Tourism sector in Panama. Regional economic impacts and the potential to benefit the poor.

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Abstract

Tourism is one of Latin America's fastest growing industries but the impact of tourism on the poor and the effects on lagging regions are under debate. Many studies have evaluated the growth impacts of the tourism sector but few have analyzed the impact of tourism on the economy and poverty at the subnational level in developing countries. As a country marked by a "dual economy," Panama shares with other Latin American countries a fast growing, modern urban sector side by side with impoverished rural and peri-urban populations. Tourism has been growing in Panama and contributes at least 6 percent of gross domestic product. This paper presents the results of a top-down assessment of the impact of tourism spending on growth and poverty at the regional (province) level in Panama using a Social Accounting Matrix model. As revealed by this study, the tourism sector has large multiplier effects on the Panamanian economy and has the potential for significant benefits to the poor. But tourism's poverty benefits are neither automatic nor ubiquitous. They depend on where and how supply chains are structured and on the way tourists spend their money.

1. Introduction

The tourism sector has grown rapidly in Latin American countries over the last decade and has become an important source of foreign exchange and an impetus for overall economic growth. Tourist arrivals rose by about 68 percent worldwide over the 1995–2007 period and by about 50 percent in Latin American countries (Fayissa et al. 2009). The tourism sector makes an increasingly large contribution to the overall economy and foreign exchange earnings in the region, and it has rapidly grown in Panama in the last decade. The international arrivals in Panama have grown from around 1.3 million visitors in 2006 to 1.7 million in 2010.[2]

Given the sector's growing importance, the Panamanian Tourism Authority (Autoridad de Turismo de Panamá, ATP) carried out a series of surveys between 2006 and 2008 to better understand the direct and indirect economic impacts of tourism and develop pilot satellite accounts. According to the 2006 data on national and international tourism and tourists' expenditures, including tourists in transit that never leave the airport, international tourist arrivals in Panama reached 2.4 million—a number equivalent to 70 percent of the country's population. The expenditures by foreign tourists during this period totaled around $960 million, equivalent to 6 percent of Panama's 2006 GDP. Of the total of 2.4 million visitors, about half of the visits are direct transit[3] and a quarter is for recreation; the former account for one-third of total expenditures by foreign tourists and the latter for over 40 percent. Panama is also becoming a popular destination for retirees from North America and Europe—not reflected in these statistics on tourism arrivals, which contributes to the real estate boom in the metropolitan area of Panama City, Bocas del Toro and Chiriqui.

Recent studies show that growth of the tourism sector has contributed to overall economic growth and development in Latin American countries. A cross-country econometric study of the determinants of economic growth in 17 Latin American countries over the 1995–2004 period found that a 10 percent increase in the spending of international tourists leads to a 0.4 percent increase in GDP per capita (Fayissa et al. 2009: 13). Another study examined the growth performance of Nicaragua and found that of the three sectors, including agriculture, manufacture, and tourism, the latter offered the largest potential to generate foreign exchange earnings, increases in job creation, increases in economic expansion and impacts on income distribution (Vanegas and Croes 2007). The coffee and manufacturing sectors have also played an important role in the country's overall growth, but the impact of the tourism sector was found to be higher. The findings of this study have also suggested that a five percent increase in tourism receipts leads to a 3.1 percent decrease in poverty in Nicaragua. Thus, the tourism sector can become a powerful driver of pro-poor growth in the Latin America countries in general and in Panama specifically because of this sector's strong potential to create jobs and stimulate agricultural production in marginal areas, the traditional sector (handicrafts and souvenirs) and transport services.

Assessing the magnitude of the economic impacts of tourism development is not straightforward because of a wide range of activities associated with growth in this sector and the difficulty in defining tourism as an industry. Wide discrepancies across regions and between urban and rural

areas, common in developing countries and especially pronounced in Panama, are likely to translate into similarly large variation in the magnitude of the impacts of tourism on growth and poverty by region. This paper estimates the economic impact of the growing tourism sector in Panama at the regional level and assesses the distributional and poverty impacts of the sector's growth.

2. The role of the tourism sector in Panama within the broader social and economic context
Panama is attracting tourism not only because of its scenic vistas and vast biodiversity, but also because of its rich cultural heritage. In addition to attracting thousands of business travelers, it is a growing center of coastal, cultural, health, and ecotourism. Surveys of foreign tourists reveal that business and shopping are still the main purposes of the trip for about a quarter to a third of all visitors; recreation is the main purpose for over a third of all visitors, and family visits for around 20 percent. Among activities, shopping, entertainment and business needs are still the main motives for the trip. But adventure, coastal and ecotourism are gaining prominence.[4] One survey reveals that over 40 percent of foreign visitors have spent time at the beach, and 10 percent have participated in ecotourism, among other activities.[5] Another survey suggests that ecotourism is one of the main purposes of the trip for about 15 percent of foreign visitors, while cultural tourism is still in a nascent stage (Table 1**Error! Reference source not found.**).

Table 1. Activities realized during the trip.

Foreign tourists		Domestic tourists	
Shopping	82%	Recreation	32%
Entertainment	46%	Vacation	24%
Beach	22%	Family visit	24%
Ecotourism	15%	Rest (*descanso*)	10%
Etnotourism	2%	Religion	5%
Other	11%	Health	2%
		Other	3%

Source: Authors' calculations using the data from tourism surveys for Satellite Tourism Accounts, 2008. For foreign tourists, 1,626 tourists (and more than one response was permissible); for domestic tourists-1,423 trips (states only the main purpose).

Investments in infrastructure and hotel accommodations, which are not yet sufficient for meeting the growing tourism demand in most areas outside of Panama City, are expected to grow. Although most expansion in hotel capacity is expected to occur in the metropolitan area of Panama City, in relative terms accommodations are likely to more than double in Bocas del Toro and significantly rise in Cocle and other areas of coastal tourism (Appendix Table 2).

Tourism is a major source of foreign exchange for the economy, and a potentially powerful means of reducing poverty. It can also help improve the economic profitability of some measures aimed at preserving biodiversity and natural habitats, such as through well-managed ecotourism services. But uncontrolled tourism development poses significant social and environmental risks, particularly

acute in Panama because of the already high inequality and environmental sensitivity of the growing tourist destinations in the proximity of the Mesoamerican Biological Corridor (MBC).

3. Tourism sector could be the key for poverty reduction and growth in rural areas

Panama has traditionally been characterized by a .dual. economy with high inequality and includes: (a) the rapidly growing urban sector based on exports and services from the Canal and the ZLC; (b) poor urban areas and the rural areas, where agriculture is the main source of livelihood and poverty is high, especially in the indigenous areas.[6] The urgency of the poverty concerns is evident from the deep divide between the urban and rural areas, and—within rural communities—between the indigenous and non-indigenous. Almost 85 percent of the poor in Panama live in indigenous and in non-indigenous rural areas, and—despite the slight narrowing of the gap by 2008—poverty rates in rural and especially in indigenous areas of Panama are still more than twice as high as in urban areas (Table 2).

Table 2. Poverty Has Slightly Declined Nationally and in the Indigenous Areas.

	Poverty (percent of population)			Extreme Poverty (percent of population)			Inequality (Gini coefficient)	
	1997	2003	2008	1997	2003	2008	1997	2003
National	37.3	36.8	32.7	18.8	16.6	14.4	48.5	46.9
Urban	15.3	20.0	17.7	3.1	4.4	3.2	41.4	42.1
Rural (non-indigenous)	58.7	54.0	50.7	27.4	22.0	22.2	41.3	39.0
Indigenous	95.4	98.4	96.3	86.3	90.0	84.8	40.2	34.9

Source: 1997 and 2003 ENV data, reported by World Bank (2007). The 2008 ENV estimates are cited from Panama's *Instituto Nacional de Estadistica y Censo* data (2008) and from World Bank (2010).

This duality between the welfare levels in urban and rural regions of the country is also very pronounced between non-indigenous rural and indigenous areas. Poverty among the indigenous was twice as high as in non-indigenous rural areas, rising in the early 2000s and then returning to the level of the late 90s by 2008 (Map 1). The discrepancy was more striking for the extreme poor. Over 40 percent of the extreme poor lived in non-indigenous and indigenous rural areas, according to the 2003 household survey data, and the remaining 16 percent lived in urban areas. Only 8 percent of Panama's population lived in the indigenous areas, but 90 percent of the population in those areas lived in extreme poverty.

Map 1. Tourism Sector Has the Potential to Bridge the Poverty Divide
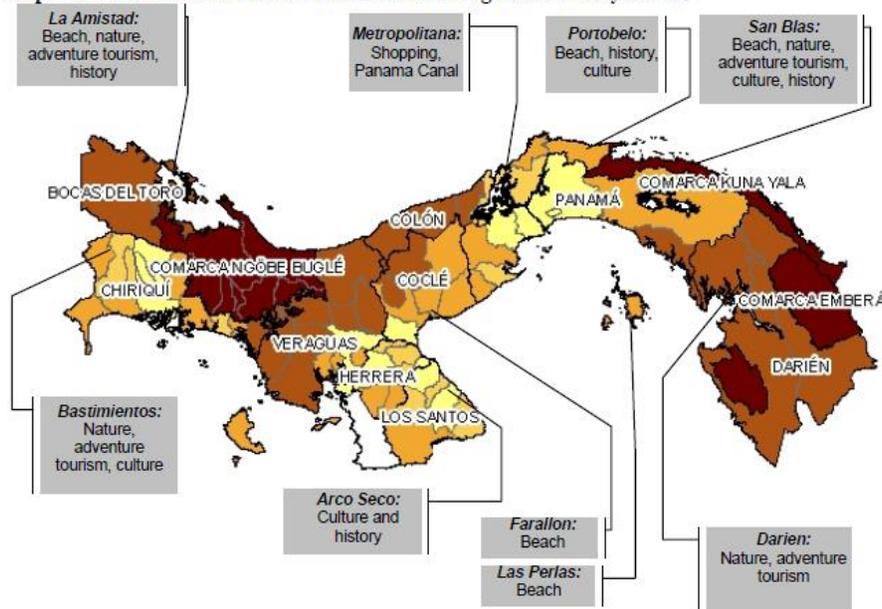
Note: District level poverty estimates generated with ENV 2003 and 2000 Population Census data.
Districts with darker shading have higher poverty rates (general poverty line).
Source: Poverty mapping data by the Ministry of Economy and Finance, 2005; Tourism Masterplan,
2008:220.

While the gap between the welfare levels in the non-indigenous rural and in the urban areas has slightly narrowed over the 1997–2003 period, it has widened between the indigenous areas and the rest of the country. Over 98 percent of the indigenous were poor and over 90 percent were extreme poor in 2003. Similarly, levels of malnutrition are substantially higher in indigenous areas, and schooling levels are significantly lower. A considerable reduction in inequality during 1997–2003 has helped significantly reduce the rate of extreme poverty in non-indigenous rural areas, but it has not been sufficient to improve poverty in indigenous areas.

Growth of the tourism sector can be a major new source of off-farm income in rural and in some indigenous areas, resulting in a significant decline in rural and indigenous poverty. This reduction can occur through several channels: employment creation, higher wages, and access to newly provided infrastructure and community services developed as part of the tourism area. Tourism development can also benefit the local population through indirect effects, such as changing prices for land and agricultural products.

But tourism growth can also have adverse social and poverty consequences at the local level. Communities can lose access to natural resources, for example, traditional fishing grounds and forests; water quality may deteriorate with development of mass tourism and real estate construction in coastal areas; households that are net consumers of agricultural commodities and services would be adversely affected if their prices rise; in some circumstances, the social fabric in the indigenous communities may be damaged by tourism development. Despite the significant aggregate gains from

the growth of the tourism sector for the country, at the local level this impact may be ambiguous. The direction and the magnitude of the welfare impact at the province, district and community levels crucially depends on the extent to which the growth of economic activities associated with the tourism sector stimulates the local economy, and to what extent the poor and indigenous community participate in this growth.

4. Approaches to measuring economic and social impact at the local level.

The tourism sector can play an important role as part of a country's overall growth strategy and contribute to poverty reduction, and from a macroeconomic perspective the sector is clearly an important source of economic growth in Panama. However, the tourism sector's impact on the local economy and people at the destination level is unclear. Global experience reveals that tourism can have significant direct benefits at the local level by generating employment and improving wages, and several indirect effects such as stimulating growth in tourism-related activities (for example, services, transportation, and handicrafts). On the flip side, many of these benefits may accrue to people and factors of production outside of the region. This leakage of benefits increases when hotels and other tourism establishments hire non-local labor and use other inputs, including agricultural products, which originate outside the region. Tourism development can also have negative cultural and social effects on local communities, negating many of its economic benefits.

Benefits to the poor from tourism development don't depend as much on the type of tourism, but on how the tourism economy is structured.[9] The key factors are the way supply chains work, how far backward and forward linkages extend into the economy and reach the poor, and how tourists spend their money. For example, a comparison of case studies of tourism development in Ethiopia, Lao PDR, The Gambia, and Tunisia has contrasting findings with respect to the impact on the poor (Ashley 2006). Cultural tourism destinations —Lalibela in Ethiopia and Luang Prabang town in Lao PDR— dramatically differ in the levels of spending on the local economy. Although 90 percent of the tourists visit Ethiopia's main cultural site Lalibela, craft sellers earn only 1 percent of tourist revenues, while handicrafts are the second-most important sub-chain after the food and beverages sub-chain. The strong handicrafts sector, abundance of small locally owned enterprises, high quality of local goods and services and safety enabling tourists to walk around at any time of day and night are the secrets of success in Luang Prabang. Of around US$ 23 million spent by tourists in Luang Prabang every year, around 27 percent accrues to skilled and semi-skilled people.

Package tourism on Tunisia's beaches creates many jobs and a market for local food —over 90,000 jobs are created in hotels, and an estimated 90 percent of hotels' foods and beverages are made in Tunisia— but with weak linkages with artisans and vendors. In Tunisia, receipts per visitor are less than half that in Morocco and Egypt, with out-of-pocket spending by tourists in Tunisia of as little as US$ 8 per day. Some of the reasons for such low spending levels are the physical separation of resorts from towns, a limited range of high quality products offered by street vendors, and little incentive for beach tourists to leave hotels other than for organized excursions. In contrast, beach

package tourism in The Gambia has very strong linkages with food markets and local shopping, and tourists' out-of-pocket expenditures there average US$ 53 per person per day and US$ 574 over a typical 11 day-long stay—a high level both internationally and compared to the cost of the package. Local initiatives have helped boost these linkages to the local economy, such as an agricultural supply chain project that has boosted the local fruit and vegetable supply, a project to train informal sector operators (juicers, crafters, guides) and hotels to upgrade the quality of services and sales levels.

Tourism development can become a particularly important source of off-farm income in rural and peripheral areas in Panama, and for some population groups it may exceeds the importance of agricultural activities. In Panama, income from agricultural production contributes only between around 10 and 20 percent to total household income in rural areas, with the exception of indigenous areas where it is close to a third of total income; and nearly 40 to 50 percent of total income is from skilled and unskilled labor (Appendix Table 3).[10] By creating new employment opportunities and through the effect on wage levels, the tourism sector is likely to have a significant impact on the local economy, particularly high for the poor and in the indigenous communities. In terms of employment in rural areas, dependence on agriculture is highest among the poor and for indigenous households; employment in the services sector (large and small-scale commerce and repairs) tends to be higher among the non-poor (Appendix Table 4). Since these types of services will be affected by tourism growth, tourism can have significant indirect benefits for the poor.

5. Methodology and data sources

The true size of the tourism sector, more accurate than a partial picture provided by national accounts, can be measured using Input-Output (I-O) and Tourism Satellite Account (TSA) tables.[11] These methods can provide reasonably accurate estimates of the contribution of the sector to overall output, incomes, jobs and sales. The drawback of these approaches is their static nature (they take prices as given); and they do not allow substitution between sectors and do not facilitate distributional analysis or prediction of the effects of a change in tourist expenditures. These models do not shed light on the distribution of earnings from tourism development (Zhang and others 2008; Singh and others 2006; De Agostini and others 2005; and Brida and others 2008).

Within a Social Accounting Matrix Model (SAM)—which is another static approach used in modeling tourism sector impacts—apart from the overall economic impact, it is also possible to address distributional effects across different types of households and institutions. The SAM describes the relevant features of socio-economic structure and the relationship between the structure of production and distribution of income and expenditure among households in a particular area. This methodology combines I-O tables with tables on the distribution of payments to factors of production, including labor, in each economic sector. The multipliers, estimated using SAM tables, measure the extent of backward and forward linkages in the tourism sector and

distribution of benefits. A regionally disaggregated SAM model enables distributional analysis at the subnational level.

Computable General Equilibrium (CGE) models are the only dynamic approach, which captures inter-sectoral linkages and models prices as endogenous. Traditionally, these models looked at households as a single category and assessed aggregate welfare changes for this group. Recent modeling efforts have combined CGE with SAM tables to obtain disaggregated welfare measures by household group. This type of analysis has been undertaken for several years in Denmark to assess economy-wide and distributional impacts of tourism growth using the Local INterregional Economic Model (LINE) (Zhang and others 2008). However, this method is computationally complex and it is demanding in terms of the data requirements. Many policy questions, especially if the main focus is on short- to medium-term impacts, can also be answered within the context of a SAM model.

This study uses the Social Accounting Matrix (SAM) multiplier model of tourism impacts developed, permitting ex ante assessment of the direction and magnitude of the local economic and poverty impacts of the growth of the tourism sector. This model provides estimates of the disaggregated direct and indirect effects of an increase in tourist expenditures on the local economy and on households with specific income and skill levels. The model translates an increase in tourism expenditures at the aggregate level into regional impacts, using information from surveys of tourist expenditures, consumption, expenditure and employment patters of Panamanian households, and the general structure of the economy.

Data for the model stem from three sources: (a) the structure of income and expenditures at the regional level calculated from the 2003 Living Standards Measurement Survey for Panama, (b) visitation and expenditures by domestic and foreign tourists at the regional level calculated from the tourism survey carried out between 2006 and 2007 by the Contraloría for the Tourism Satellite Accounts (TSA),[12] and (c) I-O and aggregated SAM tables that represent the structure of the Panamanian economy at the national level. A SAM multiplier model is estimated using these data sources as inputs. These data sources are sufficient to estimate the magnitude of the impacts on income and employment at the province level for different categories of households.

The SAM model shows the overall direct and indirect impacts and impacts on income and employment disaggregated by province and by household type. Four province archetypes have been selected for the analysis: Panama Province, Bocas del Toro, Chiriqui, and the rest of Panama. Showing disaggregated results for the comarcas was not possible because of the lack of statistical significance of these results, as very few foreign tourists in the tourism survey sample report visiting the comarcas. Modeling results are disaggregated for the following social strata: urban poor, urban nonpoor, rural poor, rural nonpoor, indigenous, nonindigenous poor, and nonindigenous nonpoor.

This analysis of growth linkages of tourism industry in Panama uses a variant of the fixed-price, linear input-output (IO) model, the semi-input-output (SIO) model.[13] The SIO model uses fixed coefficients to simulate inter-industry production and consumption linkages, assuming fixed prices in all sectors. To simulate real-world supply rigidities, the model disaggregates sectors into those which are either supply-constrained (Z1) or perfectly elastic in supply (Z2) (Bell and Hazell 1980). In supply-constrained sectors (Z1), firms operate at full capacity, and output cannot increase without additional capital investment or introduction of new, more productive technology.

Total supply in each sector (Z) is modeled as the sum of inter-industry input demand (AZ) and final demand (F), where final demand includes consumption by households (Y) and exogenous sources of demand such as exports (E). Income (Y) is related to production through a fixed value added share (v) in gross commodity output (Z), (Equation 1).

As indicated in equation (2), the SIO model permits output responses only in those sectors with excess capacity (Z2). Perfect substitutability between domestic and imports/exports in the supply constrained sectors (Z1) guarantees that prices are fixed for all tradeable goods. Thus, for these models to produce a reasonable approximation of reality, the supply constrained sectors must correspond to tradeable goods with fixed domestic supply at the given fixed price, and the perfectly elastic sectors must correspond to non-tradeable goods. In supply-constrained sectors (Z1), increases in domestic demand merely reduce net exports (E1), which then become endogenous to the system.

$$
\begin{aligned}
(1) \quad & Z_1 = A_1 Z + \beta_1 v_1 Z + E_1 \\
& Z_2 = A_2 Z + \beta_2 v_2 Z + E_2
\end{aligned}
$$

$$
(2) \quad \begin{vmatrix} E_1 \\ Z_2 \end{vmatrix} = (I - C^*)^{-1} \begin{vmatrix} Z_1 \\ E_2 \end{vmatrix}
$$

Investment in additional productive capacity or the introduction of new technology will trigger expansion in the production of tradeable goods (Z1) such as agricultural cereals, export crops and manufactures. Therefore, the key shocks initiating growth are those that release production constraints in these tradeable sectors. New investment in productive equipment – induced by government policies or incentives – will increase productive capacity of tradeable goods. Public investment in transportation infrastructure or irrigation facilities opens up new regions to external markets. Public investments in agricultural research generate new technology that improves productivity of cereals and other tradeable agricultural products.

The specification of which sectors are considered elastic in supply is crucial to the SIO model results. In this Panama analysis, production of the major agricultural traded commodities (maize, fruits, shellfish, other agricultural exports and processed milk) is fixed exogenously (i.e. treated as completely inelastic in supply). Rice, oil seeds and other domestic agriculture are modeled as elastic in supply, as are livestock of various types (poultry, small livestock, dairy and large livestock), fish, meat and milled grain. Most industrial sectors (mineral, processed milk, other domestic manufacturing, textiles, other export manufacturing and hotels and restaurants) and economic output of the Panama Canal, the Zone Colon are modeled as inelastic in supply; services (electricity/water, construction, trade, transport/communications, private services and public administration) are modeled as elastic in supply.

6. Results: Province-level Tourism Spending, Growth Linkages and Poverty

The aggregate economic impact of the tourism sector on the Panamanian economy is very significant—according to the data from the national accounts, expenditures by foreign tourists reached around 7 percent of the GDP in 2006. Arrivals of foreign tourists in Panama exceeded 2 million visitors in 2006, of which over 1 million were in direct transit; and total expenditures by foreign tourists totaled US$960 million (Table 3).[14]

Nearly half of all foreign tourists are in direct transit and a quarter visits Panama for recreation. Average expenditures differ significantly across tourist types. According to the national accounts, they range from around US$200 per person per trip for transit tourists to more than three times that amount for recreation tourists (Table 3 and Appendix Table A7). Recent data from TSA surveys are broadly consistent with the national accounts. Average expenditures per tourist are on average US$549 per person per trip compared to the slightly lower average from the national accounts. The latest round of TSA data for tourists in direct transit is not yet available, so the TSA data are representative of recreation, business and other types of tourism and not of direct and indirect transit passengers. Since survey results are regarded as a more accurate measure of tourist expenditures, these findings suggest that the national accounts may overestimate expenditures by recreation tourists and underestimate business tourists' expenditures.

Table 3. Foreign Tourists in Panama: Number of Visitors and Expenditures in 2006

	Data from the National Accounts (2006)					Estimates from TSA Tourism Surveys	
	Number of People	Percent of All Tourists	Total Expenditures, US$ '000	US$/Trip		Percent of all Tourists	US$/Trip
Recreation	569,323	24%	409,947	720		63%	509
Business	309,993	13%	151,859	490		21%	767
Transit (indirect)	312,004	13%	54,598	175		6%	226
Transit (direct)	1,140,430	48%	313,481	275		na	na
Other	54,160	2%	30,182	557		10%	536
All tourists	2,385,910		960,067	402		100%	549

Note: Expenditures in the national accounts and the survey data in this table exclude the cost of international travel by air and land.

Source: Authors' estimates. National accounts data for 2006 are based on the extrapolation of historic trends (not survey-based); TSA data from tourism surveys (2007–08).

Data on tourists' expenditures from TSA surveys, which are based on a sample of 1,626 foreign tourists, are scaled up to the national level, taking the total number of foreign tourists—1,245,480 tourists excluding direct transit visitors—as given (Table 3). On aggregate, the largest single expenditure items are lodging and hotel expenses and personal shopping, apart from the cost of international travel (Appendix Table A6). Total expenditures for foreign tourists from the survey data are allocated to each province using the information on the share of time (the number of days) each tourist spent at each destination.[15] For domestic tourists—or Panamanian residents that travel within Panama—the information on both travel rates and expenditures by destination stems from a survey of 3,498 Panamanian households.

Foreign tourism has a much higher impact on the economy than domestic tourism. In absolute terms, foreign tourism expenditures are highest in Panama Province, but in relative terms they may contribute up to a fifth of the GDP in peripheral areas with low levels of provincial GDP, such as Bocas del Toro.

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Table 4. Estimated Foreign and Domestic Tourism Expenditures as a Share of Province GDP[a]

	Province GDP 2005, Million US$	Percent of Tourist Nights Spent by Foreign Tourists at Each Destination	Foreign Tourist Expenditures, Million US$/Year[b]	Domestic Tourist Expenditures, Million US$/year	Foreign Tourism Expenditures, % of GDP[b]	Domestic Tourism Expenditures, % of GDP
Panama	9,392	71%	452–642 [+313][c]	3.8	5–7 % [+3%][c]	0.04%
Bocas del Toro	165	4%	17–31	0.9	11–19%	0.57%
Chiriqui	1,036	12%	53–94	4.3	5–9%	0.41%
Rest of Panama	3,413	13%	57–100	8.8	2–3%	0.26%
Total	14,005	100%	579–867 [+313]	17.8	4–6% [+3%]	0.13%

a. For details about the estimation procedure and the meaning of the ranges, see text footnote 15.
b. Expenditures in the national accounts and the survey data in this table exclude the cost of international travel by air and land.
c. In addition, tourists in direct transit (that is, tourists that spend less than four hours in Panama and do not leave the airport) have spent a further US$313 million in 2006. This constitutes an additional 3 percent of the GDP of Panama Province. This brings total tourism expenditures for the whole country to 7 to 9 percent of the GDP.
Source: Authors' estimates from tourism survey data for the Tourism Satellite Accounts, 2008.

Tourism revenues have benefits beyond those accruing directly to hotel operators and employees, tour operators, restaurants and shops who sell goods and services to tourists. Incomes earned from these expenditures by tourists are typically spent at least in part on local goods and services, thereby further raising output and incomes. To the extent that local goods and services are elastic in supply and can thus expand in the face of increased demand, the multiplier effects of tourism (or increases in other sector outputs) can be substantial.

Thus, the total effects of tourism on income distribution and poverty reduction depend on more than just the level of spending by tourists on various commodities and services, and who receives the direct employment and incomes from these purchases. The overall impact of tourism also depends on the size of the multiplier effects on output of other sectors, and the distribution of the revenues from increased production to various factors (labor and capital) and ultimately to household groups (poor and non-poor). These multiplier effects are particularly important for spreading the benefits of Panama's tourism industry to the poor, since many of the poor do not have direct contact with tourists, themselves.

The multiplier effects of tourism revenues (and growth in outputs of other sectors) can be estimated using a semi-input-output (SIO) model of Panama's economy. In the SIO model, output of some sectors, typically those producing tradable goods, is assumed to be fixed (completely inelastic), and

does not expand in response to increases in demand. For these products, increased demand results in increased net imports. For elastically supplied products, however, increased demand is assumed to induce increases in output.[16]

The data base for the model is a Social Accounting Matrix (SAM) for Panama for 2003 which describes the input-output structure of production, the distribution of earnings of labor and capital to various household groups, and patterns of spending. In order to enable the simulation of distributional effects of policy, the SAM includes nine productive factors (four types of labor, agricultural land, and four types of capital) along with eight household groups (urban poor and non-poor, rural poor and non-poor for each of four regions Panama City and Canal Zone, Bocas del Toro, Chiriqui and Other Panama) defined using household survey data (Table 5).

Table 5: Panama: Size and Expenditures of Major Household Groups, 2005

	Population ('000)	Population (percent)	SAM Income ($mn)	SAM Income (percent)	SAM Income / Capita ($)
Urban Poor – Panama City	209.9	6.9%	371	3.2%	1,770
Urban Non-Poor Panama City	1,076.7	35.2%	7,466	64.7%	6,934
Urban Poor – Bocas del Toro	19.1	0.6%	31	0.3%	1,601
Urban Non-Poor Bocas del Toro	20.2	0.7%	111	1.0%	5,504
Urban Poor – Chriqui	40.9	1.3%	84	0.7%	2,059
Urban Non-Poor Chiriqui	148.7	4.9%	749	6.5%	5,039
Urban Poor – Other Panama	101.0	3.3%	89	0.8%	878
Urban Non-Poor Other Panama	238.4	7.8%	615	5.3%	2,579
Rural Poor - Panama City	83.9	2.7%	80	0.7%	953
Rural Non-Poor Panama City	79.3	2.6%	235	2.0%	2,966
Rural Poor – Bocas del Toro	54.1	1.8%	67	0.6%	1,246
Rural Non-Poor Bocas del Toro	11.3	0.4%	42	0.4%	3,709

Source: Authors' calculations from 2003 Panama SAM.

Table 6 shows the effects of a 1 dollar exogenous increase in value added from the various tradable goods sectors. For example, on average, a US$1 increase in the output of goods and services from the Zone Colon leads to an additional US$0.42 increase in value added from non-traded goods and services (national economy simulation).[17] This gain is due mainly to consumer spending effects as incomes earned in various activities are spent in the domestic economy. Multipliers are smallest (1.30 to 1.64) in sectors such as the Panama Canal sector, mining and textiles) where there are few production linkages (much of the inputs are imported; much of the outputs are exported) and much of the income accrues to formal capital (enterprises).[18] In contrast, the multipliers for the fruits, shellfish and other agricultural exports are especially large because much of the income earned accrues to rural households who spend a high proportion of their incomes on non-tradable goods and services in the local economy. The multiplier for the tourism industry (hotels and restaurants) is the largest of all the sectors: an additional US$1 in value added (approximately US$2.80 in total

tourism spending) results in a total US$2.87 in total incomes. This large multiplier is due to strong backward linkages in terms of demand for local food products as well as forward linkages of household spending.[19]

Table 6: Panama: Multiplier Effects of Various Sectors[a]

	National	Bocas del Toro	Chiriqui
Canal	1.64	1.66	1.63
Zone Colon	1.42	1.42	1.42
Maize	1.41	1.46	1.37
Fruits	2.02	2.07	1.98
Shellfish	2.23	2.28	2.19
Other Agricultural Exportables	2.18	2.23	2.15
Mining	1.55	1.56	1.55
Textiles	1.30	1.31	1.29
Tourism	2.87	2.90	2.84

a. Total gain in income from a US$1 exogenous increase in value added from the specified sector.

Households reap about 56 percent of the total gains in incomes from tourism expenditures: the remainder of the gain in income accrues to formal enterprises and government (Table 7). Which households benefit the most, however, depends very much on the region in which the tourism revenues are generated. In the national model simulation, which broadly reflects average tourist expenditures in Panama (so that much of the revenues are spent in the Zone Colon), most of the gains in household incomes (63 percent) go to urban non-poor households. Only 20 percent of the income gains accrue to poor households. In contrast, in the simulation of tourism multipliers in Bocas del Toro, poor households (who account for a larger share of the regional labor force in this region than they do nationally), earn 43 percent of the total increase in household incomes, and the percentage gain in household incomes is nearly the same across household groups. The results for Chiriqui are similar to the national simulation in terms of share of household income gains received by the poor (19 percent), though the share earned by rural households is higher (46 percent in the Chiriqui simulation versus 32 percent in the national simulation).

Table 7: Panama: Multiplier Effects of Tourism

	National	Bocas del Toro	Chiriqui
Output multiplier	1.03	1.04	1.02
Value Added multiplier	2.87	2.90	2.84
HH Income Gain / Value Added Shock			
All Households	1.62	1.63	1.60
Income Share of Households	56.4%	56.1%	56.4%
% Change Household Income			
Urban Poor	—	7.1%	1.3%
Urban NonPoor	—	6.3%	1.1%
Rural Poor	—|	8.2%	1.8%
Rural Non-Poor	—	7.9%	1.6%
Share of benefits			
Urban Poor	5.3%	12.1%	6.2%
Urban NonPoor	62.7%	38.7%	47.9%
Rural Poor	14.4%	30.8%	13.2%
Rural Non-Poor	17.7%	18.5%	32.7%
Total	100.0%	100.0%	100.0%
Poor	19.6%	42.8%	19.4%
Non-Poor	80.4%	57.2%	80.6%
Urban	67.9%	50.8%	54.1%
Rural	32.1%	49.2%	45.9%

Source: Panama Semi-Input-Output model simulations.

Because of data uncertainties and simplifying assumptions used, the above analysis of the effects of increases in agricultural output on incomes in the Panama economy illustrates only the broad order of magnitude of the effects. Nonetheless, the broad structure of production, and the structure of household incomes and demand are reflected in the analysis.

It is important to note, however, that the simulations imply an even distribution of the gains to returns to labor and capital across all owners of these factors. This assumption is valid if labor markets function well so that increases in labor demand are reflected in general rises in wage rates that benefit all workers. Yet, location of activities matters a lot for local labor markets and especially for returns to capital and backward linkages to agriculture. The implication is that including much of the rural poor (and minorities) in the benefits of growth in tourism will require that these households are well integrated in product and factor markets where the investments take place.

Some of the assumptions underlying this model cannot be verified without destination level data. For example, it is necessary to ascertain such underlying basic facts as whether certain household groups tend to be precluded from employment in all-inclusive resorts; whether local agricultural products are deemed as suitable for purchase by hotels and restaurants; or whether any obstacles exist to development of handicrafts and local services as hotels are built. To answer these kinds of questions and develop monitoring of local-level impacts, it is necessary to conduct destination level surveys of at least a few selected areas where tourism has already developed.

7. Conclusions and policy recommendations

The tourism sector has large significance for the Panamanian economy because of very high and rapidly increasing arrivals of foreign tourists and high levels of spending. This is evident from very large contribution of the sector to GDP—somewhere in the range of 6 to 9 percent; arrivals of foreign tourists that exceed 70 percent of the country's population over a year; and particularly high economic significance in relative terms in peripheral areas such as Bocas del Toro. Furthermore, the tourism sector has the highest multiplier effects on the economy—that are nearly double the multiplier of Zone Colon and the Canal—because of very high backward and forward linkages. The sector also has a large potential to benefit the poor—most of the gains in household incomes from Zone Colon, the Canal and other sectors of the economy accrue to urban non-poor households while simulations in this paper suggest that the poor earn a far greater share of the total increase in incomes from tourism.

These findings strongly suggest that the tourism sector must be seen as an important sector in the efforts of Panamanian authorities to reduce poverty in this highly dual economy. But as suggested by the global experience, poverty benefits from the tourism sector are not automatic, and whether or not they receive a significant share of the benefits depends on the way the supply chains are structured and the way tourists spend their money.

Given the importance of the tourism sector and its potential to result in large benefits for the poor, devising a set of indicators and effective monitoring schemes is of paramount importance. These indicators fall into three categories: (1) accurately measuring the flows of tourist expenditures to provinces and to the indigenous areas comarcas, which was so far not possible with the available data; (2) measuring the impact of tourism on local employment and wage levels at hotels, restaurants and other tourism-related enterprises; (3) measuring the extent to which tourism establishments affect local food and beverage production and devising complementary projects to enhance agricultural productivity and improve access of local, particularly smallholder and poor farmers, to the supply chains; (4) stimulating production and availability of quality handicrafts and artisan products in areas with high potential for these industries and measuring impacts of tourism on these sub-sectors; (5) measuring availability of infrastructure availability and services to assess the degree of connectivity to markets, and the ease of travel within the country's more peripheral areas.

The household level data and data from tourism surveys (Satellite Tourism Accounts) that are needed for monitoring local impacts of tourism growth are already available in

Panama. This paper has identified the data needs in order to carry out a more comprehensive and accurate assessment of local impacts of aggregate growth in tourism expenditures—survey data at the level of tourism destinations. No data are available to help determine which specific types of employment and specific subsectors of the economy the incremental income from the tourism sector accrues to. For example, it is not possible to distinguish how much of the increased demand for agricultural products and services is met through local providers, and how much is imported from outside the region. Availability of such data would greatly enhance the possibility of accurate monitoring of local impacts of tourism development.

Notes

[1]Irina Klytchnikova is Senior Economist in the Sustainable Development Department of the Latin America and Caribbean Region of the World Bank. Paul Dorosh is Division Director, Development Strategy and Governance Group at the International Food Policy Research Institute (IFPRI). The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent, or of the International Food Policy Research Institute.

[2]Panamanian Tourism Authority (2010). The Statistical Bulletin. Panama City.

[3]Passengers in direct transit are visitors that spend less than 10 hours in the airport and proceed to other destinations. Using this definition, in 2005, 48 percent of tourists were in direct transit, and a further 13 percent were defined as (indirect) transit passengers. An additional 24 percent were recreation tourists, 13 percent business visitors, and 2 percent—non-business visitors for purposes other than transit or recreation.

[4]Results for October and November 2007 of the ongoing tourism survey conducted by PSM SIGMADOS. Each month's sample size is 500 tourists (with the total sample size of 6,000 once all rounds of the survey are completed).

[5]Tourism survey conducted in June 2006 by Dichter & Neira Latin Research Network. Sample size: 843 foreign tourists.

[6]The Ngobe-Bugle are the largest group (175,000 people), living mainly in the Bocas del Toro (bordering Costa Rica) and Chiriqui provinces; the Kuna on the Caribbean coast are the second largest (92,000 people); and the Embera-Woonan (33,000) live mainly in the rainforest of the Darien (bordering Colombia) and Panama provinces. The Ngobe-Bugle have the least political leverage, and

this group's culture and livelihoods are under threat. The Embera-Woonan and some smaller indigenous groups also have a weak political voice, and this group's livelihoods are under threat because of lawlessness and safety problems, resulting in strong out-migration. The Kuna have a strong political and administrative structure, thanks to strong local leadership.

[7]Based on the detailed analysis in .Panama Poverty Assessment: Toward Effective Poverty Reduction, World Bank, 2007.

[8]World Bank estimates using 2003 LSMS data.

[9]The following review of the four case studies is based on Ashley (2006).

[10]Some of this is agricultural labor.

[11]I-O tables decompose GDP into a matrix of inputs and outputs. The Tourism Satellite Accounts approach was developed by the World Tourism Organization with a view of implementing a universal measurement methodology for the tourism industry and the tourism sector.

[12]Surveys of foreign tourists were implemented at two main entry points into the country—Tocumen Airport and Canoas Pass—over the course of six weeks throughout different seasons in 2006 and 2007 and include data for 1,626 foreign tourists (surveyed at the Tucuman Airport and at Paso Canoas) that account for a total of 4,687 trips. Surveys of domestic tourism were implemented in July 2006 and April 2007 and collected data on trips completed throughout 2006; these surveys collected data for 3,498 Panamanian households (of which 34 percent report having gone on trips in the previous year). Data on expenditures is available for 1,604 foreign tourists in the sample; 252 tourists travel with a package and their expenditures are not included in the calculations in this paper. Thus, results shown here are based on averages for 1,352 foreign tourists with non-missing data on expenditures and who did not travel with a package.

[13]This presentation of the SIO model is derived from Dorosh and Haggblade (2003), —Growth Linkages, Price Effects and Income Distribution in Sub-Saharan Africal. Journal of African Economies, 12(2).

[14] Tourists in direct transit are defined as visitors that stay in the airport less than 10 hours, do not leave the airport area and proceed to other destinations.

[15]Database on foreign tourists' expenditures includes expenditures for all destinations and information on which destinations tourists visited on the same trip, but no information on expenditures by destination. The estimation of expenditures by province is done here using two methods. First, total expenditures are disaggregated by province in the same proportion as the share of time (the number of days) all tourists in the sample spend in each province. An adjustment is made for a slightly higher level of average spending by tourists that visit only Panama and Colon.

This is the lower bound on the estimate of total expenditures by province reported in Table 4. Thus, this approach takes the total aggregate expenditures by all tourists in the sample and allocates them to each province in the same proportion as the share of time spent in each province (adjusting for the higher spending in Panama and Colon). The second method uses the estimated daily per capita expenditures by foreign tourists (all tourists and tourists that only went to Panama and Colon) and multiplies these expenditures by the cumulative number of days spent at each destination. This method can be described as a *bottom-up* approach while the previous method is *top-down*. Estimates using the second method result in the upper bound estimates of total tourist expenditures by province in Table 4. Expenditures by tourists in direct transit (not part of the TSA survey) are assumed to occur in Panama Province and contribute a further 3 percent to its GDP. These results are shown in square brackets in Table 4.

[16]In the Panama SIO model used here, economic output of the Panama Canal, the Zone Colon, maize, fruits, shellfish, other agricultural exports, mineral, processed milk, other domestic manufacturing, textiles, other export manufacturing and hotels and restaurants sectors is assumed to be fixed (completely inelastic in supply). The remaining sectors (rice, oil seeds, poultry, small livestock, dairy, other domestic agriculture, large livestock, fish, meat, milled grain, electricity/water, construction, trade, transport/communications, private services, and public administration) are assumed to be elastic in supply.

[17]The value added multipliers vary little across region because the input-output structure and patterns of factor payments to households are assumed to be the same across regions (since regional input-output tables are not available).

[18] In these multiplier simulations, investment is held constant and income gains to enterprises are not distributed as dividends (income) to domestic households.

[19] These simulations may understate the multiplier somewhat because the hotels and restaurants is exogenously fixed in supply. Thus, there are no demand linkage multiplier effects for this sector (apart from the initial simulated increase in demand and output). Note that in the regional simulations, it is assumed the all demand for elastically supplied goods and services are assumed to be met from firms within the region.

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Appendix

Table A1. Tourism Arrivals and Expenditures, 2006 (estimated)

	Number of tourists	Expenditures (thous. US$)	Number of tourists (% of Panama's population)	Expenditures (% of 2006 GDP)
Recreation	569,323	409,947	17%	2.4%
Business	309,993	151,859	9%	0.9%
Indirect transit	312,004	54,598	10%	0.3%
Direct transit a/	1,140,430	313,481	35%	1.8%
Other personal travel	54,160	30,182	2%	0.2%
Total	**2,385,910**	**960,067**	**73%**	**5.6%**

Note: a. Direct transit refers to tourists who stay in Panama briefly and continue onto final destination in other locations.
Source: Contraloría General de la Republica (2008).

Table A2. Projected Investment in Hotel Accommodations over Five Years

	Number of Rooms (current, 10/2007)	Projections for 11/2007–2012			
		Additional Rooms	Percent Increase in Number of Rooms	Investment, US$ '000	Additional Employment, Number of Jobs
Bocas del Toro	539	597	111%	58	1,389
Colon	1,297	528	41%	35	1,017
Cocle	1,443	313	22%	35	460
Chiriqui	1,746	339	19%	91	560
Darien	84	–	0%	–	–
Herrera	330	–	0%	–	–
Los Santos	272	6	2%	0	3
Panama	10,017	7,074	71%	1,861	26,145
Veraguas	561	–	0%	–	–
Total	16,289	8,857	54%	2,080	29,574

Note: Data on 52 new investment projects from the National Tourism Register. Investments include tourist accommodation projects of at least US$300,000 in the metropolitan area and US$50,000 in the rest of the country, excluding land value. For restaurants and clubs, the data include investments of at least US$120,000 in the metropolitan area and US$20,000 in the rest of the country, excluding land value.
Source: IPAT, Sustainable Tourism Masterplan (2008:25).

Table A3. Household Income Sources as Share of Total Income

	Unskilled Labor	Skilled Labor	Labor (missing type)	Non-labor Income	Other Income	Agricultural Production Income	Imputed Rent
NATIONAL							
Rural Poor	0.22	0.16	0.02	0.23	0.01	0.21	0.16
Rural Non-poor	0.16	0.33	0.02	0.20	0.02	0.10	0.19
Indigenous	0.17	0.19	0.02	0.22	0.00	0.28	0.14
PANAMA PROVINCE							
Rural Poor	0.23	0.26	0.02	0.21	0.01	0.11	0.19
Rural Non-poor	0.15	0.38	0.01	0.22	0.02	0.08	0.18
Indigenous	0.16	0.57	0.00	0.06	0.01	0.05	0.22
BOCAS DEL TORO							
Rural Poor	0.14	0.27	0.02	0.24	0.00	0.23	0.12
Rural Non-poor	0.13	0.42	0.02	0.22	0.02	0.08	0.15
Indigenous	0.15	0.33	0.02	0.22	0.01	0.19	0.12
CHIRIQUI							
Rural Poor	0.23	0.24	0.03	0.23	0.01	0.13	0.16
Rural Non-poor	0.16	0.35	0.02	0.20	0.03	0.08	0.19
ALL COMARCAS							
Rural Poor	0.17	0.07	0.02	0.26	0.00	0.35	0.13
Indigenous	0.18	0.06	0.02	0.25	0.00	0.36	0.13
REST OF PANAMA							
Rural Poor	0.25	0.14	0.02	0.23	0.00	0.20	0.18
Rural Non-poor	0.18	0.30	0.02	0.20	0.02	0.13	0.19
Indigenous	0.24	0.22	0.01	0.24	0.00	0.20	0.12

Source: Authors' calculations from 2003 ENV data.

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Table A4. Primary Sector of Employment: Panama National Averages (in percent of the labor force)

	Urban Poor	Urban Non-poor	Rural Poor	Rural Non-poor	Indigenous	Nonind Poor	Nonind Non-poor	Total
Agriculture, pastoralism, silviculture	4	2	51	43	54	29	12	20
Small and large-scale commerce, repairs	21	20	9	12	8	15	18	16
Health, personal and social services	10	11	4	4	4	6	9	8
Transport and communications	7	7	3	4	2	5	6	5
Manufacturing	7	8	6	5	9	5	7	7
Restaurants and hotels	6	6	3	3	2	4	5	5
Public administration and defense	7	8	3	4	3	5	7	6
Education	6	5	3	4	3	4	5	5
Domestic services	6	6	4	4	2	5	6	5
Construction	6	6	3	4	2	5	6	5
Other sectors	7	8	4	5	4	5	7	6
Unemployed	13	13	7	8	6	10	12	11

Note: Sector of primary employment by all household members in the labor force as percent of the total labor force. Unemployment figures are calculated using the definition of the *Contraloria*.
Source: Authors' estimates from ENV 2003 household survey data.

Table A5. Imputed Province Level Expenditures by Domestic Tourists (thousands US$ per year)

	Bocas del Toro	Chiriqui	Panama	Rest of Panama	Total
Food and drinks	270	1,198	925	2,710	5,136
Transportation	280	1,159	801	2,122	4,419
Lodging	185	707	538	1,038	2,516
Personal shopping	39	303	892	489	1,749
Entertainment	18	179	125	435	758
Handicrafts	10	112	192	231	550
Communications	11	79	88	169	350
Sports, equipment rental	25	26	3	99	152
Other	10	61	99	89	264
Total expenditures	939	4,603	4,313	8,674	18,744

Source: Authors' calculations from Tourism Satellite Account survey data for 3,498 households (34 percent of them with trips), rescaled to represent total the number of households in Panama (according to 2000 Census data).

Table A6. Imputed National Level Expenditures by Foreign Tourists (lower bound) (thousands US$ per year)

	Total Expenditures, Thousands US$/year
Lodging and hotel	140,336
Rent	6,872
Food and drinks	91,701
Local transportation (taxi, car rental, train, boat, domestic flights)	38,177
Handicrafts	8,055
Personal shopping	209,697
Entertainment (tickets)	5,015
Communications	6,067
Services	72,977
Total (excluding international transport)	**578,897**
Additional: International transport (land and air)	221,911

Note: This desegregation corresponds to the lower bound estimates in text Table 4.
Source: Authors' calculations from Tourism Satellite Account survey data for 987 tourists, rescaled to represent total annual tourism flows (based on 2005 figures on total tourism expenditures).

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Table A7. Foreign Tourists (non-package) that Entered Panama through Aeropuerto Tocumen and Paso Canoas

	Total Trip Expenditures (US$)		Daily Expenditures (US$)		Total Trip Expenditures by Principal Reason for the Trip (US$)			
	All	Pan-ama and Colon only	All	Panama and Colon only	Recreation	Business	Transit	Other
Lodging and hotel	196	196	31	33	205	247	83	104
Rent	10	8	1	1	8	12	0	17
Food and drinks	128	133	19	20	128	139	41	162
Local transportation (taxi, car rental, train, boat, domestic flights)	53	57	7	8	57	64	13	38
International transport (land and air)	310	368	51	66	312	358	51	360
Handicrafts	11	9	2	1	14	6	2	15
Personal shopping	293	360	46	58	301	315	111	323
Entertainment (tickets)	7	10	1	1	3	21	1	1
Communications	8	9	1	1	7	14	1	8
Services	102	102	20	19	97	133	22	112
Total, including int'l transport	1,119	1,251	178	209	1,133	1,309	324	1,140
Total, excluding int'l transport	809	883	127	143	820	950	273	780
Total p.c. excluding int'l transport	549	612	86	99	509	767	226	536
Memorandum items:								
Number of observations	1,355	863	1,355	863	780	334	97	143
Number of persons per group	1.5	1.4	1.5	1.4	1.6	1.2	1.2	1.5
Number of days per trip	13	15			13	10	8	21

Note: These results exclude 249 tourists that traveled with a package tour. Total sample size, after dropping 22 outliers, is 1,604.

Tourists from cruise ships are not included in the database.

Source: Authors' calculations from Tourism Satellite Account survey data for 987 tourists, rescaled to represent total annual tourism flows (based on 2005 figures on total tourism expenditures).