2013.	UNWTO
<b>Tourism Sector Variables</b>		
Connectedness	The DHL Global Connectedness Index details an analysis of the state of globalization around the world from the period of 2005 to 2013. A higher Global Connectedness Score implies that the economy is more globalized.	DHL Global Connectedness Index 2014
Bilateral flights	Time and flight legs between economies using the most direct flight connections between busiest airports as of 2015.	Various flight-search websites
Passport power	The passport power states the number of economies a person holding a specific passport can travel to without a visa as of 2015.	Henley & Partners' Visa Restrictions Index
Bilateral visa requirements	Visa requirements imposed by each economy on visitors as of 2015. Visa requirements include e-visas, visas on arrival, and visas requiring prior application at consular offices).	Foreign affairs ministries of each economy
World Heritage Sites	Cumulative number of UNESCO World Heritage Sites in APEC economies; 1995-2014.	UNESCO World Heritage Centre
Crime	Homicide, assault, and rape rates per 100,000 people; 2000-2013.	UNODC
Terrorism	Number of terrorism incidents and casualties; 1995-2013.	START Global Terrorism Database
Awareness/popularity	The relative search popularity of an APEC economy; 2005-2014.	Google Trends
<b>Macroeconomic and Exogenous Variables</b>		
Bilateral trade	Annual bilateral import and re-import; 1995 to 2014. Annual bilateral export and re-export; 1995 to 2014.	UNCTAD; Bureau of Foreign Trade and Ministry of Economic Affairs (Chinese Taipei)
Foreign direct investments (FDI)	Annual FDI inflow and outflow from 1995 to 2014. Data on FDI flows are on a net basis (capital transactions credits less debits between direct investors and their foreign affiliates); 1995-2014.	UNCTAD
Macroeconomic and social indicators	GDP, GDP growth, population, employment, exchange rates, poverty, inequality, etc.; 1995-2014	IMF; WDI; PovcalNet; Directorate General for Budget, Accounting and Statistics (Chinese Taipei)
Bilateral gravity variables	Land area, landlocked, continent, common language, former colony, distance	Centre d'Etudes Prospectives et d'Informations Internationales (CEPII)
Geographic indicators	Mean elevation, mean distance to coastline, land area in tropics	Portland State University