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Manuel Antonio Rivera  
*University of Central Florida*

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**THE SYNERGIES BETWEEN TOURISM EXPANSION AND DEVELOPMENT: AN  
ANALYSIS OF ECONOMIC GROWTH, POVERTY AND HUMAN DEVELOPMENT  
IN ECUADOR**

by

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A dissertation submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the College of Education  
at the University of Central Florida  
Orlando, Florida

Fall Term  
2011

Major Professor: Robertico Croes

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## ABSTRACT

This dissertation attempts to answer the question of what has been the effect of tourism expansion and development in Ecuador. We attempt to analyze, both theoretically and empirically, the relationship between tourism and development. There have been an enormous number of studies explaining how tourism can affect the various dimensions of development. However, no research has been undertaken to simultaneously empirically examine the impact that changes in tourism expansion has on poverty, human development, and economic growth.

To this end, we propose a cointegration methodology with an error correction model to estimate the impact of tourism expansion on poverty, human development, and economic growth. This study employs time series data from 1988 to 2008 as well as a Granger causality test to examine the hypothesized relationships. The five most important results are, first, that tourism seems to have distinguishable effects on reducing poverty. In the case of Ecuador, a tourism poverty nexus exists and it helps fight poverty in terms of intensity, inequality, and the proportion of poor. Secondly, economic growth in Ecuador is “pro-poor”. Increases in economic growth have both short and long term effects on poverty reduction. Thirdly, tourism does not yet promote human development but the other way around. Therefore a virtuous cycle between tourism and human development does not exist yet. Therefore, opportunities exist to further promote tourism in an attempt to support human development programs. Fourthly, economic growth promotes human development but human development does not yet promote growth. These results suggest that Ecuador is in HD lopsided situation when it comes to economic growth and human development. Finally, the relationship between tourism and economic growth is bi-directional; the expansion of either sector promotes the growth of the other.

**This dissertation is dedicated to my beautiful family, love you all.**

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## **CHAPTER I**

### **Introduction**

This dissertation examines the relationship between tourism expansion and development. This chapter begins by providing background information on the current state of poverty around the world, the potentials of tourism as a vehicle for development, and the various interventions needed for the sustainability of any tourism expansion strategy. This is followed by a description of the problem that motivated the study which sets the tone for establishing the purpose of the study. Next, the chapter provides a brief description of the theoretical framework and the research questions that guide the investigation, succeeded by a synopsis of the methodology. Finally, the chapter concludes by discussing the significance of this dissertation with regards to its contributions (theoretical, methodological, and practical) and its limitations.

### **Background**

One of the biggest challenges that confront today's society is the subsistence of poverty around the world. The pervasive nature of poverty is seen in that three billion people live in extreme poverty, meaning that they survive with less than \$2.50 a day, but also by deteriorating conditions in which this people live (World Bank, 2009). When evaluating the living conditions and consumption capabilities of the poor, it is evident that massive inequalities exist. For example, the poorest 20% of the world's population account for 1.5% of the world private consumption; meanwhile the richest 20% consume an astonishing 77% (World Bank, 2009). This means that the poor is chronically hungry, lacks safe drinking water and sanitation, cannot

provide proper education to their children and is devoid of shelter. While the modern world lives in opulence and abundance, the poor are restricted from basic needs such as health, sustenance, education, and peace. More worrisome is the fact that 25,000 children starve to death every day. Morally, this is unsustainable because in the face of the ongoing catastrophe no longer the lives of those in need can be ignored and immediate action is required (UNICEF, 2008). Economically, productivity is being wasted at the expense of increasing frustration, hate and instability in the world.

Since the early 1990's, after the "decade of painful learning" of the 80s (Buitelaar, 1991), the persistence of poverty and the lack of significant economic growth in developing countries triggered a worldwide interest in ending poverty. The United Nations led the way by demonstrating a clear commitment to the eradication of poverty by 2015 with the execution of the Millennium Development Goals (MDG) (UN, 2008). Currently the MDG's are considered the most significant global development framework that covers the many aspects of poverty, and are cementing the idea that poverty is unacceptable and action is required (Sachs, 2005:25). The value of the MDG's is that they provide a unifying vision for approaching poverty in which the center of attention is improving human needs and values. Consequently, the pledge for poverty now includes governments and individuals that have demonstrated their commitment as well. For example, Collier (2007:5) calls for intervention from Western governments to provide strategic assistance in eliminating 'poverty traps' which exuberates misery for the bottom billion. At the same time, on a more individualistic level, Singer (2009:151) pleads for altruistic behavior simply because it does not cost much to save a life.

In addition to all these efforts, tourism has re-emerged as a development vehicle to help reduce poverty because it has become a major social and economic phenomenon. For example, international tourist arrivals have increased from 25 million in 1950 to over 900 million in 2007 (UNWTO, 2008). Because of the size of the industry, it is now the fourth largest export, only behind fuels, chemicals and automotive products. Regardless of some deterioration and a somewhat bleak macroeconomic performance in the second half of 2008, tourism continues to be among the most dynamic economic sectors, generating a wide range of benefits including a growing contribution to gross domestic product, in some cases over 10%, and substantial foreign exchange earnings (UNWTO, 2008). Looking beyond the current economic misfortunes, the World Travel and Tourism Council (WTTC) forecasts an average growth rate of 4.4% for the tourism industry between 2009 and 2018, representing 10.5% of the global gross domestic product and supporting 297 million jobs (WTTC, 2009). A significant amount of this growth will accrue to developing countries (UNWTO, 2008).

Tourism is already an important force in developing countries. For example, the proportion of international tourism receipts accruing to developing countries amounted to 25% of the total global international receipts in 2005; tourism has become the principal export of a third of all developing countries and the main source of foreign exchange earnings of 49 of the least developed countries (Vanegas & Croes, 2007). Tourism expansion is taking place in 11 of the 12 poorest countries that account for 80% of the world's poor (Ashley, Roe & Goodwin, 2001). Moreover, inbound tourism trends for developing world, especially Latin America and the Caribbean, have demonstrated strong potential for growth in the new millennium (Strizzi & Meis, 2001, UNWTO, 2008).



It is evident that the tourism industry plays an important role in the world's economy. However, despite the numerous studies about tourism planning and development (e.g., Gunn, 1994; Hall, 2008; Mason, 2008), an ongoing debate about the potential role of tourism for development still exists. The main goal of development is to improve the quality of all human lives by considering specific aspects such as raising income and consumption levels, creating self-esteem by promoting human dignity and respect, and increasing people's freedom by enlarging their choices (Todaro & Smith, 2006:810). Many tourism researchers favor tourism expansion for its potential to create jobs, the multiplier effect (Archer & Fleisher, 1996; Sinclair & Stabler, 1997), backward and forward linkages (Cai, Leung & Mak, 2006), contribution to the balance of payments (Sinclair, 1998), and promoting social exchange and enhancing livelihoods (Simpson, 2008). This particular stream of research is part of an "empirical school" of researchers whose goal is to confirm the economic contributions of tourism in order to develop strategies that reap the most benefits for the destination. As such, tourism is then viewed as a "big business" that fosters development, a response to the earlier distrust of tourism as a vehicle for development (e.g. DeKadt, 1979).

Another stream of research argues that in developing countries the expansion of tourism can be detrimental. Copeland (1991) argued that tourism expansion can have adverse effects on the distribution of income of different social groups. In other areas, however, one of the significant criticisms is that tourism perpetuates underdevelopment. Some even argue that tourism expansion converts the destination into a "pleasure periphery" where the tourists are considered a "golden horde" that exploit the destination to satisfy his own interest (Turner & Ash, 1975), and consequently any expansion is viewed as a globalizing force that pursues profits

over justice (Reid, 2006). These studies are based on the assumption that tourism expansion occurs only within the context of mass tourism, which is indeed conceived as an enclave industry where tourists rarely venture outside the bounds of the resort property and are kept in an environmental bubble without interacting with the local population (Mowfort & Munt, 1998:46).

In addition to this research, since the 1990's another group of researchers, the Pro Poor Tourism Partnership (PPT), has been committed to investigating tourism's potential for development and poverty alleviation (e.g., Ashley et al., 2001). Their vision led the way for the United Nations World Tourism Organization (UNWTO) to establish the Sustainable Tourism for Eliminating Poverty (ST-EP) to promote socially, economically, and ecologically sustainable tourism as a gateway for development. The modus operandi of the PPT and the ST-EP differs from the traditional philosophy of tourism development previously discussed. Their approach is to establish a direct link between tourism and poverty alleviation via economic growth (Ashley et al., 2001). As such, their research contributions are geared at understanding practical partnerships between local residents and tourism operators to maximize benefits for the poor. However, such assessment does not allow for the understanding of how tourism can contribute to the national economy or reduce poverty levels since it only focuses on specific areas, cases, or communities within a destination (e.g. Briedenhann & Wickens, 2004).

The learning and reasoning behind PPT and ST-EP, although valuable, does not allow, however, for providing external validity for cases because it lacks the necessary rigor, thereby preventing these efforts to be incorporated in the academic mainstream and participating in major debates about development (Harrison, 2008). Rigor enables studies in tourism to be comparatively assessed within the economic stratagem devised by governments in an attempt to

advance development. For example, Harrison (2008) alludes to the contributions of tourism by acknowledging the early researchers who regarded tourism as either a blessing or a blight, to assert that the theoretical debates about tourism and development have not gone away, but instead have become more complex. He suggests that what is needed is research “over time” on whom it benefits. This will then allow for targeted action and policy formulation.

The importance of understanding the impacts of tourism at the national level is that, unlike other economic sectors, the sustainability of tourism is highly dependent on the intervention of the state (Bull, 1995; Jenkins & Henry, 1982). William and Shaw (1988:8) make a distinction between state and government by acknowledging that the latter can change while the former will continue to exist. The power of the state in policy formulation integrates many institutions such as the central government, ministries of state, administrative departments and enforcement agencies; thus their scope and involvement is obvious. For such reasons, the state often carries the load of establishing infrastructure investment and maintenance, promoting the destination, and facilitating tourism expansion.

For example, various tourism scholars (Mak, 2004:155; Sinclair & Stabler, 1997:180; Socher, 2006:194) provide support for the idea of government intervention for the marketing of tourism based on the rationale of “market failures.” This is not without controversy, mainly because of the use of tax payers’ money for promoting the destination, which many who favor free markets and minimal government object to this on ideological grounds. However, the concept of market failures is signified by the fact that tourism markets have high transaction costs and will not operate efficiently if left alone. Unlike other products, tourism is both a “composite product” and an “experience good” (Mak, 2004:12). The tourists experience is not

only formed by the consumption of services but also by experiencing common-pool resources. In addition, their purchase decision is contingent to past experiences, referrals, or the reputation of destination. The presence of these two unique characteristics provides little incentive for individual tourism firms to efficiently market the destination as “free riders” can easily seek profits from the marketing efforts of others without paying for it. As a major stakeholder in the development of tourism, the state cannot deny responsibility for the attainment of long term objectives and often needs to compensate for the absence of a strong tourism-experienced sector or perfect markets; otherwise the final result will be an economic, social, and financial disaster (Bull, 1995; Croes & Rivera, 2010).

The state’s engagement in expanding the tourism sector is typically tied in with the support of international organizations that provide funding for tourism projects. One such organization is the World Bank, the only institution that has some bearing on how governments perceive the role of tourism in their economies (Hawkins & Mann, 2007). However, as for considering tourism as a development option, the bank’s position has clearly evolved in the past three decades. Its role in tourism development was crucial in the 1970’s, as shown by its financing of projects aimed at creating a platform for international tourism through infrastructure, urban regeneration, and capacity building. Unfortunately by the end of the decade the bank disengaged itself from funding tourism and drifted away from the industry. As a result, the bank stopped lending for tourism development projects and the European Union emerged as the new funding agency for tourism in developing countries. In the 1990’s, the emergence of a sustainable development ideology created an opportunity to reconsider tourism as a venue for

environmental sustainability and cultural preservation. Regrettably, the lack of authority and commitment to tourism resulted in a lack of oversight and assessment for developing projects.

Currently, the bank's position has changed. It now considers lending for the stabilization of macro-economies and raising the livelihood of peoples. As a result, Mann (2005) indicates the bank is currently funding 164 projects with a total value of US\$3.5 billion. This is a welcome change from the past in which its support for tourism was particularly aimed at creating a platform for international tourism through infrastructure, urban regeneration, and capacity building. Furthermore, the bank has clearly developed a keen interest in interpreting tourism growth as a performance measure and acknowledges the need to demonstrate the links between tourism development and poverty by means of economic models with empirical data (Hawkins & Mann, 2007). The bank recognizes that the main problem is not attaining growth via tourism but how growth is distributed to reduce poverty. As a result, one of the most significant discussions in the literature is the potential of tourism as a development tool and the interest in tourism-based poverty alleviation initiatives (Ashley et al, 2001; Hall, 2006; Zhao & Ritchie, 2007).

Therefore, the creation of new research techniques can be used to direct the policymaking process and provide guidance on the level of intervention required by the public sector in order to achieve desired outcomes of development as it relates to the expansion of the tourism sector and its effects on poverty reduction (Bull, 1995).

### **Statement of the Problem**

The literature on classic theories of economic development, seen in the work of Rostow, Lewis, and Dos Santos (see Todaro & Smith, 1997:103), takes no notice of the links between tourism and development nor mention it as a contributor to the process. However, this has not stopped tourism researchers from drawing extensively from such theories to reminisce tourism's contributions as they relate to development theory, dependency theory, tourism and economic development (Mihalic, 2002), community development and welfare (Hall & Brown, 2006); and socio-cultural development and well-being (Hashimoto, 2002; Mihalic, 2002; Mowfort & Munt, 1997; Sharpley, 2002; Timothy, 2002; Tefler, 2002 ). Although these studies cover important issues about the connections between tourism and development, they are all normative in nature and only give directive value judgments about what the potential impacts of tourism on development ought to be.

During the planning process, any development intervention, including tourism, appears to promote three specific objectives: human development, poverty reduction, and economic growth (Mehrotra & Delamonica, 2007:35-40). Adhering to such important aspects of development not only gives salience to the welfare of individuals but also grants individuals involvement in the productive sector and society. The underlying rationale for considering the effects of any development strategy towards these specific objectives is that when one is absent, the possibility for achieving the others is minimized and can lead to unsustainable situations that preclude progress and increases the risk of economic and social stagnation. However, despite the growing interest in promoting development, limited attempts have been made to simultaneously investigate the synergies that result from expanding the tourism sector.

One synergy supported by many researchers (Balaguer & Cantavella- Jorda, 2002; Dristakis, 2004; Durbarry, 2004; Oh, 2005; Croes & Vanegas, 2008), is between tourism and economic growth. By considering tourism as part of one of many “growth mediated” strategies, these studies assume that the effects from economic growth, both directly or via tourism, will trickle down and benefit the broad population by reducing poverty and promoting human development. Unfortunately, such directive is viewed as one of “unaimed opulence” and no longer should the primary goal of development be solely economic growth. Such studies are silent on how tourism expansion specifically reduces or affects poor people, thereby remaining general in nature. Over the years, various researches (Nussbaum, 2006; Seers, 1972) have argued in favor of more sensitive measures, in human terms, for the assessment of development. For policy to be effective in program design more specific directives and guidelines should be available in order to assist policymakers. This may be the reason why there are cross country differences in tourism performance. A cursory look at Table 1 indicates that some countries are more successful than others in engaging tourism as a vehicle to reduce poverty. For example, while for all the countries in the list, the relative size of the tourism industry in their respective economies represents at least 8% of their total exports, there is a vast divergence in poverty levels. For example, the Dominican Republic has one of the lowest poverty headcount ratios and their tourism industry makes a significant contribution to their total exports (38%). At the same time, countries like Nicaragua, Honduras, and El Salvador show marked differences between the poverty headcount ratios and the performance of the tourism industry. Substantial divergence is also apparent when comparing poverty figures with tourism arrivals or average per tourist

spending. It is imperative to understand why tourism can be helpful in some cases while in others its effects are very limited in reducing poverty.



Table 1. Poverty and Tourism Indicators for Selected Developing Countries in Latin America (2007)

Country	Poverty Headcount*	Tourism Receipts Share of Exports**	International Tourist Arrivals**	Average Per Tourist Spending**
Bolivia	20%	8%	556,000	\$466
Dominican Republic	5%	38%	4,296,110	\$950
Ecuador	5%	12%	937,000	\$665
El Salvador	11%	23%	1,720,000	\$492
Honduras	18%	11%	1,337,000	\$416
Nicaragua	16%	17%	978,000	\$261
Paraguay	3%	4%	3,005,000	\$34
Peru	8%	8%	1,829,300	\$1,059
Venezuela	4%	13%	913,000	\$895

\*World Bank (WB) <http://web.worldbank.org>

\*\*World Travel and Tourism Council (WTTC) <http://www.wttc.org>

Academics agree that economic growth is an important means for development (Dreze and Sen, 1991; Easterly, 2002). Dollar and Kraay (2002) found that a 1 % increase in the average income of society translates one for one into a 1 % increase of the poorest 20% of the population, indicating a clear synergy between growth and poverty reduction. As for the synergy between economic growth and human development, the interest of academics, policymakers and politicians has shifted from a dogma of maximizing national economic outputs to cognizant aspects of societal wellbeing (Grusky and Kanbur, 2006). Such probe reflects on the capabilities approach of Sen (1999), and the Human Development Index (United Nations, 1991), which also considers economic and non-economic factors for the well-being of individuals. However, the extent to which tourism is a major agent for the expansion of capabilities is a grey area and

“there seems to be no systematic report providing information as to what degree of social benefits result from tourism development” (Hashimoto, 2002:212).

The relevance for such an approach for developing countries is that the combination of restricted financial resources and political instability can exasperate human development and worsen economic growth. As a matter of fact, this combination could create a vicious cycle of development where one undermines the other. In addition to being viewed as an end in itself, human development is crucial in advancing economic growth and vice versa. This two-way relationship, as noted by Ranis, Stewart & Ramirez (2000), can generate virtuous cycles of development, so that an economy can be in a mutually reinforcing upward spiral with high levels of human development leading to high economic growth and vice versa. Therefore, the optimum goal of development should be to jointly promote both so that any form of economic growth will not be sustained unless it is accompanied by improvements in a person’s capabilities to make a contribution to progress of economic prosperity.

Regarding poverty around the world, limited studies have been made thus far to explore the nexus between tourism and poverty reduction (Croes & Vanegas, 2008). The discussion about the reduction of poverty via “growth mediated” strategies has received much support, especially from the mainstream economic literature (Easterly, 2002) and is sustained by empirical evidence (Dollar & Kraay, 2002; Firebaugh & Beck, 1994; Kakwani, 2000). As recently argued by various researchers (Marcoullier, Kim & Deller, 2004; Croes & Vanegas, 2008), there is a need for tourism studies to expand the “income poverty paradigm” and consider distribution sensitive measures such as the “income gap” and “Gini Coefficient” for the empirical investigation of tourism and poverty. According to some (Bishop, Formby & Zheng

(1997), these measures complement the “space” of incomes by providing insight about aspects of inequality and social exclusion.

However, despite the many frameworks provided to understand tourism, the potential of tourism as an agent of development remains in the margins of mainstream development studies. This study shows that the current discussion, in order to assist policy making, should consider exploring the empirical links between tourism and economic development to understand the conditions that trigger tourism as a vehicle for development. This means embracing the complexity of the industry and its influence on everyday lives (Milne & Ateljevic, 2001).

### **Purpose of the Study**

The main objective of this dissertation is to examine the relationship between tourism expansion and development. Despite the many definitions, this study conceptualizes development as the ability to promote economic growth, reduce poverty, and enhance the capabilities of individuals (Mehrotra & Delamonica, 2007:38). Although the expansion of the tourism sector might take place in a variety of forms (e.g., ecotourists, business travelers, or leisure travelers), this study defines tourism expansion as an increase in international tourism receipts. Economic growth is captured by any changes in total economic output, represented by the Gross Domestic Product. The impacts of tourism on poverty and capabilities are conceptualized by the Sen Poverty Index and the Human Development Index respectively (Sen, 1976; United Nations, 1991).

There are several important implications and motivations for conducting this dissertation. First, this study contributes to the literature on tourism led growth hypothesis by testing whether

or not unidirectional or bidirectional causality exists among tourism and economic growth. Second, by exploring the causal effects of tourism expansion and economic growth on poverty, this study deviates from the “trickle down” phenomenon to investigate if the effects from growth are either immiserizing (Chen & Devereux, 1999; Hazari & Nowak, 2003; Hazari et al., 2003; Nowak et al., 2003) or pro-poor (Roe & Khanya, 2001; Torres & Momsen, 2004). And, third, evidence from the causal effects of tourism and economic growth on human development will provide a modest contribution regarding the connections between aggregate affluence and social outcomes (Annand & Ravallion, 1993).

### **Analytical Framework**

A review of the literature linking tourism expansion, economic growth, human development, and poverty shows an astonishing array of contradictions. For every claimed relationship, for example, tourism and poverty reduction, there is a claim that either contradicts the magnitude of the effect or the casual connection. Therefore, the consideration for the phenomena under investigation was preconditioned to a review of a body of knowledge that is well grounded in theory. The first step for conceptualizing the proposed analytical framework (Figure 1) was to converge on a set of three specific objectives for assessing the effects of tourism expansion on development.

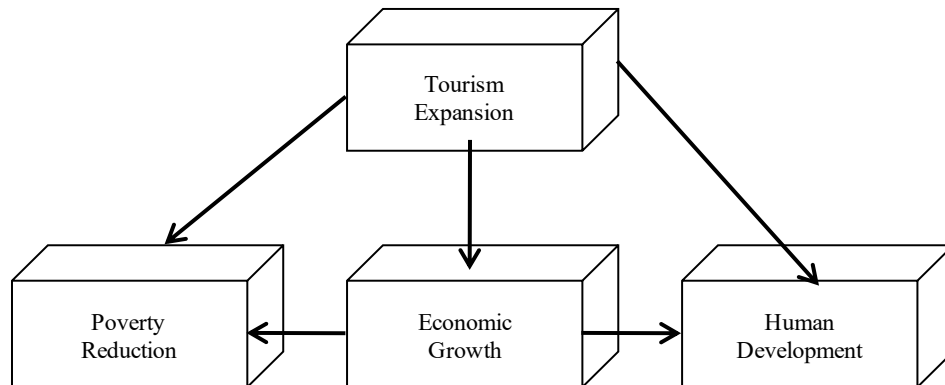


Figure 1. A heuristic scheme of the development via Tourism

Source: Author's design as adapted from Mehrotra and Delamonica (2007)

The first objective, economic growth, has a strong foundation with two interrelated theories, neoclassical growth theory and endogenous growth theory. The former adheres to promoting free markets, exports, trade liberalization, and foreign investment in an attempt to spur efficiency and development (Nafziger, 1997). The latter supports an active role of the state for promoting economic development through direct and indirect investment in human capital (Todaro & Smith, 2006:93). Within the context of growth, tourism is viewed as a valuable export and its effects on development, as supported by the Tourism Led Growth hypothesis (e.g., Balaguer & Cantavella-Jorda, 2002; Gunduz & Hatemi, 2005), occurs when tourism stimulates the economy in the form of spillovers and externalities.

The second objective, human capability or human development, embraces a non-welfarist approach that is based on the work of Sen (1999) and Nussbaum (2006). For them, the concept of “capabilities” should be the ultimate goal of development and reflect a person’s freedom to lead the live they have reason to value. They consider the ability to live, read, write, or be well

nourished as ends in themselves regardless if the economic return on such investment is zero. In addition, the concept of wellbeing should be equated with being well and the “value of the living standards lies in the living and not in the possessing of commodities” (Sen, 1987:25). A unique characteristic of the non-welfarist approach is that well-being is established by “objective circumstances within which people live, rather than from their subjective utility, satisfaction, or happiness” (Ringen, 1995). At the same time, capabilities differ from other non-welfarist approaches such as “primary basic needs” (Rawls, 1972) in that it pays more attention to structural constraints on the individual. However, despite the appeal of the capabilities approach, other propositions such as income shortfall, consumption thresholds, inequalities, and the incidence of poverty cannot be ignored, as they provide a sense of achievement and serve as an instrument for expanding capabilities (Annand & Ravallion, 1993).

As for the final objective, reducing poverty, this study embraces the holistic approach presented by Sen (2002). This approach is cemented in collective choice theory and considers the various predicaments and miseries that make up a society. Under such framework, poverty is no longer defined as the lack of command over commodities and is only measured by the individuals’ income or consumption capabilities. But instead, judgments about how well a society is doing are based on cogent aggregative judgments about social welfare. For Sen, the rationale for such judgments evolves by giving consideration to the income distribution of the poor and the concept of inequality. According to Foster and Sen (1997:171), the advantage of Sen’s measurement for poverty is that it satisfies specific axioms that are deemed necessary for an acceptable measure of poverty (e.g. monotonicity, weak transfer, symmetry, replication invariance, scale invariance, focus axiom). In addition, the ordinal properties of such measures

are considered strong, informative, and robust for policy evaluations and can avoid inter alia the debate on theoretical models for assessing poverty (Duclos & Araar, 2006).

### **Research Questions**

To guide and frame the design of this dissertation five main questions are postulated.

1) First, does a long run relationship exist between tourism expansion and economic growth? If it does, what is the magnitude of the effect of tourism expansion on economic growth? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

2) Second, does a long run relationship exist between economic expansion and poverty? If it does, to what degree does a change in economic growth act upon poverty? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

3) Third, does a long run relationship exist between economic growth and human development? If it does, to what degree does a change in economic growth act upon human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

4) Fourth, does a long run relationship exist between tourism expansion and poverty? If it does, to what degree does a change in tourism expansion act upon poverty? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

5) Fifth, does a long run relationship exist between tourism expansion and human development? If it does, to what degree does a change in tourism expansion act upon human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

### **Study Methodology**

This dissertation will examine the above mentioned questions by drawing on various economic theories and by making a cointegration analysis. The questions are tested using Ecuador as a case study and all the before mentioned relationships are estimated by using annual time series for all variables from 1988 to 2005 (see Table 2). A cointegration analysis requires that the properties of the time series under review are carefully and properly examined. For this purpose several steps need to be undertaken in to determine the form in which the data will be used for any estimation procedure. Whenever time series data are used in econometric models, any trend or seasonal component or any “memory” must be removed in order to avoid spurious results. Most variables considered in tourism analysis seem non-stationary in the technical sense, i.e., their mean and variances alter over time. Traditional statistical tests proved less effective in dealing with these variables, and consequently with dynamic models or intertemporal effects (Song & Witt, 2000). Any series that contains a trend is likely to be non-stationary and will contain a unit root. Therefore, the first procedure is to test for unit root. Numerous tests have been used in the economic literature to test for unit roots. However, the unit roots tests that are utilized in this dissertation are the ADF Test (Dickey & Fuller 1979, 1981) and the PP Test (Phillips & Perron, 1988). The application of these diagnostic tests is a prerequisite for testing



for cointegration. First differencing or second differencing will solve the problem of non stationarity.

Table 2. Study Variables

<b>Variables</b>	<b>Measurement</b>	<b>Source</b>
Economic Growth	Gross Domestic Product	Central Bank of Ecuador
Tourism Expansion	International Tourism Arrivals	WTTC
Human Development	HD Index	United Nations
Poverty	S- Poverty Index	SIISE Ecuador

The number of differencing to get back to stationarity determines the order of integration of the variable. If the variables are stationary, then any arbitrary combination among them will also be stationary ('Granger Representation Theorem'). This means that they move closely together over time and do not drift apart. In other words, there is some mechanism that pulls these variables back together. If this is the case, then the variables are said to be cointegrated. Engle and Granger posited that there is always an error correction representation that can depict the process of this relationship linking the variables.

The cointegration procedure implemented in this study will determine if any pair of variables forms a long term equilibrium combination. The Engle and Granger (1987) two stage approach is used to test for cointegration. If the results from the cointegration test indicate the existence of at least one cointegrating relationship, then long term equilibrium exists among variables and the effects of hypothesized relationships can be tested.

The next step after establishing cointegration is to use an error correction mechanism, as suggested by Mukherjee, White and Wuyts (1998), to incorporate short-run disequilibrium

behavior along with long-run tendencies in econometric modeling. The idea behind the error correction is simply that a proportion of the disequilibrium from one period is corrected in the following period, meaning that the disequilibrium from the previous period is now considered as an explanatory variable. This method is exceptionally powerful and allows the researcher to estimate the short and long run effect of explanatory time series variables.

As for the question of causality, the Granger (1969) test is applied only if cointegration between any set of two variables exists, which indicates that causality must then run in at least one direction. According to the Granger representation theorem, in a bivariate context, causality boils down to the significance of the lagged residuals in the regression model. In this dissertation, we make an a priori assumption that tourism expansion has an effect on economic growth, human development, and poverty. Therefore, the importance for establishing the causal relationship in a Granger sense is to validate such claims.

### **Case Study**

While the incidence of poverty fluctuates around the world, the South America region draws attention because of the incessant political milieus and enduring poverty. According to Wodon et al (2001), 36 % of the population in South America lives in extreme poverty and massive inequalities in earning and skills still persist. Among the South American nations, Ecuador provide a good case study as 70% of the population lives in poverty, meaning they cannot meet their basic nutritional requirements even if their entire incomes were spent on food. In addition, massive income disparities are noticeable; the highest 20% of the income earners receive 80% of the income share of Gross Domestic Product (USAID, 2002).

Ecuador's somewhat unstable political milieu seems to counter act against economic growth and development. It manifests most of the symptoms of developing countries, namely political instability, weak institutions, lack in transparency, nepotism, and weak economic performance (Budd, 2004; Croes, Rivera, Ramirez & Pizam, 2009; Joseph, 1987; Vos & De Jong, 2000; Transparency International, 2008). The economic activities in Ecuador are characterized by a high primary commodity export concentration ratio for the leading primary products (the exports are crude petroleum, bananas, and shellfish). In the past, the country's reliance on these exports has been devastating for the economy, demonstrated by the vulnerability to events such as the 1980 oil crises and more recently El Nino. Since then, the country has shifted from a state-oriented development model towards a neoliberal approach. However, the results from the shift have not yet yielded desirable results, and as De la Torre (past president of the Central Bank) indicates "the lack of credibility in the judicial system, continuity from one administration to another, and restrictive labor laws are inhibiting investment" (cited in Hey & Klak, 1999).

Nevertheless, a flourishing sector that has evolved as new option for promoting development and economic growth in Ecuador is tourism. In 2005, Romano, Falconi and Aguinaga unveiled the results of the Tourism Satellite Accounts program for Ecuador. Their findings, a welcome surprise for many, indicated that tourism (domestic and international) constitutes 4.5% of the gross domestic product. In addition, an increase of 13% in international arrivals in 2008 demonstrates that tourism expansion does not coincide with the economic contractions and recession in Ecuador (WTO, 2009).

### **Significance of the Study**

This dissertation will provide insight into how tourism expansion affects development in the context of Ecuador. It is anticipated that this work will contribute to the existing body of tourism development literature in several aspects. First, it develops an analytical framework which provides an understanding of how tourism expansion, economic growth, human development, and poverty are related, a theme that is often circumvented in the tourism literature.

Second, this study emphasizes empiricism, a missing element in the majority of the academic research which only considers aspects of development based on priori reasoning and intuition (e.g. Mowfort & Mount, 1998; Timothy, 2002). As of today, the empirical relationship between tourism and the various dimensions of development (growth, poverty, and human development) has yet to be tested simultaneously. Therefore, the choice of constructs together with an error correction model and the Granger causality test, contributes to the debate on whether: 1) tourism expansion is in fact a vehicle for development; 2) tourism expansion is a byproduct of development; 3) tourism expansion and development strengthen each other.

Third, as numerous researchers favor time-series country-specific in-depth studies (Ang, 2009:25), the use of single country such as Ecuador proves adequate for policy guidance. Currently Ecuador is emphatically working toward the realization of the Millennium Development Goals and appreciation for the contributions from tourism can assist it in fostering an environment that is conducive for the promotion, expansion, and sustainability of tourism services.

Finally, since the empirical research about the effects of tourism and poverty is limited (Croes & Vanegas, 2008), the proposed model will be valuable for future investigations and serve as a guide for other countries that wish to incorporate tourism in their portfolio of development strategies to reduce poverty.

### **Limitations of the Study**

The current study is not without limitations. First, although individual case studies provide insights that can be used as reference for policy formulation, the result cannot be generalized to other countries or the South American region. Second, as noted by various researchers (Deaton, 2001, 2003, 2005; Deininger & Squire, 1996), any empirical investigation about growth and poverty is not without problems for obvious reasons. For example, the availability and quality of the data has been questioned because of notorious measurement errors, lack of quality controls, and deficiency in reliability and coverage. However, as pointed out by Ravallion and Chen (1997), any bias in the estimation methods of the data for testing the effects of economic growth on poverty and human development are likely to cancel each other, thus resulting in an unbiased estimate. Third, owing to data constraints, the estimation period from 1988 to 2005 might be considered somewhat brief. This problem is particularly common for most developing countries. Lastly, caution is made with regards to the effect of tourism on human development or poverty, because any comparison of intensity can solely be based on ordinal intensity rather than cardinal comparability. However, the weaknesses of ordinal intensity, in terms of interpretation, are compensated by completeness and transitivity.

## **Organization of the Study**

In addition to this chapter, this dissertation contains four additional chapters, each distinct in its function and content. Chapter two starts with a review of pertinent literature about tourism and economic development. The chapter also explores the dimensions and consequences of poverty and human development. The third chapter is divided in two sections. First, the theoretical model that is embraced as an analytical framework is described. Second, detailed aspects of the methodology such as the units of analysis and hypothesis, data sources, diagnostic tests, and the econometric model are introduced. Chapter four presents the results of unit root tests, cointegration, error correction regressions, and Granger causality tests for all the hypothesized relationship. In the last section, Chapter five discusses the implications and contributions of the study to the tourism literature. The implications of the study will span the theoretical, methodological, practical and policy continuum as it relates to tourism and development in Ecuador. This chapter also contains a section that discusses the limitations of the study. Finally, it also provides conclusions and suggestions for future research.

## **CHAPTER II**

### **Introduction**

Development is related to improving the quality of life by raising people's income levels, enhancing their self-esteem and increasing their freedoms (Todaro & Smith, 2006). According to this definition, economic development is expected to create an environment conducive to growth with the support of political, social and economic systems. Conceiving development as a branch of economics, scholars tried to explain why certain countries are at a disadvantage (i.e., poorer than others) in an attempt to prescribe solutions that encourage and support economic growth. However after more than fifty years searching for development, as Krugman (1997) argued, development theory "failed to make it" (p. 39). The disenchantment with development, despite the contributions and rich insights from many scholars (such as Sen), was mainly attributed to the inability to express ideas in a manner that was suitable for modeling or, more precisely, was explicit about market structures and the competitiveness of developing economies.

The motivation for this review lies at the heart of such a critique. This study not only attempts to empirically examine the relationship between tourism and development, but, more importantly, it draws on the principles of development economics to cut through the complexities faced by the developing world and put tourism in perspective. Indeed, as Amartya Sen (1983) pointed out, development economics has made good strides in identifying factors that lead to economic growth; however traditional analysis on the causation of growth, poverty, and capabilities still provides useful information.

As a social phenomenon and economic force, tourism has not yet been considered among the major strategic themes that drive development policy and modeling. Therefore, before putting in perspective the reasons why tourism has not been taken seriously and hypothesizing about its role in development, we must first consider the works of those scholars who over the years have provided theoretical concepts and policies that characterize the development process.

The sections that follow will first investigate the different strands in development theory and how tourism has been employed as a development strategy.

### **Conceptualization of Development**

The divide between rich and poor nations, witnessed mostly since the 1950s, has generated many questions about the meaning of development. For example, to mention a few, why is it that some countries experience dramatic changes in incomes and living standards, while others drifted further behind? Why have some countries with a talented human resource base remained impoverished? What are the factors that account for the success of some countries that have been able to expand the possibilities of their constituents to bring to fruition their full potential? Over the years, the search for answers has guided the study of development, and as result various interpretations and ambiguities remain in the literature.

The concept of development has evolved over the centuries and has been assigned different meanings contingent on the times. The concept has been used to refer to (i) economic growth; (ii) changes in economic structure of production (e.g., from agriculture to industry); (iii) spatial distribution of people (urbanization); and (iv) improvements in social indicators (education and health). An important starting point for discussing the concept of economic



development is to define the views and assumptions that form them. The economic development imperative dates back to the influential work of Adam Smith, who noted that the incidence of poverty and the miseries of some of the populace cannot represent a flourishing society (Smith, 2008). From this interpretation, economic development has been used as a synonym for “opulence and improvement,” and conceptualized by common expressions such as “material progress from Adam Smith until World War II by mainstream economists.”

Other interpretations of development embrace transitive and intransitive connotations (Arndt, 1981). Arndt (1981) makes this important distinction by investigating the roots of the concept of development. Based on his investigation, he claims that the term has two meanings: one which is related to process, associated with the German tradition of Hegel-Marx-Schumpeter, and the other related to the British tradition of Milner and other British scholars. The German tradition is defined as the intransitive dimension of development, which means that development is an economic process connected to the “progress” of a society and the accumulation of wealth. From this perspective, development is viewed as a historical process that occurred without being knowingly willed by anyone. The second dimension of the term development is transitive in nature because it gets its meaning from its association with material resources. This tradition did not refer to progress or have any connotation tied to a rise in living standards. As Arndt put it, “It was development of resources, not people.”

Another example of the transitive meaning of development was brought forward in a survey by Copland (1931). In his discussion, he posited that rapid development and growth within the manufacturing sector was the result of the exploitation and expansion of the primary sector (e.g., transforming natural resources into primary products). In subsequent studies,

however, scholars were no longer conscious of the contrast between the transitive and intransitive meaning. As a result, development and economic growth were regarded virtually as synonyms and viewed only in terms of economic factors. Consequently, the main objective of subsequent development studies and policies embarked on a new course to narrow the income gap between rich and poor countries via economic growth.

Other scholars, such as Myrdal (1990), have reflected on the use of economic growth for development. In his works, the process is described in terms of virtuous or vicious circles of development that result in upward or downward movements of the entire social system by adopting the principle of circular and cumulative causations. Such interpretation considered many other variables such as education, health facilities, collective and individual consumption, and political stratification. As a result, any change in one of these variables was expected to have cumulative causal effects on the other. For example, a healthy and well fed worker was deemed more productive; at the same time, higher productivity increased the opportunity to improve health and nutrition.

Other scholars (Adelman, 1961; Aghion & Bolton, 1997) have been to the fore in demonstrating the importance of economic growth and a “goods-centered” view of development rather than a “people-centered” approach. Development according to the former view is construed as the maximum possession of resources. Material wealth is the main objective of economic life. This strand of thought has been challenged more recently by a “people-centered” approach which basically examines how the possession of resources affects people. For example, some scholars (Anand & Sen, 1994; Streeten, 1994) have focused on the concept of human development as an important aspect of development for developing countries.

## **Development as the Efficient Allocation of Resources**

Over the years, the main premise of the concept of development has originated from the command over resources of individuals. The focus on individuals or persons is an important departure from previous social arrangements such as the feudal system, where the concept of private property was not envisaged. The main tenet of the feudal system was that social structure was embedded in communal property rather than private property. Therefore, the person was not identified and recognized as the most important unit of the social fabric. Individual freedom and responsibility were not valued under this particular era (Olson, 1993).

With the advent of the industrial revolution, the focus on collective freedom and responsibility shifted to the individual, thus making it possible for the individual to gain property on his or her own. This opportunity and responsibility achieved by the individual became the hallmark of the modern era. Adam Smith considered that the freedom of the individual to create and follow his or her own interest is the foundation of a free society. The ensuing consequence is the creation of a new social arrangement based on private property and a free market. The belief was that command of resources was crucial to the generation of more wealth and prosperity founded on the self-interest of the individual (Smith & Haakonssen, 2002). The “invisible hand” would take care that these individual self-interests would produce the common good and, therefore, enhance growth. Smith asserts that if each individual is free to pursue his best interest, the result will be the maximum possible benefit to society as a whole (Scully, 1998). In other words, the pursuit of one’s self-interest will automatically serve the interest of society. The wonder of pursuing what is in your best interest, of course, is that incentives magically align themselves in a way that makes everyone better off. This, according to Smith, is what determines

the wealth of nations. Since then, the quest for growth has demanded the highest interest of nations. Of course, this magic does not work out all the time. Issues such as trust and poor information can pervert to a certain degree the benefits accruing to society.

### **Development as Economic Growth**

After World War II, the focus of growth on rich countries shifted to how poor countries can become rich. The impact of the Marshall Plan to salvage the economies in Western Europe had a profound impact on the economic thinking of the time. The lessons learned from the Marshall Plan could be compressed in two main components: the utility of massive foreign aid and the opportunity to replicate the European experience. The roots of the linear stages theory can be traced to these two simple thoughts.

Rostow's (1959) five-stage model and Harrod Domar's growth model (Easterly, 1997) were the most influential works in the search for economic growth in the poor countries. Economic development, within the context of economic theory, is concerned with rapid growth, industrialization and convergence. The transition from undeveloped to a developed country was often viewed as a historical process through which less developed countries must progress (Rostow, 1959). Such gradual transformation is represented by stages which reflect the historical transformation and experiences in more advanced economies. Rostow provided the patterns of growth following the European experience by depicting five stages: traditional societies, the pre-conditions for takeoff, take-off, maturity, and high consumption. Ultimately, according to such view, all countries should achieve the highest stage (Rostow, 1959). This is, in essence, the convergence assumption.

The Domar model, on the other hand, estimated the amount of investment needed to propel the take-off of the poor countries into the development mode. Since poor countries are so poor, it was thought that the poor countries themselves would not be able to come up with enough investment. Foreign aid would fill the ‘financial gap’ that would enable the country to grow on a sustained basis. The main contribution of this model is that growth was proportional to investment. Lewis (1954) added a new idea to propel growth. While investment is necessary, it was not enough to trigger economic growth. He suggested that labor is the most important factor in growth, while machinery was a constraint. In his “surplus labor” model, labor is considered as unlimited in the production cycle, and by building factories, the surplus labor from the agricultural sector could be soaked up. This development model assumed that capital was the scarce factor of production, while the labor that engaged in agricultural activities was free to move and allegedly maintained low marginal productivity. It was expected that the allocation of surplus labor from agricultural workers to a modern industrial sector would make them more productive, ensure an equal wage, and contribute to development (Ranis & Fei, 1961).

Other scholars debated on how to combine the factors of production or inputs (land, labor, and capital) in the most efficient way. For Solow (1956), for example, the key for sustained growth was through technology, as any additional increase in capital without it would simply limit growth. He contended capital fundamentalism by arguing that the expansion of the factor of production (machines and labor) by means of investment would generate unsustainable growth. Simply adding more capital inputs, due to diminishing returns, would entail a reduction in output per worker or machine. Therefore, it is technology that propels higher levels of productivity, and, hence, economic growth. This view challenges Domar (1957), Lewis (1954)

and others who asserted that economic growth was proportional to investment spending, meaning that the growth rate of the GDP depends on the level of savings and the capital output ratio.

Conversely, for developing countries, the idea that capital accumulation by means of structural transformations in which surplus labor from a rural agricultural sector can be transferred to a more modern industrialized sector in an attempt to generate more profits and investment for economic growth did not hold true. Their inability to grow faster by adding labor-augmenting technologies was limited due to the lack of trained resources, scientific knowledge, institutions, and incomes—which were barely above the subsistence levels (Easterly, 2002). In addition, the strand of thought stemming from the models discussed previously implies that underdevelopment is an outcome of internal weaknesses in the poor countries themselves, and by following certain rules they will be able to develop into rich countries.

It is important to note that these strategies served their purpose in the Western World, exemplified by modern economic development and progress. Unfortunately, in the developing world the implementation of such strategies was at the mercy of market failures and imperfections. As a result, conventional wisdom of a universal development process was deceitful (Easterly, 2002). In Latin America, for example, where ruling elites and feudal values determine the social structures, exogenous stimuli such as foreign investment, aid, debt relief, technology, and education did not inspire a culture resembling that of the Western World. As a result, some scholars convened in an attempt to explain the unequal and disproportionate effect of economic growth in developing countries.

## **Development as Unequal Growth**

In stark contrast to the premise of development as economic growth, in which all countries will converge to a higher rate of development, some scholars posit that the variance in economic performance and development is the direct outcome of a highly unfair and uneven system. Underdevelopment is not related to social structures or the individuals' ability or desire to embark on paths to create wealth; instead, underdevelopment is intensified by external economic synergies which prevent a self-determined growth path. This alludes to a state of affairs in which the economy of some countries is affected by developments and expansions of another stronger or advanced economy to which the former is subjected (Dos Santos, 1970). Such relationship was deemed by some as a relationship between the core and the periphery, in which the former exerts control over capital and profits, while the latter is confined simply to the provision of labor. Todaro and Smith (2009) label this strand of thought as the neocolonial dependence model.

The core–periphery relationship perpetuated underdevelopment for two reasons (Lall, 1975). First, as a mechanism for economic growth, developing countries relied on multinational corporations for financing and operating new industries. This relationship affected the periphery, as their control of resources was restricted and the large manufacturing sector, which typically reflected a monopolistic control that prevented local governments from providing an environment conducive to growth. Multinational corporations distorted development not only by preempting indigenous development and furnishing inappropriate and outdated technology, but by altering the local cultures.

Second, social arrangements in the host country deteriorated as disproportionate benefits accrued to aristocracies and the new elite. Power imbalances, resulting from the configuration of social interest, fostered economic dualism and enclaves for the privileged, where the rich and the poor coexisted in an uneasy relationship. This coexistence is chronic and not transitory and could even worsen over time. Moreover, the rural poor were exiled and deprived of their incomes, as sideline activities were undermined by increases in imports and newly manufactured products. In general, the labor force was typically placed in a relatively weak position with their employers as working-class unity and the emergence of labor organizations was hindered by rising labor aristocracies that depressed the working class.

According to Leys (2006) the solution for ending a path of unequal growth required a strong state and acting governing agencies that could not be weakened by foreign economic penetrations and pressures. Prebisch (1986), for example, argued that the market distortions and disequilibria from an unequal development relationship could only be avoided by corrective state intervention that would direct the formulation of economic policies while serving as a directive productive agent. In such cases, the state response to entering a path of self-sustained growth consisted of two strategies: import substitution or a political revolution. Import substitution entailed increasing the domestic production of imported manufactured goods. These strategies were aimed at balancing the terms of trade between the developed and the underdeveloped countries, as the sole exports of primary products such as foods and agricultural products placed developing nations in a disadvantageous position.

Other scholars (Dos Santos, 1970; Frank, 1977), however, foresaw that the only alternative for development in some countries was to detach themselves from the world system



network through a socialist revolution. They argued that underdevelopment was viewed as a direct consequence of capitalism, and it could only be overturned by breaking away from the world system giving control to the nation state (Frank, 1977). This paved the way for societal uprisings and transforming political powers into communist and socialist societies.

Regardless of the differences between these two strategies, criticism remained, as some argued that such directives were often misleading and did not provide general implication for development (Palma, 1978). For example, Krueger (1997) makes mention that import substitution has outlived its usefulness, as any possibility for gaining a comparative advantage was distorted by lack of planning and strategies based on feasibility rather than economic expediency. Meanwhile, as argued by Lall (1975), empirical analysis failed to prove that the core-periphery relationship was the cause for underdevelopment, as a causal relationship was not existent.

Despite certain signs of growth in some developing countries, economic inequalities have continued to worsen. According to Kuznets (1955), the reliance on investment and physical capital as an engine for economic growth only benefited certain groups, as it encouraged the allocation of resources towards those who owned the factors of production and capital. Such process was viewed by many as "a natural and unavoidable (growth-equity) conflict" (Fei & Ranis, 1999, p. 324). This demonstrates that endogenous transformations experienced by the Western World, both cultural and institutional, cannot be applied to the less modern, developing countries. Therefore, the major challenges to overcome underdevelopment rest in the ability to change traditional norms, structures, and the assimilation of modern values (Valenzuela & Valenzuela, 1978).

In general, the results of these development strategies, especially in Latin America, have been disappointing. Consequently, the decade of the eighties is referred to by many as the “lost decade,” as the economies in Latin America receded significantly to lower levels of performance, thereby impoverishing millions of people. These disappointing results in the developing world led to the resurgence of the market fundamentalism paradigm, which is basically the neoclassical model all over again. This neoclassical resurgence has manifested itself through the neoliberal approach of the sanctity of the free markets, the public choice and market-friendly approaches. Jointly these paradigms called for less government, less regulation and more private-sector control. Getting the price right through the market is the formula for development, while government should be limited to a minimum, because it cannot do anything right. Lately these assumptions have been relaxed by recognizing the existence of market failures and the need for corrections through government intervention (Todaro & Smith, 2009).

### **Development as Poverty Reduction**

For many underdeveloped countries, emulating growth strategies provided hope in the fight against all the miseries that surrounded their lives and were perceived as a “panacea for the countless social and economic ills” (Abramovitz, Scitovsky, & Inkeles, 1973, p. 11). Social changes and poverty reduction were deeply rooted within a development perspective that emphasizes a gradual adaptation and the continual change of human thought and ability (Kuznetz, 1955). These images of progress, however, did not remain unchallenged for long, as aggregate measures of economic growth were unable to provide a fitting basis to understand the variability patterns and lack of convergence in poor nations.

To illustrate the disenchantment with convergence is important to understand the ideologies behind what economic growth should have provided to underdeveloped nations. Under the rubric of industrialization, economic growth provided operational clarity, but scholars marshaled through economic policies without considering how the effects will unbundle, especially as the focus of development was purely on total output (Abramovitz et al., 1973; Seers, 1972).

During the planning process, the economic benefits from economic growth were expected to work downward or “trickle down” towards all members of society, with the optimism that developing countries will eventually converge. However, convergence was hampered by the inability of developing countries to cope with factors such as external control from foreign corporation and management, low participation from local communities, high requirements of capital inputs, infrastructure, and technological transfers (Tefler, 1996).

The economic structure and societal configuration of underdeveloped countries required moving away from “conventional economics” and focusing on the reduction of poverty as the central issue (Hirschman, 1982). Development theories and policy prescriptions relied on facts which were often based on perverted truths, premises, and misappropriate policy inferences (Krueger, 1997). For example, there was the premise that developing economies relied on a production system that was mainly focused on primary commodities. Additionally, the adoption of trade policies would diminish the countries’ comparative advantage and the ability to industrialize. Pessimism existed with regards to the export of primary commodities, as income and price elasticities of demand were low, and relying on such exports would deteriorate the terms of trade. It was further assumed that the factors of production, especially the poor laborers,

due to their low productivity, were at the disposal of new emerging sectors, and the capital support for production and industrialization could only be provided by inflows from abroad. Finally, it was believed that societies in the developing world were traditional and that there were structural problems in the economy.

The preceding discussion demonstrates a one-sided view of development in which the fruits of economic growth would transform the lives of those whose living standards were altogether different from more prosperous societies. There is no doubt that a universal agreement exists that poverty reduction is one of the major goals of development; however, the relationship between poverty and development is still complex. This becomes more apparent when attempting to forge a definition and measurement for development, which often carries connotations such as of a state of deprivation, insufficiency, necessity, inequality, difficulty, and the list could go on and on.

From an analytical perspective, the empirical studies about poverty and economic development shared a common view about the meaning of development, represented by a utilitarian framework that focused solely on incomes and foresaw the accumulation of wealth (or the lack of poverty), by means of the effective use of resources and private incomes. This view coincides with the idea that an individual's ability to command certain commodities or income is the appropriate "space" for determining levels of societal well-being.

Early scholars contended such an approach and deemed it as a brutal and sordid process. UI Haq (1976) and Seers (1969) were some of the major critiques of economic growth as the exclusive process for development and using an aggregate measure of per capita income to signify improvement in the quality of life. The essence of their critique is that more emphasis

should have been given to other factors, such as decreasing poverty, unemployment, inequality and malnutrition.

According to Gruski and Kanbur (2006) the contributions made by Atkinson (1987) and Sen (1976) to the measurement of poverty and inequalities represent a “period of conceptual ferment” about poverty. Their works “provided a way into conceptualizing and operationalizing value judgments on distributional issues” by witnessing the birth of the debate against utilitarianism as a unit of analysis for policy development (Gruski & Kanbur, 2006, p. 5). For example, Atkinson’s take on inequality depicted more accurate measures of social welfare, while Sen’s contributions are free from the arbitrariness inherent to poverty measures currently in wide use as they satisfy reasonable axioms (Takayama, 1979).

During this time, more emphasis was also placed on gaining access to health and education, and less emphasis was placed on the lack of income. Some of the most influential works for poverty reduction also took place during this time, and some of the most prominent investigations include the provision of basic needs (Hickd & Streeten, 1979; Streeten, 1979).

Streeten’s (1979, 1994) take on development places people back at the center stage, after decades where mazes of technical concepts had momentarily hidden this primary and fundamental vision. Human beings, for Streeten, are both ends and mean of production themselves. Streeten mentions six reasons as to why human development must be promoted in order to eradicate poverty in poor countries. First and foremost, human development in itself is an end. Second is that human development entails higher productivity, and a labor force which is well-nourished, educated, trained and skilled, and alert is the most important productive asset. Second, it is a means to higher productivity. A well-nourished, healthy, educated, skilled, alert

labor force is the most important productive asset. Third, human development reduces the rate of human reproduction by lowering family members to the desired and ideal size. Fourth, human development is good for the physical environment, as the poor are both the cause and victims of environmental problems. Streeten believes that deforestation, desertification, and erosion are reduced with poverty reduction. Population growth and population density both have impacts on the environment. Fifth, reduced poverty contributes to a healthy civil society, democracy and greater social stability. Lastly, reduced poverty has a political appeal, and may reduce civil disturbances and increase political stability (Streeten, 1994).

For Son and Kawakani (2009), poverty is not a new social malady; they stress that it has been in existence for hundreds of years and is discernible in many developing countries. One of the main concerns of economists around the world has been investigating why the benefits from economic growth have not reached those in peril. Even though signs of economic growth are observable, it is notable that incomes of the poor groups increase more slowly than the average.

According to Fields (1988), poverty is dependent on two factors, mainly the average level of income and the extent of inequality in income distribution. For example, although an increase in average income reduces poverty, any increase in inequality will intensify it. Nowadays, the impression is that poverty has remained at higher levels or practically unchanged due to increases in income inequality. Nevertheless, no conclusive evidence exists indicating that inequality has actually worsened significantly in the developing world. The lack of substantial evidence makes us wonder, how does one understand the impact of economic growth on poverty?

Son and Kawakani (2009) insist that measuring the impact of economic growth on changes in average income and income inequality on poverty remains utterly important. For example, Ravallion (2005) provides two possible interpretations of inequality: absolute and relative. The concept of absolute inequality is based on the absolute differences in living standards, rather than relative differences. The concept of income poverty, according to Bourguignon (2004), has been characterized by measuring “absolute poverty,” defined in reference to a fixed poverty line representing the ability to cover basic needs that are socially and physically essential. The reduction of absolute poverty should be considered the main developmental goal, as it ensures that the basic needs of the labor force are fulfilled. Poverty lines, for example, can be multi-dimensional, incorporating both income poverty lines and a non-monetary line, for meeting monetary needs and other needs, respectively. Nevertheless, absolute poverty lines are not necessarily consistent among other countries, as needs are bound to differ across societies, and they need not remain fixed, as they are more likely to evolve over time.

With this absolute definition of poverty, relative poverty must also be noted in relation to the poverty line that is not established in terms of only defined basic needs, but as a fixed proportion of some income standard in the country’s population (Bourguignon, 2004). For example, in the European Union, a country is considered poor when its economic resources are less than 50% of the mean income in its member countries.

According to such a definition, the absolute level of income no longer matters, and only relative incomes or distributional features matter. On that note, Bourguignon (2004) wrote that:

“Fixing the poverty line relative to average income can show rising poverty even when the standards of living of the poor have in fact risen. There is an increasing

consensus among economists that relative deprivation matters, but there does not appear to be a consensus that individual welfare depends only on one's relative position, and not at all on absolute standard of living as determined by incomes. (p. 2)"

Bourguignon further elaborates on two targets as to how to approach this so-called absolute poverty. First, economists must see the elimination of absolute poverty as a meaningful goal for development, under all forms that may be used. Second, the ability to rapidly eliminate absolute poverty is dependent on a strong combination of growth and distribution policies.

In the literature, one argument is critical of the proposition that economic growth reduces poverty. According to Kuznets (1955), any increases in incomes during the early stages of development will, on the outset, worsen income distribution and then later improve as a larger segment of the population is involved in the rising national income. However, besides raising incomes, limited studies have addressed the relationship between economic growth and the welfare of the poorest members of the global economy.

In 2002, Dollar and Kraay argued that economic growth is good for the poor. After conducting a cross-country study about the relationship between economic growth and the incomes of the poorest 20%, they found that the salaries of the poorest fifth rise at the same rate as average incomes, thus benefiting the poor as much as anyone else. Argrawal (2008), on the other hand, noted that countries that grow faster tend to reduce poverty more rapidly. In the case of Kazakhstan, for example, an increase in GDP per capital is associated with large decline in poverty, thus reducing the number of people whose incomes are lower than the poverty line. Conversely, increases in inequality make the incidence of poverty more severe. To date,



however, it is still true that economic growth is one of the best approaches to poverty reduction, and growth-enhancing policies should be at the center of any effective poverty reduction strategy (Dollar & Kraay, 2002; Roemer & Gugerty, 1997).

In 1995, Ravallion noted that economic growth did not have strongly adverse impacts on the poor. Moreover, when looking at inequality, there seems to be no indication in developing countries that economic growth has been associated with any increases or decreases in inequality. At the same time, inequality figures from the 1980s show no correlation with performance in raising the standards of living. Therefore, further empirical evidence is needed to explain such changes.

### **Development as “Freedom”**

After the dreadful decade of the 1980s, the analysis of poverty became more complex. The theoretical works from Sen (1976, 1980, 1983a, 1985, 1989, 1999) reinforced the idea that income, as a poverty measure, was only valuable if it increased individuals' freedom and their ability to help themselves and influence the world (Sen, 1999, p. 18). For Sen (1999) and Nussbaum (2003), development is seen as the expansion of freedoms that people enjoy, and they emphasize that enhancing people's “capabilities” or “functionings” constitutes the pillars of development. The uniqueness of this approach is that it provides a new informational space in terms of the evaluation and effectiveness of development policies. In this regard, the expansion of capabilities is not only seen as the “primary end” of development but also as “principal means.” The difference between these two is that the former plays an intrinsic role while the latter plays an instrumental for well-being of society and development. For example, being

healthy can be conceived as an end in itself; however, it can also be seen as a means to the capability to labor in a particular sector, thus promoting development.

The capability approach operates as an ample normative framework for assessing the well-being of individuals and designing economic policies that bring change to society. According to Robeyens (2003), the usefulness of the capability approach expands to various fields of study such as economics and political philosophy. The application of the capability approach encompasses, but is not limited to, the study of well-being, poverty and inequality, thus serving as an assessment instrument for policy design and evaluations. Moreover, its usefulness served as the inciting cause for originating the Human Development Paradigm by the United Nations (Fukuda-Parr, 2003).

The core claim from the capability approach, according to Sen (1999), is that what matter the most are the opportunities people have to embark on a path that they have reason to value. The uniqueness of the capability approach is its departure from traditional economics and utilitarianism, which foresee well-being as a desirable outcome from commanding resources or mental states (desires and happiness), mostly represented by monetary metrics. By focusing on people instead of economic outcomes, adopting this approach for development prescriptions provides a wider range of options for policy makers. More specifically, Sen (1999) suggests that development policies should strive to remove any obstacles that impede people's freedoms. Sen mentions five instrumental freedoms. First, political freedom provides individuals with an opportunity to elect their governments and enjoy freedom of political expression. Second, economic facilities allow use of economic resources for the purpose of consumption, production, or exchange. Third, social opportunities are societal arrangements that make possible access to

education and health. Fourth, transparency guarantees relate to openness and the prevention of any type of corruption. Fifth, protective security allows a social safety net that protects individuals from misery.

In Figure 2, a schematic representation of the capability approach is presented. Various authors (Robyens, 2003; Sen, 1989, 1999) highlight the importance of differentiating commodities (e.g., food) and functionings. A clear distinction between the two is provided by Robyens (2003). For example, if you take two people, one who is a victim of famine and the other who is on a hunger strike, they both will lack the functioning of being well-nourished. However, the victim of famine does not have the freedom (capability) to escape hunger, but on the other hand, the one that is on a hunger strike has the capability to be hunger-free and achieve the functioning of being well-nourished.

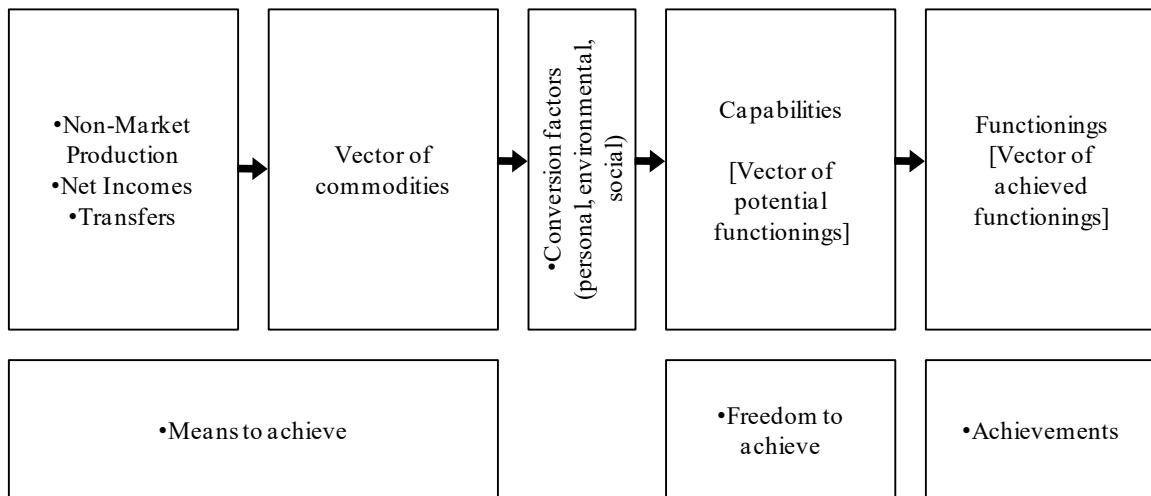


Figure 2. Schematic representation of the capability approach

The capability approach is characterized by two central theses about individuals and development. Sen (1999) calls them the “evaluative aspect” and the “agency aspect.” The former is concerned with evaluating improvements in human lives, as a development objective, by using human achievements to gauge progress. Such interpretation draws a distinction with paradigms that focus solely on economic benefits. As for the latter, agency is concerned with what human beings can do to achieve such improvements, especially through policy and political transformations. For the purpose of this dissertation, the capability approach is used to investigate the evaluative aspect rather than the agency aspect.

Sen and Dreze (1989) indicated that the enhancement of capabilities can be achieved by either support-led strategies or growth-mediated strategies. The former solely rely on government and institutional intervention, while the latter does not. Ravallion (2005) drew on previous experiences and noted that support-led strategies with public support are considered less important in the long term than is economic growth. The benefits from economic growth for enhancing capabilities are twofold. First, economic growth reduces poverty, and poor people have fewer attainments than the non-poor. Second, economic growth promotes public spending, as the resources generated are used for promoting health and education. Nevertheless, a proper balance between the two is recommended.

Despite the importance of the capability approach as a development goal, gauged by the human development index (Fukuda-Parr, 2003), empirical evidence about the role of economic growth is often undermined (Ravallion, 2005). The problem is not accepting that economic growth is beneficial, but understanding how different policies impact the rate of growth.

Spending in health and education enhances development; however, the question of whether any tradeoff exists from implementing other policies has not been pursued in much depth.

### **Tourism and Economic Growth**

With all the literature gathered for development as a synonym for economic growth, it is noticeable that tourism has not been part of the economic strategies at the initial phase of developing countries, as attention was centered on trade, industrialization and technological advancements. For example, labor forces were shifted to infant industries that focused on capital accumulation which gave way to imports and trade, instead of shifting attention to an unexplored industry, such as tourism. To date, the degree of industrialization has been fluctuating, and there have been sporadic and radical changes in trends, giving way to the boom of tourism as a form of leisure and globalization.

The fact that tourism has emerged as a new growth activity is somewhat inconsistent with economic theory. Sequeira and Campos (2007) allude to the explanations of economic growth (e.g., high intensity in research and development, and large-scale development), which do not necessarily fit the tourism industry, as most tourism enterprises in developing countries are small in scale and lack the research and development components. Tourism has been viewed as an activity that is burdened by cost disease, thereby hampering growth. From this perspective, tourism offers little scope for productivity improvements and cost trimming (Mazzanti, 2002). However, other scholars (Balaguer & Cantavella Jorda, 2002; Copeland, 1991; Lanza & Pigliaru, 2003) explain tourism as a possible engine of growth because of its impact on the terms of trade and untapped resource endowments.

As a development strategy for developing countries, tourism has been part of outward-oriented policies encouraged by financial institutions such as the World Bank and the IMF. Tourism emerged as a nontraditional export that stimulated growth and provided “comparative advantages” for developing countries (Brohman, 1996). According to Brown (1998), tourism was expected to work as a “Cinderella Wand” and facilitate unstable economies with foreign exchange and reduce aid dependency. Similarly, Sugiyarto et al. (2003, p. 698) argue that tourism also reduces the government’s burdens as it helps maintain the necessary income levels to finance its expenditures.

The support of tourism as development activity is rooted in what economic theory calls the export-led growth hypothesis. As a theoretical and development framework, exports are considered to promote economic growth and contribute to local economies by benefiting from economies of scale, reducing the foreign exchange constraints, spawning positive externalities for other sectors, and encouraging competitiveness (Durberry, 2004). According to Balassa (1978), the expansion of the trade sector has also a favorable effect on the rate of economic growth. More importantly, export-orientation is considered a superior strategy when compared to policies that support import substitution.

Currently, since tourism is considered the world’s largest export, vast amounts of tourism studies have drawn on the export-led hypothesis to empirically analyze tourism’s contributions to growth. The seminal work of Balaguer and Cantavella-Jorda (2002), for example, gave support to the tourism-led growth hypothesis in the case of Spain. By applying cointegration methodology with an error correction model, their study demonstrates that tourism has a long-run multiplier effect. Their study provide evidence that the tourism-led growth hypothesis is not

only applicable to developing countries but to developed countries as well. Moreover, they allude to the fact that the magnitude of such impact will be able to compensate any immiserizing effects that could result from an increase in domestic prices.

The tourism-led growth hypothesis has been also tested in developing countries. Fayissa, Nsiah and Tadesse (2009) studied the effect of international tourism in Latin America and discovered that a 10% increase in tourism results in a .4% increase of GDP per capita. Their study demonstrates that conventional sources of growth such as investment in health and housing also contribute to growth. However, the implication for tourism policy in Latin America, based on their finding, is that governments can embark on a path of sustained growth by harnessing tourism together with progressive governance.

Currently, the literature on tourism and economic growth has been devoted to explain the causal relationship between tourism and growth. For the purpose of this review, 21 research articles, published between 2002 and 2009, which investigate the long-run relationship between tourism and growth, were selected. The communality among all these studies is that they attempted to answer the questions, does tourism development causes economic growth or does economic growth lead to tourism development? According to Lee and Chang (2008), three possibilities can be found in the literature: unidirectional causality between tourism and growth, unidirectional causality between growth and tourism, or bidirectional causality between tourism and growth.

As for the first, more than 50% of the studies, 12 in total, have found unidirectional causality supporting a tourism-led growth relationship (see Table 3.). These studies have either used an error correction cointegration technique with Granger causality tests for individual

countries (9 studies), or panel regressions in the case of developed (OECD Countries; Organization for Economic Co-operation and Development developing countries) and developing economies (3 studies). The communality among these studies is the unreserved support of the expansion of tourism and development strategy. For example, Lee and Chang (2008, p. 191) stated: “In light of these results, all governments should commit to help their tourism industry expand as much as possible.”



Table 3. Tourism and Economic Growth Nexus: unidirectional causality between tourism and growth

Authors	Country	Empirical Method	Granger Direction
Chen & Chiou-Wei (2009)	Taiwan	Unit root, cointegration, VECM, Granger causality	Tourism→economic growth
Balaguer & Cantavella-Jorda (2002)	Spain	Unit root, VAR, Granger causality	Tourism→economic growth
Brida, Carrera, & Risso (2008)	Mexico	Unit root, cointegration, VECM, Granger causality	Tourism→economic growth
Brida, Lanzilotta & Risso (2008)	Uruguay	Unit root, cointegration, VECM, Granger causality	Tourism→economic growth
Durbarry (2004)	Mauritius	VECM, Granger causality	Tourism→economic growth
Ghali (1976)	Hawaii	OLS	Tourism→economic growth
Gunduz & Hatemi (2005)	Turkey	Granger causality	Tourism→economic growth
Lanza, Temple & Urga (2003)	13 OECD countries	AIDS Almost Ideal demand system	Tourism→economic growth
Lee & Chang (2008)	23 OECD Countries	Panels (heterogeneous panel with cointegration and causality tests)	Tourism→economic growth
Nowak, Sahli & Cortes-Jimenez (2007)	Spain	Unit root, cointegration and VECM Granger causality	Tourism→economic growth
Skerritt & Huybers (2005)	37 developing economies	Panel	Tourism→economic growth
Zortuk (2009)	Turkey	VECM, Granger causality	Tourism→economic growth

On the other hand, only two previous studies have found a unidirectional causality supporting the economics-driven tourism growth, meaning that tourism growth is a product of economic growth and not vice versa (Table 4). For example, Oh (2005) found that in Korea, any expansion in tourism does not result in tourism-driven economic growth. Since Korea is considered a highly industrialized country, the author recommends that policy makers support for the expansion of tourism should consider policies that sustain the demand created by business-related travelers. Similarly, Tang and Jang (2009) found that in the United States, the expansion of economic sectors such as airlines, restaurants, casinos and hotels are also a product of economic growth. In this particular case, the use of aggregate data does not allow the isolation

of the long-term effect of international travelers. Nevertheless, the implications for policy makers are to support and allocate more resources to the lodging and airline sector, as the performance of other sectors is dependent on their success to grow.

Table 4. . Tourism and Economic Growth Nexus: unidirectional causality between growth and tourism

Authors	Country	Empirical Method	Granger Direction
Oh (2005)	Korea	Unit root, cointegration and VAR, Granger causality	Tourism←economic growth
Tang & Jang (2009)	United States	Unit root, Granger causality	Tourism←economic growth

Another cluster of research, mostly in Europe and Asia, has found bidirectional causality between tourism and growth by also applying a cointegration error correction methodology (Table 5). The existence of a mutual influence in which higher levels of economic growth lead to higher levels of tourism development and vice versa deserves a different policy set and will result in more complex implications in terms of sustainability and long-run impacts. For example, Dristakis (2004) and Lee and Chien (2008) indicate that in the case of Greece and Taiwan, economic policy should support and justify the need of government intervention in fostering tourism supply, while at the same time promoting and increasing the demand for tourism products.

Table 5. Tourism and Economic Growth Nexus: bidirectional causality between tourism and growth

Authors	Country	Empirical Method	Granger Direction
Chen & Chiou-Wei (2009)	South Korea	Unit root, cointegration, VECM, Granger causality	Tourism↔economic growth
Cortez & Pulina (2006)	Spain and Italy	Unit root, cointegration, Granger causality	Tourism↔economic growth
Dritsakis (2004)	Greece	Granger causality	Tourism↔economic growth
Katircioglu (2009)	Malta	Unit root and Granger causality	Tourism↔economic growth
Kim, Chen, & Jang (2006)	Taiwan	Unit root, cointegration and Granger causality	Tourism↔economic growth
Lee & Chien (2008)	Taiwan	Unit root, cointegration and Granger causality along with structural break analysis	Tourism↔economic growth
Wickremasinghe & Ihalanayake (2006)	Sri Lanka	VECM, Granger causality	Tourism↔economic growth

The mixed results from the studies discussed above make it impossible to, a priori, estimate the potential or direction of the impact of an increase in tourism receipts on economic growth. Despite the fact that some scholars (Hazari & Ng, 1993; Hazari & Sgro, 1995) have made use of mathematical modeling to investigate whether or not the expansion of the tourism sector improves welfare, the use of aggregate measures of economic growth does not allow identifying the beneficiaries. So far, the results from mathematical simulations are mixed. For example, Hazari and Ng (1993) show that under monopolistic conditions, tourism reduces welfare. Meanwhile, Hazari and Sgro (1995) posited that tourism always improves welfare. The above arguments suggest that, despite certain signs of growth, the benefits from tourism could either disappear as leakages or only benefit certain social groups. This suggests that a gap in the literature exists and that exploring whether or not the benefits from tourism “trickle down” deserves more attention. In section 2.8, the topic of tourism and unequal growth is presented.

## **Tourism and Unequal Growth**

There is this possibility that tourism was not included as an economic strategy in the process of dependence as a riposte to the free trade economic approach to development and international trade. Any increases in tourism, as an economic activity, were viewed as a result from the enlargement of the middle class in the core countries; thus they were perceived and viewed as another mechanism that perpetuated the dependent relationship in developing countries (Bryden, 1973; Mowfort & Munt, 2003).

According to Britton (1982), emerging tourism destinations (the periphery) are in an unfavorable position when compared to developed countries (the core) during the development stage of a tourism product. The latter typically possesses the necessary entrepreneurial knowledge, resources, and skills to exert control over the expansion of tourism products. Britton's (1982) observations concerning such unbalanced relationship are materialized by a series of feedback loops that reinforce control of multinational corporations during the development process. There are various arguments against such a dependence relationship. First, metropolitan corporations significantly shape the tourism product according to the tourist expectations, thus creating a market that cannot be served by local or existing enterprises, as they control the promotion and advertising of tourism services. Moreover, they have complete control over the management and staff, thus limiting the possibilities for local residents to work in such enterprises.

Several scholars have also argued that such type of tourism development is neither effective nor beneficial for promoting economic growth, reducing poverty, or promoting development. For example, various studies have found that oftentimes as much as 90% of the

profits generated by tourism are leaked to enterprises in developed countries (Britton, 1982; Brohman, 1996; Fletcher, 1989). Economic leakages are one of the main obstacles that hinder the possible positive effect of tourism in a dependency relationship. According to Brohman (1996), the lack of linkages between the local economy and tourism service providers results in an increase of imported goods and services, thus limiting the impact on the local economy.

The panorama presented above gives the impression that the expansion of tourism causes more damage than benefits, and therefore should be avoided at all cost. However, Clancy (1999) argued that developing countries can adopt a statist approach to tourism development in order to create a tourism industry that provides growth and distributional effects that are beneficial to the destination. Early scholars from the dependency school (Cardoso 1973; Cardoso & Faletto, 1979) supported such view and foresaw the possibility of an “associated-dependent” relationship. Even though this seems somewhat unorthodox when compared to other dependency scholars, Clancy (1999) further suggested that establishing a correct mix between foreign investment, multinational hotel brands, promotional activities, infrastructure, and tourism policy can in fact promote development and benefit the destination.

In summary, the analysis of tourism under the scope of dependency theory sheds light on the adverse effects an unequal relationship could have on the local economy by favoring foreign stakeholders. However, is important to consider that a dependency relationship could also have effects that go beyond economic affairs and impact the cultural fabric of a community (Montero & Sloan, 1988). Even though tourism could improve the lives of local communities with benefits such as housing and additional incomes (Lepp, 2007), there is also the possibility that development promises are unfulfilled. At the same time, Lepp (2007) argues that feelings of

dependency are not always attributed to tourism. Past events such as civil strife and lack of freedom could prevent individuals' functionings and agency capabilities.

### **Tourism and Poverty Reduction**

Hawkins and Mann (2007) stressed that in the past couple of decades, tourism has played an important role in the formulation of development strategies for developing economies. For example, tourism's resilience generates positive impacts such as foreign exchange earnings, economic growth, employment opportunities, and welfare enhancement. In general, tourism expansion is deemed relevant and significant for economic growth, and has been found to be effective in unchaining opportunities for the most vulnerable groups within this sector.

According to Blake, Arbache, Sinclair and Teles (2008), the potential of developing countries as large tourist markets has triggered an interest for studying tourism's role in poverty reduction. For example, in many developing countries with high levels of poverty, receipts from international tourism represent a large proportion of the GDP and export earnings. However, if these receipts are spent on imports or are earned by foreign labor forces, then the resulting high leakages might work against the reduction of poverty.

For Copeland (1991), tourism is not only considered a major source of export earnings, but is often put forth as a potentially critical foundation of economic growth for others. In both developed and developing countries, governments usually invest in infrastructure and the promotion for the tourism sector. Some of these strategies may have been successful; nonetheless, others have been disappointed by the results. Copeland says that in the 1970s and 1980s, tourism was criticized as a strategy for economic development because it was associated

with the dependence on external sources of growth. Back then, the focus on poverty was based solely on developing agriculture.

Croes and Vanegas Sr. (2008) established that tourism is capable of raising incomes, and that enhancing the impact of the tourism sector may indeed reduce poverty. Moreover, international organizations recognize that tourism may be considered a strategy for poverty reduction in poor countries. The question of whether tourism can be beneficial for the poor in the least developed countries is answerable with the pro-poor impact of tourism resulting from the enhanced opportunity to provide employment. This would allow the most vulnerable groups of the society to partake in the production of non-traded goods and services. In addition, Croes and Vanegas (2008) discovered that small states have been rapidly growing, especially when they are intensely specialized in tourism, thus proving that tourism acts as an independent factor for growth. Nonetheless, functional specialization in tourism, and not simply size, is a relevant factor. This suggests that economic growth via tourism can be attributed to an increase in terms of trade and the endowment of natural resources (Croes & Vanegas Sr., 2008).

In a subsequent study, Croes and Vanegas (2010) posited that tourism's capacity to reduce poverty can be construed based on the trade economic growth and sustainability paradigms. Based on their study of tourism and poverty in Nicaragua, they found a significant impact of tourism development in terms of economic expansion and poverty reduction. For example, a 1% increase in tourism receipts will decrease by .5% the total number of people who live below the poverty line. At the same time, an identical increase in tourism will lead to a .76% increase in economic growth. These results suggest that the expansion of the tourism sector in Nicaragua increases the earning potential of the most disadvantaged sector of the population

more efficiently than economic growth, as a 1% increase in gross national product only reduces poverty by .20%.

The ability of tourism to provide higher inter-industry flows, income distribution to the poor, and the creation of jobs are also important factors to consider during the planning process. According to Rivera, Hara and Croes (2008), international tourism in Nicaragua has a bigger impact on the gross domestic product than any other sector. After disaggregating the labor force into four different income categories, they found that the ability of tourism to outperform other sectors was also visible when it comes to income distribution. The agriculture sector was the only sector that provided similar increase in income to the relatively poor income groups. Overall, tourism provided between 50% and 77% more income to those that earned NC\$5,000 or less. When looking at the income distribution across all economic sectors, evidently tourism provided higher incomes for all groups regardless.

In addition to the empirical research presented above, since the 1990s another group of researchers, the Pro Poor Tourism Partnership (PPT), has been committed to investigating tourism's potential for development and poverty alleviation (e.g., Ashley et al., 2001). As a result, international organizations such as the United Nations have adopted Sustainable Tourism for Eliminating Poverty (ST-EP) strategies to promote socially, economically, and ecologically sustainable tourism as a gateway for development. The PPT and the ST-EP take on development differ from the traditional philosophy of tourism development previously discussed. Their main goal is to establish a direct link between tourism and poverty alleviation via economic growth (Ashley et al., 2001). More specifically, their research contributions are geared at understanding partnerships between local residents and tourism operators to maximize benefits for the poor.



Such assessment, however, does not consider the tourism contribution to the national economy or its ability to reduce poverty at the national levels, as it concentrates on small communities within a destination (e.g., Briedenhann & Wickens, 2004).

The research from the pro-poor literature does not provide external validity for cases because it lacks the necessary rigor, thereby preventing these efforts from being incorporated into the academic mainstream and the authors from participating in major debates about development (Harrison, 2008). Methodological rigor enables studies in tourism to be comparatively assessed within the economic stratagem devised by governments in an attempt to advance development. Harrison (2008) alludes to the contributions of tourism by acknowledging the early researchers who regarded tourism as either a blessing or a blight, to assert that the theoretical debates about tourism and development have not gone away, but instead have become more complex. He suggests that what is needed is research “over time” on whom it benefits. This will then allow for targeted action and policy formulation.

### **Tourism and “Freedom”**

As mentioned in previous sections, it can be observed that the conceptualization of tourism as a form of socioeconomic development is mostly viewed in terms of the economic welfare provided to individuals. At the time this literature review was conducted, little attention has been paid to further explore the relationship between tourism and “freedom” and the capability approach to well-being from Sen (1999). Hashimoto (2002) has been one of the few scholars that explored and discussed tourism and the socio-cultural issues of development. However, he only provided a cursory description of the Human Development Index as an

indicator of quality of life; with no reference whatsoever to the theoretical underpinning of the capability approach that constitutes such index (e.g., Anand & Sen, 1994; Fukuda-Parr, 2003). The observations made by Hashimoto (2002) fail to appreciate the multi-dimensional components of the capability approach and only foresee the creation of jobs, tax revenues and political stability as indicators of economic development. Moreover, it foresees tourism as an indirect force of development.

Other scholars, however, have attempted to use Sen's capability framework to investigate the competitiveness and attractiveness of tourist destinations. From this perspective, Crocolici and Nijkamp (2008) conducted a study in Italy and equated the capability approach to tourism in terms of "vacation well-being." In this review, we take contention with their application of the capability approach to support tourism expansion for three reasons. First, the constructs used in their study simply reflect the country's ability to provide certain commodities and experiences for tourists with no regard to the local population. Second, relying on the assumption that well-being and satisfaction are synonyms is problematic, as it considers functionings as a simple commodity utilization function. Third, in terms of development strategies, the expansions of tourist's capabilities shouldn't neglect or supersede that of local communities, and any "a priori" assumption that tourism is beneficial to the local communities should be avoided.

From the discussion provided above, it is evident that the applicability of the capability approach for tourism deserves further investigation. The use of the capability approach by Crocolici and Nijkamp (2008) reflects a mentality of "tourism above all," in which support for tourism is focused on the efficiency of markets to maximize the tourist's utility instead of the well-being of local residents.

## **Conclusion**

To summarize, this chapter examined various development concepts such as economic growth, poverty, capabilities, and tourism. By considering these aspects, the current review of the literature puts forward the progression of development thinking and its goals. The discussion draws attention to the fact that early development scholars were fixated on Western ideals in which individuals will act in their best interest and progress will result by means of macroeconomic events and policies experienced in the developed nations. It has been also noted that early conceptualizations of development have been fanatical about economic growth and inattentive to studying its effects on improving the living conditions of people, hence reducing poverty.

The conceptualization of poverty has evolved from a simple monetary metric to more complex interpretations. Even though increases in income are necessary, important concepts such as inequality remain of outmost importance. Moreover, the capability approach provides a fresh take on development by focusing on possibilities and individual achievements. Despite the recognition of such approach, limited studies have simultaneously explored the effects of economic policies on income poverty and capabilities. At the same time, the tourism literature remains somewhat silent on the linkages between tourism and development.

It has also been noted that despite the numerous strategies for promoting development via economic growth, tourism's presence ruled out tourism as an alternative. Possibly, certain signs of dependency between developed and underdeveloped countries and the rapid expansion of tourism in peripheral areas might have perpetuated the idea that tourism was an enclave business with sizeable leakages that impede social and economic progress.

Currently the perception of tourism as a development strategy has changed, as numerous studies have addressed the linkages between tourism and economic growth. Even though none of these studies document any negative effects of tourism on growth, the relationship between tourism and growth is filled with mixed results in terms of the causal relationship.

The studies about the relationship between tourism and poverty are a contemporary phenomenon and have solely focused on investigating economic opportunities for the poor by increasing their incomes. This one-dimension aspect of poverty has been recently challenged by the literature, which considers the multidimensional aspects of poverty. The literature review has shown that the relationships between economic opportunities (including tourism) and the poor have been lacking; in particular, important aspects of poverty such as incidence, depth and severity of poverty merit further consideration.

As for the potential of expanding people's choices, the tourism literature has not yet fully explored such phenomena. In essence, tourism activities could be characterized by giving individuals the potential means for development. The capability approach demonstrates that development is more than growth and tourism has the potential of expanding peoples' capabilities as well.

In conclusion, the literature review indicates that the result of economic growth and poverty is not straightforward. The impact of tourism development on poverty also manifests mixed results. That is why this study aims to investigate the synergies between tourism and development by simultaneously considering its impact on growth, poverty and capabilities.

The upcoming chapter details the research questions and hypothesis for the empirical investigation, as well as the variables used to measure economic growth, poverty and human development. Then, a detailed explanation of the statistical methods used will be provided.

## **CHAPTER III**

### **Methodology**

The purpose of the proposed quantitative co-integration study is to examine the relationship between tourism expansion and -development. Tourism expansion is represented by the increase in international tourism receipts. Development is defined as “the ability to promote economic growth, reduce poverty, and enhance the capabilities of individuals” (Mehrotra & Delamonica, 2007 p.38). Economic growth is represented by the Gross Domestic Product. The impacts of tourism on poverty and capabilities are represented by the Sen Poverty Index and the Human Development Index respectively (Sen, 1976; United Nations, 1991). This study was directed towards the country of Ecuador. The independent variable is composed of tourism expansion. The dependent variables are the variables representing development.

Chapter 3 provides details on research design appropriateness, a description of case study subjects, the method for acquiring informed consent, confidentiality, sampling frame, and geographic locations. The method for data collection is provided and the research questions and hypotheses are revisited. A discussion of data analysis methodology is then presented. Chapter 3 concludes with a summary.

#### **Research Design and Appropriateness**

The proposed research uses a quantitative co-integration research design to identify relationships between two sets of variables. According to Bickman and Rog (2009), research designs serve as “the architectural blueprint of a research project, linking design, data collection, and analysis activities to research questions” (p. 11). Quantitative co-integration research designs

illustrate a phenomenon as it naturally occurs, as opposed to an experimental design where effects of intervention are studied (Bickman & Rog). In co-integration studies, the researcher measures the causal relationship between two or more variables using statistical tests (Creswell, 2005).

In quantitative research, an analysis of the relationship between variables is conducted in order to reveal a causal relationship (Creswell, 2005). After selecting a topic and specifying an issue that requires clarification, a quantitative researcher collects data from a specified population and statistically analyzes that data. The explanation of the relationship between variables leads to the description of trends in quantitative research.

For the proposed research, quantitative analysis is appropriate, because the relationship between tourism expansion and -development in Ecuador is explored. A qualitative research method would not be appropriate, because the proposed research involves a country's economy and the relationship between variables must therefore be analysed using quantifiable data. Alternately, in qualitative research, textual data would have been an appropriate approach.

Co-integration research can be used to summarize the relationship between two or more variables (Bickman & Rog, 2009). The use of co-integration research is justified for the proposed study, because numerical data is collected from a country as a whole, representing the tourism expansion for the purpose of determining whether an association exists between tourism expansion and development.

The methodology of the proposed research is based on a quantitative co-integration design with the intention to: (a) obtain data on the development of Ecuador, and (b) compare the development of Ecuador to its tourism expansion.

## **Case Study**

Ecuador provides a good case study, as 70% of the population lives in poverty. This implies that they cannot meet their basic nutritional requirements, even if their entire incomes were spent on food. In addition, massive income disparities are noticeable; the highest 20% of the income earners receive 80% of the income share of Gross Domestic Product (USAID, 2002). Political instability, weak institutions, lack in transparency, nepotism, and weak economic performance (Budd, 2004; Croes, Rivera, Ramirez & Pizam, 2009; Joseph, 1987; Vos & De Jong, 2000; Transparency International, 2008) is present in Ecuador and it counteracts against the national economic growth and development. The economic activities in Ecuador are characterized by a high primary commodity export concentration ratio for the leading primary products (the exports are crude petroleum, bananas, and shellfish).

A flourishing sector that has evolved as a new alternative for promoting development and economic growth in Ecuador is tourism. In 2005, Romano, Falconi and Aguinaga unveiled the results of the Tourism Satellite Accounts program for Ecuador. Their findings indicated that tourism (domestic and international) constitutes 4.5% of the gross domestic product. In addition, an increase of 13% in international arrivals in 2008 demonstrates that tourism expansion does not coincide with the economic contractions and recession in Ecuador (WTO, 2009).

## **Analytical Framework**

The first step for conceptualizing the proposed analytical framework (Figure 3) was to converge on a set of three specific objectives for assessing the effects of tourism expansion on development.



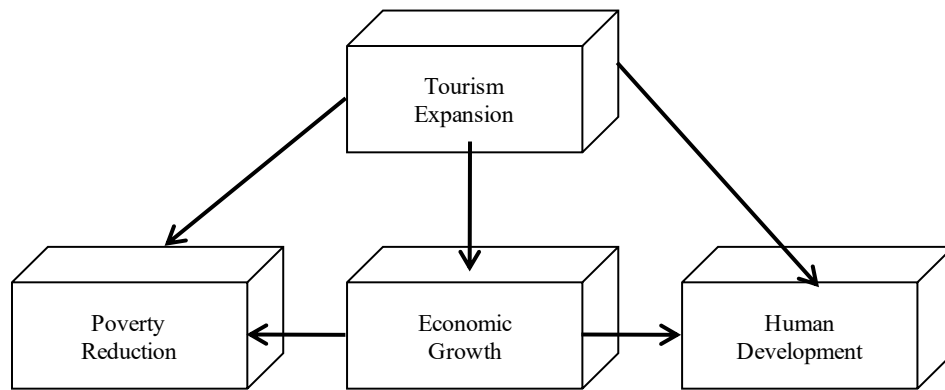


Figure 3. Causal model of development via Tourism

Source: Author's design as adapted from Mehrotra and Delamonica (2007)

The first objective, economic growth, has a strong foundation with two interrelated theories, neoclassical growth theory and endogenous growth theory. The former adheres to promoting free markets, exports, trade liberalization, and foreign investment in an attempt to spur efficiency and development (Nafziger, 1997). The latter supports an active role of the state for promoting economic development, through direct and indirect investment in human capital (Todaro & Smith, 2006 p.93). Within the context of growth, tourism is viewed as a valuable export and its effects on development, as supported by the Tourism Led Growth hypothesis (e.g., Balaguer & Cantavella-Jorda, 2002; Gunduz & Hatemi, 2005), occurs when tourism stimulates the economy in the form of spillovers and externalities.

The second objective, human capability or human development, embraces a non-welfarist approach that is based on the work of Sen (1999) and Nussbaum (2006). For them, the concept of “capabilities” should be the ultimate goal of development and reflect a person’s freedom to

lead the life that they have reason to value. They consider the ability to live, read, write, or be well nourished as ends in themselves, regardless if the economic return on such investment is zero. In addition, the concept of wellbeing should be equated with being well and the “value of the living standards lies in the living and not in the possessing of commodities” (Sen, 1987 p.25). A unique characteristic of the non-welfarist approach is that well-being is established by “objective circumstances within which people live, rather than from their subjective utility, satisfaction, or happiness” (Ringen, 1995). At the same time, capabilities differ from other non-welfarist approaches such as “primary basic needs” (Rawls, 1972) in that it pays more attention to structural constraints on the individual. However, despite the appeal of the capabilities approach, other propositions such as income shortfall, consumption thresholds, inequalities, and the incidence of poverty cannot be ignored, as they provide a sense of achievement and serve as an instrument for expanding capabilities (Annand & Ravallion, 1993).

As for the final objective, reducing poverty, this study embraces the holistic approach presented by Sen (2002). This approach is cemented in collective choice theory and considers the various predicaments and miseries that make up a society. Under such framework, poverty is no longer defined as the lack of command over commodities, but rather it is only measured by the individuals’ income or consumption capabilities. But instead, judgments about how well a society is doing are based on cogent aggregative judgments about social welfare. For Sen, the rationale for such judgments evolves by giving consideration to the income distribution of the poor and the concept of inequality, as poverty is multidimensional.

According to Foster and Sen (1997:171), the advantage of Sen’s measurement for poverty is that it satisfies specific axioms that are deemed necessary for an acceptable measure of

poverty (e.g. monotonicity, weak transfer, symmetry, replication invariance, scale invariance, focus axiom). In addition, the ordinal properties of such measures are considered strong, informative, and robust for policy evaluations and can avoid inter alia the debate on theoretical models for assessing poverty (Duclos & Araar, 2006).

### **Research Questions and Hypotheses**

The purpose of the proposed quantitative study is to examine the relationship between tourism expansion and -development. The following research questions establish the direction of the proposed research:

1. Does a long run relationship exist between tourism expansion and economic growth? If it does, what is the magnitude of the effect of tourism expansion on economic growth? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

2. Does a long run relationship exist between economic expansion and poverty reduction? If it does, to what degree does a change in economic growth act upon poverty reduction? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

3. Does a long run relationship exist between economic growth and human development? If it does, to what degree does a change in economic growth act upon human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

4. Does a long run relationship exist between tourism expansion and poverty reduction? If it does, to what degree does a change in tourism expansion act upon poverty reduction? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

5. Does a long run relationship exist between tourism expansion and human development? If it does, to what degree does a change in tourism expansion act upon human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

Based the proposed research questions, this dissertation will test the following the following hypotheses:

H1<sub>1</sub>: There is no relationship between tourism expansion and economic growth.

H1<sub>0</sub>: Higher tourism expansion leads to higher economic growth.

H2<sub>1</sub>: There is no relationship between economic growth and poverty reduction.

H2<sub>0</sub>: Higher economic growth leads to lower poverty levels.

H3<sub>1</sub>: There is no relationship between economic growth and human development.

H3<sub>0</sub>: Higher economic growth leads to higher human development.

H4<sub>1</sub>: There is no relationship between tourism expansion and poverty reduction.

H4<sub>0</sub>: Higher tourism expansion leads to lower poverty levels.

H5<sub>1</sub>: There is no relationship between tourism expansion and human development.

H5<sub>0</sub>: Higher tourism expansion leads to higher human development.

## **Data Collection**

Tourism expansion will be measured using international tourism arrivals. International tourism arrivals include international inbound visitors to Ecuador. These arrivals include all international visitors that stayed in Ecuador for at least one day. International tourism arrivals will be obtained by the researcher through the World Travel and Tourism Council website at [http://www.wttc.org/eng/Tourism\\_Research/Economic\\_Data\\_Search\\_Tool/index.php](http://www.wttc.org/eng/Tourism_Research/Economic_Data_Search_Tool/index.php)

The measures of development are gross domestic product (GDP), the human development index (HDI), and the Sen Poverty Index. GDP is used by comparing standards of living across countries, and is also converted into purchasing power parity (PPP) terms to eliminate difference in national price levels (UNDP, 2008). The GDP data for the HDI are provided by the World Bank. According to the World Bank (2009), GDP at purchaser's price is the sum gross value added by all resident producers in the economy including product taxes, but not including any subsidies in the value of the products. GDP is calculated without making deductions for depreciation of fabricated assets or for depletion or degradation of natural resources (World Bank).

The United Nations Development Program (2008) defines the human development index (HDI) as

“A composite index that measures the average achievements in a country in three basic dimensions of human development: a long and healthy life; access to knowledge; and a decent standard of living. These basic dimensions are measured by life expectancy at birth, adult literacy and combined gross enrolment in primary, secondary, and tertiary level education, and gross domestic product (GPD) per capita (p.225).”

The HDI does not capture the entire concept of human development, nor does it reflect political participation and gender inequality. The creation of the HDI was driven by the need to show that human beings and their capabilities are appropriate criteria to assess countries' development, not economic growth (UNDP).

While GDP per capita is a purely economic measure of development, the HDI is a human measure of development. The GDP of Ecuador from 1988 to 2005 will be obtained by the researcher through the Central Bank of Ecuador. The HDI of Ecuador from 1998 to 2005 will be obtained from the United Nations Human Development Reports from 1988 to 2005.

As for the third measure, the Sen Poverty Index incorporates the headcount ratio, the income gap or depth of poverty, and the Gini co-efficient. The headcount ratio is the proportion of people in a society who are living in poverty. The income gap is usually estimated as the distance between the mean income of the poor and the poverty line. The Gini co-efficient is one of the most commonly used measures of income inequality. The Gini is based on the Lorenz Curve, which plots cumulative percentages of the population against their cumulative aggregate incomes. The three factors are calculated to form the Sen Poverty Index, which measures the incomes of the poorest persons more heavily than the incomes of persons closer to the threshold (Jesuit & Smeeding, 2002). The Sen Index is obtained utilizing the following formula:

$$\text{Sen Index} = H \times [I + (1 - I) \times G] \quad (1)$$

Where H is the poverty headcount and includes that segment of the population that have incomes lower than poverty line. The poverty line in Ecuador is based on a minimum consumption capability for basic goods. As for I, it represents the income shortfall of the poor, with regard to the poverty line. The last component of the index is G, which represents the Gini Coefficient and its measure of concentration (inequality) of income.

The Sen Poverty Index of Ecuador from 1998 to 2005 will be obtained by the researcher through the Sistema Integrado de Indicadores Sociales del Ecuador (SIISE), a government organization that gathers and elaborates on social indicators about the Ecuadorian population, in order to guide social and economic policies. This information is of public domain and is available at <http://www.siise.gov.ec/>.

Data coding, as well as the calculation of study variables will be agreed upon by the researcher and subject organization. Data for the tourism expansion and development variables will be collected and imported into a Microsoft Excel spreadsheet. From the Microsoft Excel format, data will be downloaded to the STATA software for data analysis.

### **Data Analysis**

In the proposed co-integration research, the degree of association of the two sets of variables, tourism expansion and -development will be analysed to explore their relationship. The following steps provide an overview of how the data will be analysed.

For the proposed study, the data will be explored using descriptive statistics, mean, standard deviation, and maximums and minimums to determine whether there is a general trend

in the data. According to Creswell and Plano Clark (2007), data is explored to identify the distribution so that appropriate statistics can be chosen for analysis.

### *Unit Root Tests*

Whenever time series data are used in econometric models, any trend or seasonal component or any “memory” must be removed, in order to avoid spurious results. Most variables considered in tourism analysis seem non-stationary in the technical sense, i.e., their mean and variances alter over time. Traditional statistical tests proved less effective in dealing with these variables, and consequently with dynamic models or inter-temporal effects (Song & Witt, 2000). Any series that contains a trend is likely to be non-stationary and will contain a unit root. Therefore, the first procedure is to test for unit root. Numerous tests have been used in the economic literature to test for unit roots. However, the unit roots testing methods that are utilized in this dissertation are the ADF Test (Dickey & Fuller 1979, 1981) and the PP Test (Phillips & Perron, 1988).

Augmented Dickey-Fuller (ADF) test accommodates general ARMA (p, q) models with unknown orders. The ADF test tests the null hypothesis that a time series  $y_t$  is  $I(1)$  against the alternative that it is  $I(0)$ , assuming that the dynamics in the data have an ARMA structure. The ADF test is based on estimating the test regression:

$$y_t = \beta'D_t + \phi y_{t-1} + \sum \psi_j \Delta y_{t-j} + \varepsilon_t \quad (2)$$

Where  $D_t$  is a vector of deterministic terms (constant, trend and so forth). The  $p$  lagged difference terms,  $\Delta y_{t-j}$ , are used to approximate the ARMA structure of the errors, and the value



of  $p$  is set so that the error  $\varepsilon_t$  is serially uncorrelated. The error term is also assumed to be homoskedastic. The specification of the deterministic terms depends on the assumed behaviour of  $y_t$  under the alternative hypothesis of trend stationarity. Under the null hypothesis,  $y_t$  is  $I(1)$  which implies that  $\varphi = 1$ . The ADF t-statistic and normalized bias statistic are based on the least squares estimates of the test regression and are given by

$$ADF_t = t_{\varphi=1} = \hat{\varphi} - 1 / SE(\varphi) \quad (3)$$

$$ADF_n = T (\hat{\varphi} - 1) / (1 - \hat{\psi}_1 - \dots - \hat{\psi}_p) \quad (4)$$

Where  $\pi = \varphi - 1$ . Under the null hypothesis,  $\Delta y_t$  is  $I(0)$ , which implies that  $\pi = 0$ . The ADF t-statistic is then the usual t-statistic for testing  $\pi = 0$  and the ADF normalized bias statistic is  $T\pi / (1 - \hat{\psi}_1 - \dots - \hat{\psi}_p)$ . The test regression is often used in practice because the ADF t-statistic is the usual t-statistic reported for testing the significance of the coefficient  $y_{t-1}$ . The failure to reject the null hypothesis implies that the time series is non-stationary at a given significance level and therefore it requires taking first or higher order differencing of the level data to establish stationarity.

Phillips and Perron (1988) developed a number of unit root tests that have become popular in the analysis of financial time series. The Phillips-Perron (PP) unit root tests differ from the ADF tests, mainly in how they deal with serial correlation and heteroskedasticity in the errors. In particular, where the ADF tests use a parametric auto regression to approximate the ARMA structure of the errors in the test regression, the PP tests ignore any serial correlation in the test regression. The test regression for the PP tests is

$$\Delta y_t = \beta^2 D_t + \pi y_{t-1} + u_t \quad (5)$$

Where  $u_t$  is  $I(0)$  and may be heteroskedastic. The PP tests correct for any serial correlation and heteroskedasticity in the errors  $u_t$  of the test regression by directly modifying the test statistics  $t_{\pi=0}$  and  $T_{\hat{\pi}}$ . These modified statistics, denoted  $Z_t$  and  $Z_{\pi}$ , are given by

$$Z_t = (\hat{\sigma}^2 / \hat{\lambda}^2)^{1/2} \times t_{\pi=0} - 1/2 (\hat{\lambda}^2 - \hat{\sigma}^2 / \hat{\lambda}^2) \times (T \times SE(\hat{\pi}) / \hat{\sigma}^2) \quad (6)$$

$$Z_{\pi} = T_{\hat{\pi}} - 1/2 (T^2 \times SE(\hat{\pi}) / \hat{\sigma}^2) \times (\hat{\lambda}^2 - \hat{\sigma}^2) \quad (7)$$

The terms  $\hat{\sigma}^2$  and  $\hat{\lambda}^2$  are consistent estimates of the variance parameters

$$\sigma^2 = \lim_{T \rightarrow \infty} T^{-1} \sum E[u_t^2] \quad (8)$$

$$\lambda^2 = \lim_{T \rightarrow \infty} \sum E[T^{-1} S_T^2] \quad (9)$$

Where  $S_T = \sum u_t$ . The sample variance of the least squares residual  $\hat{u}_t$  is a consistent estimate of  $\sigma^2$ , and the Newey-West long-run variance estimate of  $u_t$  using  $\hat{u}_t$  is a consistent estimate of  $\lambda^2$ .

Under the null hypothesis that  $\pi = 0$ , the PP  $Z_t$  and  $Z_{\pi}$  statistics have the same asymptotic distributions as the ADF t-statistic and normalized bias statistics. The failure to reject the null hypothesis implies that the time series is non-stationary at a given significance level and therefore it requires taking first or higher order differencing of the level data to establish stationarity. One advantage of the PP tests over the ADF tests is that the PP tests are robust to

general forms of heteroskedasticity in the error term  $u_t$ . Another advantage is that the user does not have to specify a lag length for the test regression.

The application of these diagnostic tests is a prerequisite for testing for co-integration. First differencing or second differencing will solve the problem of non stationarity. The number of differencing to get back to stationarity determines the order of integration of the variables. If the variables are stationary, then any arbitrary combination among them will also be stationary (Granger Representation Theorem). This means that they move closely together over time and do not drift apart. In other words, there is some mechanism that pulls these variables back together. If this is the case, then the variables are said to be co-integrated. Engle and Granger posited that there is always an error correction representation that can depict the process of this relationship linking the variables

#### *Engle Granger Two Step Procedure and Error Correction*

The co-integration procedure implemented in this study will determine if any pair of variables forms a long term equilibrium combination. The Engle and Granger (1987) two stage approach is used to test for co-integration. Engle and Granger (1987) proposed a two-step approach to testing for causality or co-integration. The Engle-Granger two-stage procedure involves first testing both variables for unit roots and estimating a co-integration regression between  $Y_t$  and  $X_t$  using Ordinary Least Square regressions. The second step involves testing the stationarity of the error processes of the regressions generated in the first step. For the purpose of

this dissertation, the first step of Engle and Granger (1987) procedure is repeated for each of the relationships proposed with following five set of equations:

$$Y_{sen_t} = \alpha_{1.1} + \beta_{1.1}X_{tour_t} + \mu_{1.1} \quad (10)$$

$$Y_{sen_t} = \alpha_{1.2} + \beta_{1.2}X_{growth_t} + \mu_{1.2} \quad (11)$$

$$Y_{sen_t} = \alpha_{1.2} + \beta_{1.2}X_{growth_t} + \mu_{1.2} \quad (12)$$

$$Y_{hdi_t} = \alpha_{1.3} + \beta_{1.3}X_{tour_t} + \mu_{1.3} \quad (13)$$

$$Y_{hdi_t} = \alpha_{1.4} + \beta_{1.4}X_{growth_t} + \mu_{1.4} \quad (14)$$

$$Y_{growth_t} = \alpha_{1.5} + \beta_{1.5}X_{tour_t} + \mu_{1.5} \quad (15)$$

where  $Y_{sen_t}$  = Sen Poverty Index,  $X_{tour_t}$  = tourism receipts,  $X_{growth_t}$  = gross domestic product,  $Y_{hdi_t}$  = human development index,  $Y_{growth_t}$  = gross domestic product at time t, and  $\mu_{1.1}, \mu_{1.2}, \mu_{1.3}, \mu_{1.4}$ , and  $\mu_{1.5}$  equal the error terms (residuals) for all equations and measure the extent of equilibrium between the dependent and independent variable. If any of combination of these residuals are integrated in the order of zero, I(0), it can be said that X and Y are cointegrated and do not drift apart in the long run. Engle and Granger (1987) argued that in the presence of cointegration the information from one variable can be used to predict the other.

According to Engle and Granger (1987), if two variables are co-integrated, there an error-correction representation may exist and take form in the following equation:

$$\Delta Y_t = \alpha_{10} + \beta_1 \Delta X_t + \rho_1 \mu_{t-1} + \varepsilon_{10} \quad (16)$$

Where  $\Delta$  represent a first difference operator,  $\mu_{t-1}$  is the error-correction term (which is the residual series of the cointegrating equations 1a,2a, 3a,4a, 5a.). According to Granger (1986), the error-correction models produce better short run forecasts and provide the short run dynamics necessary to obtain long run equilibrium. If the series are co-integrated, then the error-correction model given is valid and the coefficient  $\mu_{t-1}$  is expected to capture the adjustments of  $\Delta Y_t$  towards long run equilibrium.

The second error correction model (ECM) is modeled after Davidson, Hendry, Srba and Yeo (1978) and is equivalent to an Autoregressive Distributed Lag Model. If the results from the co-integration test indicate that the time series are cointegrated, a justification exists in which the behavior of the dependent variable is tied to the independent variable in the long run and short run changes in the dependent variable react to any departure from equilibrium. The error correction equation for cointegrated series can be written as:

$$\Delta Y_t = \beta_1 \Delta X_t + \gamma [Y_{t-1} - \beta_2 X_{t-1}] + \omega_t \quad (17)$$

Where  $\Delta Y_t$  is the first difference of Y,  $Y_{t-1}$  is the lagged value of Y,  $\beta_1$  is the coefficient that captures the short term relationship between the dependent and independent variable, and the term  $\gamma [Y_{t-1} - \beta_2 X_{t-1}]$  provides the proportion of disequilibrium that is corrected in each

passing period and  $\beta_2$  captures the long term relationship. For each of the cointegration relationships in this dissertation, the one step error correction equations are:

$$\Delta Y_{sen_t} = \alpha_1 + \beta_1 \Delta X_{tour_t} + \gamma_1 [Y_{sen_{t-1}} - \beta_2 X_{tour_{t-1}}] + \omega_{1t} \quad (18)$$

$$\Delta Y_{sen_t} = \alpha_1 + \beta_1 \Delta X_{growth\ gdp_t} + \gamma_1 [Y_{sen_{t-1}} - \beta_2 X_{growth\ gdp_{t-1}}] + \omega_{2t} \quad (19)$$

$$\Delta Y_{hdi_t} = \alpha_1 + \beta_1 \Delta X_{tour_t} + \gamma_1 [Y_{hdi_{t-1}} - \beta_2 X_{tour_{t-1}}] + \omega_{3t} \quad (20)$$

$$\Delta Y_{hdi_t} = \alpha_1 + \beta_1 \Delta X_{growth\ gdp_t} + \gamma_1 [Y_{hdi_{t-1}} - \beta_2 X_{growth\ gdp_{t-1}}] + \omega_{4t} \quad (21)$$

$$\Delta Y_{growth\ gdp_t} = \alpha_1 + \beta_1 \Delta X_{tour_t} + \gamma_1 [Y_{growth\ gdp_{t-1}} - \beta_2 X_{tour_{t-1}}] + \omega_{5t} \quad (22)$$

Traditionally, the term  $\gamma$  is negative and smaller than the absolute value of one. In case the term  $\gamma = 0$ , a re-equilibrium process does not occur, as it occurs only in one period.

### *Granger Causality Tests*

As for the question of causality, the Granger (1969) test is applied only if co-integration between any set of two variables exists, which indicates that causality must then run in at least one direction. According to the Granger representation theorem, in a bi-variate context, causality boils down to the significance of the lagged residuals in the regression model. In this dissertation, we make an *a priori* assumption that tourism expansion has an effect on economic growth, human development, and poverty. Therefore, the importance for establishing the causal

relationship in a Granger sense is to validate such claims. The Granger-causality test has been developed to ascertain whether or not the inclusion of past values of a variable X does or does not help in the prediction of present values of another variable Y. If variable Y is better predicted by including past values of X than by not including them, then, X is said to Granger-cause Y. Similarly, if the past values of Y can be used to predict X more accurately than simply using the past values of X, then, Y is said to Granger-cause X. If the analysis reveals that X Granger-causes Y, and Y also Granger-causes X, there is bi-directional causality. In order to avoid spurious causality both of the variables under consideration need to be stationary. Standard tests for causality are also valid, only if X and Y are co-integrated.

The time-series data to be used in the study are Ecuador national data from 1988 to 2005. The statistical analysis will determine whether tourism expansion has a causal relationship with economic growth, human development, and poverty, as well as determine whether economic growth has a causal relationship with human development and poverty.

### **Summary**

This chapter reviewed the research methodology in detail. The appropriateness of the co-integration research design was discussed. The use of co-integration research is justified for the proposed research, because numerical data is collected for the purpose of determining if an association exists between variables of tourism expansion and -development. The specific case to be investigated by the study is the country of Ecuador. A description of the statistical methods for the analysis of data was overviewed. Chapter 4 will discuss the findings of the proposed study.

## **CHAPTER IV**

### **Introduction**

The methodology presented in the previous chapter allows examining the relationship between tourism and development. As previously stated, development via tourism is conceptualized by considering three important aspects; poverty, economic growth, and human development. The current chapter uncovers the results generated from the econometric procedures of stationarity, cointegration, error correction, and causality tests for each of the proposed research questions and hypotheses. The chapter starts by first describing the data variables for statistical analyses. Then, the statistical methods, research questions, and corresponding hypothesis are presented. Lastly, it proceeds to the individual findings pertaining to the relationships between the variables under investigation.

### **Data Description**

The analysis of the potentials of tourism as a vehicle for development is carried out by using the country of Ecuador as a case study. By adapting a case study research design the results from this study cannot be generalized to other tourism destination. However, as stated by Kulendran and Witt (2001), such approach is capable of producing seminal information pertaining to a country's data patterns and also allows unveiling any structural or causal inferences among variables. Moreover, Banerjee et al., (1994) indicate that such results also hold high level of explanatory power and changes over time are relatively invariant. Therefore, we expect that the theoretical and methodological rigor from the proposed model not only serves



as a blueprint for the future analysis of tourism and development in Ecuador, but other destinations as well.

The data set used included yearly time series data for four variables from 1988 to 2005. The data used for gauging tourism expansion is the influx of international visitors to Ecuador. Tourism arrivals are a preferred proxy for the size of the tourism industry for two reasons, namely availability and reliability (Croes, 2010; Kim et al 2006; Wang & Godbey, 1994). Other studies have used tourism receipts from international visitors; however, a complete data set was not available for the period under investigation. In addition, the use of tourism receipts in developing countries might not capture the true impact of tourism, due to the existence of an informal tourism sector (Croes & Vanegas, 2008) and the lack of rigor in terms of survey design, sampling, and data collection (Harrison,2008).

To capture the state of poverty in Ecuador this dissertation opted for an ordinal measurement and uses the Sen Poverty Index (Sen, 1980). The Sen Index is a composite index that conceptualizes poverty by considering three important aspects of poverty: the number of poor people, the income shortfall of the poor, and inequality. The Sen Index is obtained utilizing the following formula:

$$\text{Sen Index} = H \times [I + (1 - I) \times G] \quad (23)$$

Where  $H$  is the poverty headcount and includes that segment of the population that have incomes lower than poverty line. The poverty line in Ecuador is based on a minimum consumption capability for basic goods. As for  $I$ , it represents the income shortfall of the poor with regard the poverty line. The last component of the index is  $G$ , which represents the Gini Coefficient and it is a measure of the inequality of income. The data for the Sen Poverty Index

was obtained from the Ecuador Bureau of Statistic and the office of Sistemas Integrados de Indicadores Sociales del Ecuador during a visit from the researcher to the central office in the city of Quito.

In addition, just as in previous studies about development, economic growth is measured by the real Gross Domestic Product (GDP). The GDP figures for Ecuador capture the value of goods and services produced in the economy and are expressed in base year prices for the year 2000. Such data was provided by the Central Bank of Ecuador and collected by the researcher during a visit to the central offices in the capital of Ecuador, Quito.

The indicator for human development is the Human Development Index (HDI) from the United Nations. The HDI Index considers three development indicators: life expectancy, adult literacy and gross Domestic Product per capita. This index is developed by the United Nations and is computed by transforming each of the previously mentioned indicators into a free –unit index between 0 and 1. The formula use to capture each of the components of the HDI is:

$$x_{index} = \frac{x - \min(x)}{\max x - \min(x)} \quad (24)$$

Where  $x$  is the values of the individual components for Ecuador,  $\min(x)$  and  $\max(x)$  are the lowest and highest values each of the individual components of the HDI and are derived from the scores of the countries in the sample. The HDI index is represented by the weighted sum of the indexes for life expectancy, literacy and GDP per capita, each representing one third. This index was obtained from the yearly Human Development Reports published by the United Nations.

The data set for tourism arrivals and economic growth was transformed to natural logarithm in order to accurately estimate the proportional effects of the tourism on the dependent variables. According to Ezzamel, Mar-Molinero and Beech (1987), the logarithmic transformation of a variable reduces the positive skewness, as it compresses the upper end of the distribution while stretching out the lower end. For example, the distances between 0.1 and 1, 1 and 10, or 10 and 100 are identical in a logarithmic form. The data for the Sen Index and the HDI index was not transformed in to natural logs, as it is expressed in index form with values ranging from 0 to 1 and positive. Therefore any differencing of these indexes will represent the percentage changes from period to period.

### **Method, Research Question and Hypothesis**

This dissertation follows a rigorous order of decisive statistical procedures. The first step before proceeding with the cointegration tests, error correction models and causality test is to analyze the properties of the variables and verify if they are stationary. Such procedure yields super consistent results when applying cointegration and error correction model, as it avoids the possibility of spurious results. Two different unit root tests are employed, the Augmented Dickey Fuller and the Phillips Perron Unit Root Tests. The null hypothesis of these stationarity tests is that the variables have a unit root, in other words, are not stationary. Meanwhile, the alternative hypothesis is that they are stationary. If the results indicate that the null cannot be rejected, the test should be run again and both variables must be differenced one time. If the tests turned out to contain a unit root, a second round of tests will be carried out till the results indicate that the null hypothesis can be rejected. The research questions and the corresponding equations for

testing for the presence of unit roots are presented in Table 6. These entire tests are performed with a constant and a drift or trend.

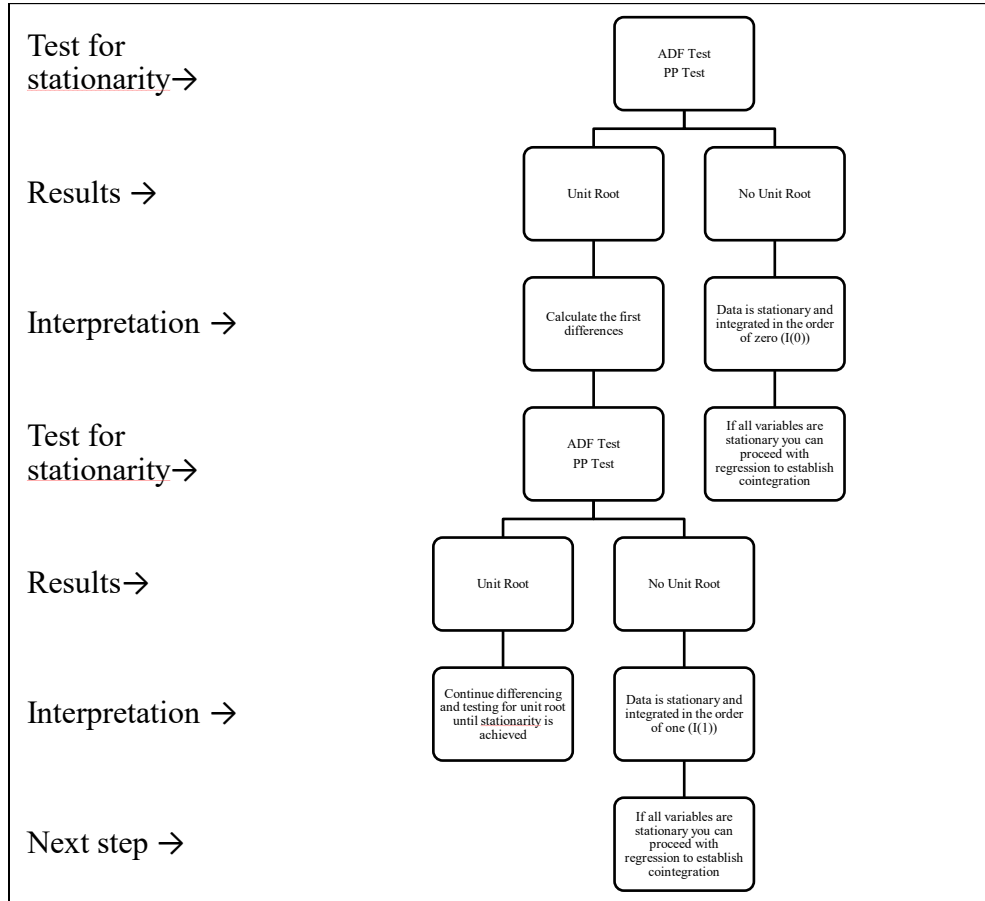
Table 6. Unit Root Equations for all variables

Unit Root Test		Equations
Poverty	Drift	$Y_{sen_t} = \alpha_t + Y_{sen_{t-1}} + \varepsilon_t$
	Trend	$Y_{sen_t} = \alpha_t + Y_{sen_{t-1}} + T_{trend} + \varepsilon_t$
Tourism	Drift	$Y_{tour_s_t} = \alpha_t + Y_{tour_{t-1}} + \varepsilon_t$
	Trend	$Y_{tour_t} = \alpha_t + Y_{tour_{t-1}} + T_{trend} + \varepsilon_t$
Economic Growth	Drift	$Y_{growth\ gdp_t} = \alpha_t + Y_{growth\ gdp_{t-1}} + \varepsilon_t$
	Trend	$Y_{growth\ gdp_t} = \alpha_t + Y_{growth\ gdp_{t-1}} + T_{trend} + \varepsilon_t$
Human Development	Drift	$Y_{hdi_t} = \alpha_t + Y_{hdi_{t-1}} + \varepsilon_t$
	Trend	$Y_{hdi_t} = \alpha_t + Y_{hdi_{t-1}} + T_{trend} + \varepsilon_t$

All of the equations presented in Table 6 take into consideration the order of lagged values to be included, meaning the order of autoregressive processes, through which two information criteria remove any serial correlation. The two criteria used are: the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criteria (SBIC). These information criteria will reveal if the variables under investigation are sensitive to the choice of lags included.

According to Hamal (1996), when applying the ADF unit root test, including additional lag terms to reduce any autocorrelation problem may create a problem of losing degrees of freedom. However, such a problem does not rise when applying the Phillips Perron Unit Root Test, as the latter uses a non-parametric method to correct any autocorrelation problem. Nevertheless, both tests are carried out for all variables under investigation. However, if a pair of variables is nonstationary in levels for the models with a constant and a trend, and stationary in first differences, a “spurious regression” problem might exist. Such problem suggests that the model can only be tested with difference terms. Consequently, any transformation of the variables from levels to first differences prevents capturing the long run relationship. If this happened to be the case, the problem can be overcome by applying an error correction model, but only if a cointegrating relationship exists. Establishing that the variables do not contain a unit root is a prerequisite in order to proceed with the cointegration analysis. A detail description of the processes involved when testing for a unit root is depicted in Figure 4.

Figure 4. Decision Tree for Unit Root Tests



The second step of the methodology involves testing for cointegration. The preferred test is the Engle Granger cointegration test. This test requires regressing the independent variables (either Tourism or Economic Growth) on the dependent variables (Poverty, Human Development and Economic Growth). The Engle Granger Test focuses on the testing the properties of the residual for unit root, derived from the regression application. A total of five different

regressions are performed to obtain the residuals. The corresponding equations for obtaining the residuals are as follow:

The Equation to obtain the residuals from the regression of Tourism and poverty is:

$$Y_{sen_t} = \alpha_t + \beta_1 X_{tour_t} + \mu_t \quad (25)$$

The Equation to obtain the residuals from the regression of economic growth and poverty is:

$$Y_{sen_t} = \alpha_t + \beta_1 X_{growth_t} + \mu_t \quad (26)$$

The Equation to obtain the residuals from the regression of tourism and human development is:

$$Y_{hdi_t} = \alpha_t + \beta_1 X_{tour_t} + \mu_1 \quad (27)$$

The Equation to obtain the residuals from the regression of economic growth and human development is:

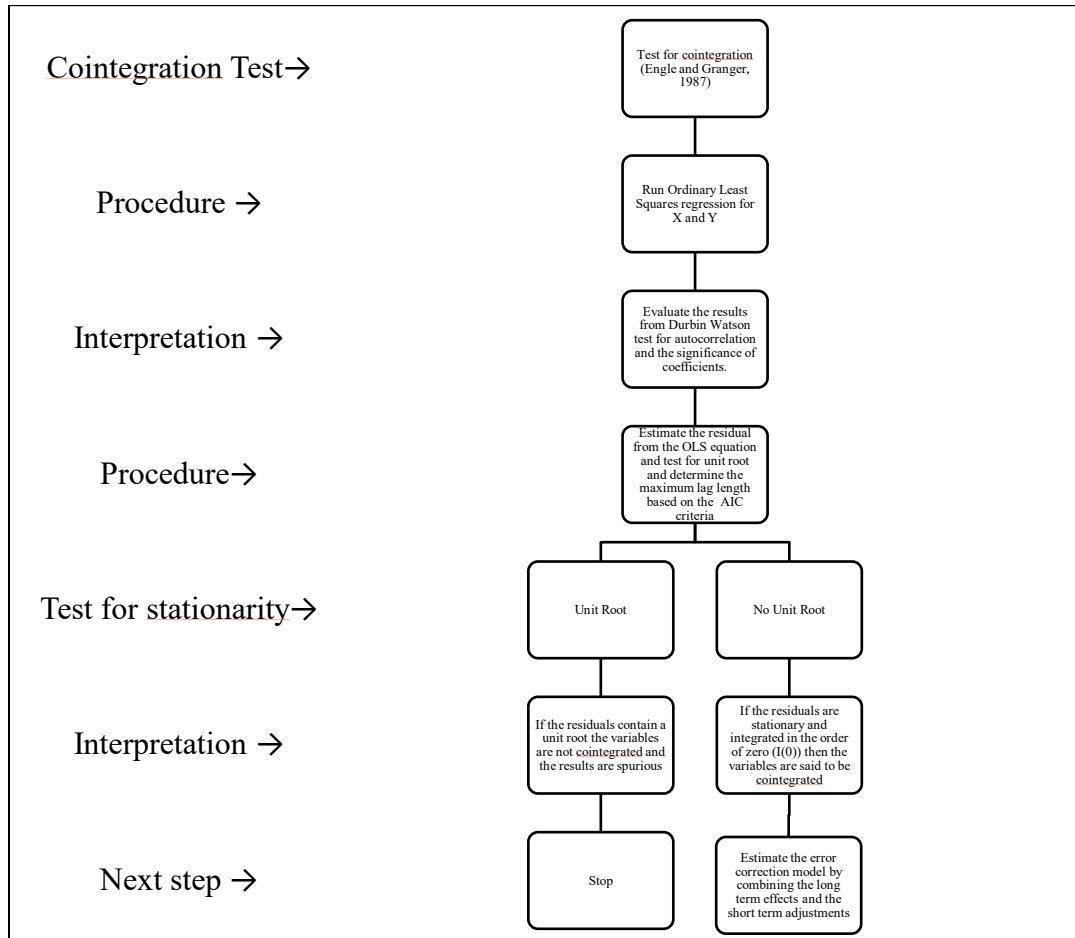
$$Y_{hdi_t} = \alpha_t + \beta_1 X_{growth_t} + \mu_t \quad (28)$$

The Equation to obtain the residuals from the regression of tourism and economic growth is:

$$Y_{growth_t} = \alpha_1 + \beta_1 X_{tour_t} + \mu_t \quad (29)$$

The residuals ( $\mu_t$ ) for each of the regressions presented above are estimated and tested for unit root. The latter procedure determines if the variables are cointegrated or not. If the residuals from the previous regressions do not contain a unit root they are said to be cointegrated, thus concluding that each pair of variables exhibits a long run relationship. The procedures for the cointegration tests are depicted in Figure 5.

Figure 5. Decision Tree for Cointegration Analysis



The third procedure involves building an Error Correction model for each of the five relationships that capture development. Two different error correction models are employed, the Single Equation Error Correction Model and the Autoregressive Distributed Lag Model. The Single Equation Model attempts to answer the question regarding the time of adjustment of the effects of the independent variable on the dependent variable and the magnitude of the short term



effects. The research questions regarding the short-term relationship between variables, the corresponding hypothesis, and the equations for the residual error correction test are:

**Research Question#1:**

*Is there a short-term relationship between tourism and poverty?*

*H<sub>0</sub>: There is no short-term relationship between tourism and poverty.*

*H<sub>1</sub>: There is a short-term relationship between tourism and poverty.*

Proposed equation:

$$\Delta Y_{sen_t} = \alpha_1 + \beta_1 \Delta X_{tour_t} + \rho_1 \mu_{t-1} + \varepsilon_t \quad (30)$$

Where  $\Delta Y_{sen_t}$  and  $\Delta X_{tour arrivals_t}$  are a first difference operator for poverty and tourism, and  $\mu_{t-1}$  is the error-correction term (the lagged residuals from the cointegration equation) to capture the time of adjustment for the effects of tourism on poverty.

**Research Question#2:**

*Is there a short-term relationship between economic growth and poverty?*

*H<sub>0</sub>: There is no short-term relationship between economic growth and poverty.*

*H<sub>1</sub>: There is a short-term relationship between economic growth and poverty.*

Proposed equation:

$$\Delta Y_{sen_t} = \alpha_t + \beta_1 \Delta X_{growth gdp_t} + \rho_2 \mu_{t-1} + \varepsilon_t \quad (31)$$

Where  $\Delta Y_{sen_t}$  and  $\Delta X_{growth\ gdp_t}$  are a first difference operator for poverty and economic growth, and  $\mu_{t-1}$  is the error-correction term (the lagged residuals from the cointegration equation) to capture the time of adjustment for the effects of economic growth on poverty.

**Research Question#3:**

*Is there a short-term relationship between tourism and human development?*

$H_0$ : *There is no short-term relationship between tourism and human development.*

$H_1$ : *There is a short-term relationship between tourism and human development.*

Proposed equation:

$$\Delta Y_{hdi_t} = \alpha_t + \beta_1 \Delta X_{tour_t} + \rho_3 \mu_{t-1} + \varepsilon_t \tag{32}$$

Where  $\Delta Y_{hdi_t}$  and  $\Delta X_{tour_t}$  are a first difference operator for human development and tourism, and  $\mu_{t-1}$  is the error-correction term (the lagged residuals from the cointegration equation) to capture the time of adjustment for the effects of tourism on human development.

**Research Question#4:**

*Is there a short-term relationship between economic growth and human development?*

$H_0$ : *There is no short-term relationship between economic growth and human development.*

$H_1$ : *There is a short-term relationship between economic growth and human development.*

Proposed equation:

$$\Delta Y_{hdi_t} = \alpha_t + \beta_1 \Delta X_{growth\ gdp_t} + \rho_4 \mu_{t-1} + t \tag{33}$$

Where  $\Delta Y_{hdi_t}$  and  $\Delta X_{growth\ gdp_t}$  are a first difference operator for human development and economic growth, and  $\mu_{t-1}$  is the error-correction term (the lagged residuals from the cointegration equation) to capture the time of adjustment for the effects of economic growth on human development.

**Research Question#5:**

*Is there a short-term relationship between tourism and economic growth?*

*H<sub>0</sub>: There is no short-term relationship between tourism and economic growth.*

*H<sub>1</sub>: There is a short-term relationship between tourism and economic growth.*

Proposed equation:

$$\Delta Y_{growth\ gdp_t} = \alpha_1 + \beta_5 \Delta X_{tour_t} + \rho_5 \mu_{t-1} + \varepsilon_t \tag{34}$$

Where  $\Delta Y_{growth\ gdp_t}$  and  $\Delta X_{tour_t}$  are a first difference operator for economic growth and tourism, and  $\mu_{t-1}$  is the error-correction term (the lagged residuals from the cointegration equations) to capture the time of adjustment for the effects of tourism on economic growth.

As for the second error correction model, it identifies the short term impact, long term impact, and the adjustment speed of the effect of the lagged values of the independent variable on the dependent variable. This model was proposed by Davidson, Hendry, Srba and Yeo (1978) and takes the form of an Autodistributed Lag Model with the following equation:

$$Y_t = \alpha_1 + \beta_0 X_t + \beta X_{t-1} + \rho Y_{t-1} + \omega_t \tag{35}$$

we subtract  $Y_{t-1}$  from both sides of the equation and substitute  $X_t$  for  $\Delta X_t$  and obtain the following error correction equation:

$$\Delta Y_t = \alpha_1 + \beta_0 \Delta X_t + \beta_2 X_{t-1} + \gamma Y_{t-1} + \omega_t \quad (36)$$

The error correction model can be written as:

$$\Delta Y_t = \alpha_1 + \beta_0 \Delta X_t + \gamma [Y_{t-1} - \beta_3 X_{t-1}] + \omega_t \quad (37)$$

where  $\beta_0 \Delta X_{t-1}$  represent the short term impact,  $\beta_3 X_{t-1} = \frac{-\beta_2}{\gamma}$  and captures the long term effect, and  $\gamma$  captures the rate at which the model moves towards equilibrium. The research questions regarding the short-term/long term relationship between variables, the corresponding hypothesis, and the equations for the autoregressive distributed lag error correction model are as follow:

**Research Question#1a:**

*Is there a short-term relationship between tourism and poverty?*

$H_0$ : *There is no short-term relationship between tourism and poverty.*

$H_1$ : *There is a short-term relationship between tourism and poverty.*

**Research Question#1b:**

*Is there a long-term relationship between tourism and poverty?*

$H_0$ : *There is no long-term relationship between tourism and poverty.*

H<sub>1</sub>: *There is a long-term relationship between tourism and poverty.*

Proposed equation:

$$\Delta Y_{sen_t} = \alpha_1 + \beta_0 \Delta X_{tour_t} + \gamma [Y_{sen_{t-1}} - \beta_3 X_{tour_{t-1}}] + \omega_{1t} \quad (38)$$

Where  $\Delta Y_{sen_t}$  is a first difference operator for poverty,  $\beta_0 \Delta X_{tour_t}$  is a first difference operator for tourism (captures the short term effects of tourism),  $\beta_3 X_{tour_{t-1}}$  captures the long term effects of tourism, and  $\gamma$  captures the time of adjustment for the long term effects of tourism on poverty.

**Research Question#2a:**

*Is there a short-term relationship between economic growth and poverty?*

H<sub>0</sub>: *There is no short-term relationship between economic growth and poverty.*

H<sub>1</sub>: *There is a short-term relationship between economic growth and poverty.*

**Research Question#2b:**

*Is there a long-term relationship between economic growth and poverty?*

H<sub>0</sub>: *There is no long-term relationship between economic growth and poverty.*

H<sub>1</sub>: *There is a long-term relationship between economic growth and poverty.*

Proposed equation:

$$\Delta Y_{sen_t} = \alpha_1 + \beta_0 \Delta X_{growth\ gdp_t} + \gamma [Y_{sen_{t-1}} - \beta_3 X_{growth\ gdp_{t-1}}] + \omega_t \quad (39)$$

Where  $\Delta Y_{sen_t}$  is a first difference operator for poverty,  $\beta_0 \Delta X_{growth\ gdp_t}$  is a first difference operator for economic growth (captures the short term effects of economic growth),  $\beta_3 X_{growth\ gdp_{t-1}}$  captures the long term effects of economic growth, and  $\gamma$  captures the time of adjustment for the long term effects of economic growth on poverty.

**Research Question#3a:**

*Is there a short-term relationship between tourism and human development?*

$H_0$ : *There is no short-term relationship between tourism and human development.*

$H_1$ : *There is a short-term relationship between tourism and human development.*

**Research Question#3b:**

*Is there a long-term relationship between tourism and human development?*

$H_0$ : *There is no long-term relationship between tourism and human development.*

$H_1$ : *There is a long-term relationship between tourism and human development.*

Proposed equation:

$$\Delta Y_{hdi_t} = \alpha_1 + \beta_0 \Delta X_{tour_t} + \gamma [Y_{hdi_{t-1}} - \beta_3 X_{tour_{t-1}}] + \omega_t \quad (40)$$

Where  $\Delta Y_{hdi_t}$  is a first difference operator for poverty,  $\beta_0 \Delta X_{tour_t}$  is a first difference operator for tourism (captures the short term effects of tourism),  $\beta_3 X_{tour_{t-1}}$  captures the long term effects

of tourism, and  $\gamma$  captures the time of adjustment for the long term effects of tourism on human development.

**Research Question#4a:**

*Is there a short-term relationship between tourism and human development?*

$H_0$ : *There is no short-term relationship between tourism and human development.*

$H_1$ : *There is a short-term relationship between tourism and human development.*

**Research Question#4b:**

*Is there a long-term relationship between economic growth and human development?*

$H_0$ : *There is no long-term relationship between economic growth and human development.*

$H_1$ : *There is a long-term relationship between economic growth and human development.*

Proposed equation:

$$\Delta Y_{hdi_t} = \alpha_1 + \beta_0 \Delta X_{growth\ gdp_t} + \gamma [Y_{hdi_{t-1}} - \beta_3 X_{growth\ gdp_{t-1}}] + \omega_t \quad (41)$$

Where  $\Delta Y_{hdi_t}$  is a first difference operator for poverty,  $\beta_0 \Delta X_{growth\ gdp_t}$  is a first difference operator for economic growth (captures the short term effects of economic growth),

$\beta_3 X_{growth\ gdp_{t-1}}$  captures the long term effects of economic growth, and  $\gamma$  captures the time of adjustment for the long term effects of economic growth on human development.

**Research Question#5a:**

*Is there a short-term relationship between tourism and economic growth?*

$H_0$ : *There is no short-term relationship between tourism and economic growth.*

$H_1$ : *There is a short-term relationship between tourism and economic growth.*

**Research Question#5b:**

*Is there a long-term relationship between tourism and economic growth?*

$H_0$ : *There is no long-term relationship between tourism and economic growth.*

$H_1$ : *There is a long-term relationship between tourism and economic growth.*

Proposed equation:

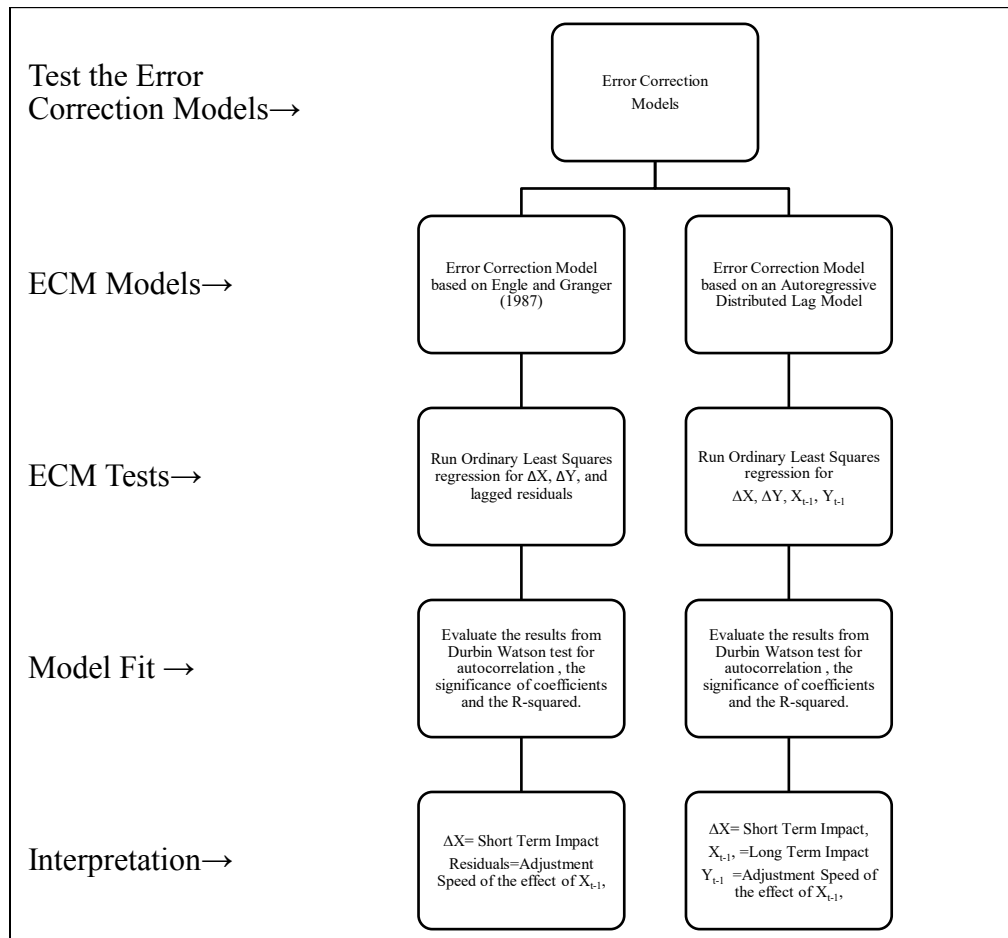
$$\Delta Y_{growth\ gdp_t} = \alpha_1 + \beta_0 \Delta X_{tour_t} + \gamma [Y_{growth\ gdp_{t-1}} - \beta_3 X_{tour_{t-1}}] + \omega_t \quad (42)$$

Where  $\Delta Y_{growth\ gdp_t}$  is a first difference operator for poverty,  $\beta_0 \Delta X_{tour_t}$  is a first difference operator for tourism (captures the short term effects of tourism),  $\beta_3 X_{tour_{t-1}}$  captures the long term effects of tourism, and  $\gamma$  capture the time of adjustment for the long term effects of tourism on economic growth.

Due to the complexity of procedures only the results that are the most significant in explanatory power will be presented. The procedures for testing the research questions and hypotheses presented above are depicted in Figure 6.



Figure 6. Decision Tree for Error Correction Models



The last important issue to be addressed is how the long run relationship between variables is causally related. This involves testing the directional causality between variables. The evidence of a cointegrating relationship indicates that the independent variable and dependent variable move together over time, however, whether the independent variable actually drives the dependent variable, or the dependent variable drives the independent variable is still

an open question. Getting the direction of the effects could have important policy implications. For example, understanding the effect of tourism on development (either in terms of economic growth, poverty reduction or the enhancement) could in turn help establishing a balance between the expansion of public services and that of private incomes, or a combination of both.

For Granger (1981), a variable causes another variable with respect to a model that includes both. In other words, is the current level of the dependent variable better explained by using past values of the independent variable than by not doing so? Or, is the current level of independent variable better explained by using past values of the dependent variable than by not doing so?

The research questions regarding the causality between variables and the corresponding hypotheses are:

### **Research Question #1:**

What is the direction of the causal relationship between tourism and poverty?

$H_0$ : *Tourism does not “Granger Cause” poverty.*

$H_1$ : *Tourism does “Granger Cause” poverty.*

$H_0$ : *Poverty does not “Granger Cause” Tourism.*

$H_1$ : *Poverty does “Granger Cause” Tourism.*

### **Research Question #2:**

What is the direction of the causal relationship between economic growth and poverty?

$H_0$ : *Economic Growth does not “Granger Cause” poverty.*

*H<sub>1</sub>: Economic Growth does “Granger Cause” poverty.*

*H<sub>0</sub>: Poverty does not “Granger Cause” Economic Growth.*

*H<sub>1</sub>: Poverty does “Granger Cause” Economic Growth.*

**Research Question #3:**

What is the direction of the causal relationship between tourism and human development?

*H<sub>0</sub>: Tourism does not “Granger Cause” Human Development.*

*H<sub>1</sub>: Tourism does “Granger Cause” Human Development*

*H<sub>0</sub>: Human Development does not “Granger Cause” Tourism.*

*H<sub>1</sub>: Human Development does “Granger Cause” Tourism*

**Research Question #4:**

What is the direction of the causal relationship between Economic Growth and human development?

*H<sub>0</sub>: Economic Growth does not “Granger Cause” Human Development.*

*H<sub>1</sub>: Economic Growth does “Granger Cause” Human Development*

*H<sub>0</sub>: Human Development does not “Granger Cause” Economic Growth.*

*H<sub>1</sub>: Human Development does “Granger Cause” Economic Growth*

**Research Question #5:**

What is the direction of the causal relationship between tourism and Economic Growth?

$H_0$ : *Tourism does not "Granger Cause" Economic Growth.*

$H_1$ : *Tourism does "Granger Cause" Economic Growth.*

$H_0$ : *Economic Growth does not "Granger Cause" Tourism.*

$H_1$ : *Economic Growth does "Granger Cause" Tourism.*

In the previous sections of this chapter a great deal of detail has been placed on explaining the data, research questions, hypotheses, and statistical procedures for this dissertation. The reasoning behind this is because the purpose of this dissertation is to construct a model to explore the effects of tourism on development in Ecuador. In such case, development is conceptualized with theoretical constructs that represent three important aspects of development theory: economic growth, poverty reduction, and human development. Our interest, therefore, is centered on providing a simplified framework that exemplifies the multifaceted literature about development. It is important to point out that we do not anticipate creating a new development theory, bearing in mind that the theory presented in Chapter #2 demonstrates that sound theories are already in existence. Therefore providing supporting evidence that the proposed model not only implies theory, but also has the potential of contributing to empirically assess the role played by tourism as a development strategy. In the following sections the empirical results for each of the relationship under study are presented.

## **Tourism and Poverty**

The first objective of this chapter is to examine the relationship between tourism arrivals and poverty reduction. The research questions that guide and frame the proposed model are:

Does a long run relationship exist between tourism arrivals and poverty? If it does, what is the magnitude of the effect of tourism arrivals on poverty? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The variables for gauging tourism and poverty are the number of tourism arrivals and the Sen Poverty Index. In the next section we investigate the relationship with poverty.

### *Unit Root Tests*

Table 7 and Table 8 show the results of the ADF tests and PP test for tourism arrivals and poverty in Ecuador. Both unit root tests consider the order of lagged values through two information criteria in order to remove any serial correlation (the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criteria (SBIC)). According to Maddala and Kim (1998), the powers of these tests are sensitive to the number of lags used. The optimal lag structure was set at 1 for poverty and 3 for tourism arrivals. In level form, both variables are nonstationary for all equations. The test statistics from the ADF and PP tests are smaller than the respective critical values. We cannot, however, reject the null hypothesis that tourism arrivals and poverty demonstrate persistent trends of the past. These results confirm the assertions made by Raj and Slottje (1997), in that a poverty indicator is consistent with unit root hypothesis when the alternative is  $I(0)$ . On the other hand, when differenced, the null hypothesis of nonstationarity

with a drift can be rejected at the 1% level of significance for both variables. However, the null hypothesis for nonstationary with a trend cannot be rejected. The results from the PP tests with or without a trend for both variables indicate that the variables are only stationary in first differences and I(1).

Table 7. ADF Unit Root Tests: Tourism Arrivals and Poverty

ADF Test	Variables	
	$Y_{sen}$	$X_{tour}$
With a Drift and Constant/Levels	-1.406(1)	0.318(3)
With a Trend and Constant/Levels	-2.238(1)	-1.034(3)
With a Drift and Constant/1st Difference	-2.492(1)**	-1.534(3)***
With a Trend and Constant/1st Difference	-2.331(1)	-1.663(3)

Notes: \*\* and \*\*\* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 5% and 10% respectively. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

Table 8. PP Unit Root Tests: Tourism Arrivals and Poverty

PP Test	Variables	
	$Y_{sen}$	$X_{tour-arrivals}$
Constant without Trend\Levels	-1.528(1)	0.393(3)
Constant with Trend\Levels	-2.372(1)	0.991(3)
Constant without Trend\1st Difference	-4.170(1)*	-5.554(3)*
Constant with Trend\1st Difference	-4.111(1)*	-5.402(3)*

Notes: \*denotes the rejection of the unit root hypothesis at 1% based on the Newey-West method. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

In summary, tourism and poverty are nonstationary in levels for all the models, and stationary in first differences. This indicates that a “spurious regression” problem might exist. Such problem suggests that the model can only be tested with difference terms. Consequently, any transformation of the variables from level to first differences will prevent capturing any long run relationship between tourism and poverty. This problem, however, can be overcome by applying an error correction model. Nevertheless, a precondition for applying an error correction model is that a cointegrating relationship must exist between tourism and poverty. The next section presents the results of the cointegration test for tourism and poverty.

### *Cointegration: Tourism and Poverty*

Since tourism and poverty are integrated in the same order (I(1)), cointegration will only exist if the residuals from the Ordinary Least Square (OLS) regression between the tourism arrivals and poverty are I(0), in other words, stationary (Engle and Granger, 1987). First, we tried an equation including a drift (as suggested by the unit root tests) but the results were not significant. The logic behind including the drift was to try capturing the effects of dollarization in Ecuador after the year 2000. A second equation was tested by including a trend and the results were significant. Therefore, we built the following equation.

$$Y_{sen_t} = \alpha_t + \beta_1 X_{tour_t} + T_{trend} + \epsilon_t \quad (43)$$

Where  $Y_{sen_t}$  represents poverty,  $X_{tour_t}$  represents tourism, and  $T_{trend}$  represent a trend as suggested by the PP Tests from the previous section. The results from the OLS regression for tourism arrivals on poverty are:

$$Y_{sen_t} = 3.92 - .29X_{tour_t} + .07T_{trend} + \epsilon_t \quad (44)$$

Note: t value for  $\alpha_t = 2.05$  ( $p < .10$ ), t value for  $X_{tour_t} = -1.79$  ( $p < .10$ ), t value for  $T_{trend} = -1.16$  ( $p > .10$ )

The complete results for the equation above are presented in Table 9. Also, the diagnostic test for autocorrelation was performed and the result for the Durbin Watson test is also presented in Table 9. However, before any inference of the impact of tourism and poverty is made, the residuals from such equation must be calculated and tested for stationary.



Table 9. Tourism and Poverty Cointegration Test

Granger Two Step Cointegration				
Dependent Variable			t-	
$Y_{sen}$	Coefficient	Std. Error	statistic	Probability
$X_{tour}$	-0.29	0.162	-1.79	0.09
$T_{trend}$	.01	.009	1.16	0.26
$B_{constant}$	3.92	2.05	1.91	0.07
			F(2,15)	
	$R^2 = .45$		= 6.14(.01)	
	Adjusted $R^2 = .37$		DW = 1.38	

Note: DW=Durbin Watson

The ADF and PP unit root tests on the residuals were performed without a constant or trend, with a constant, and with a trend. According to Maddala and Kim (1998), the powers of these tests are sensitive to the number of lags used. The optimal lag structure was determined by the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criterion (SBIC), and was set at 3. The residuals from the regression of tourism arrivals on poverty are presented on Table 10, the ADF tests in Table 11, and the PP tests in Table 12. The results of the ADF and PP tests without a constant and trend indicated that residuals were  $I(0)$  and stationary at the 5% level ( $t=-3.023$ ,  $p<.05$  and  $t=-3.034$ ,  $p<.05$ , respectively). The results of the ADF and PP Unit Root Tests with a constant and 3 lags indicated that the residuals are  $I(0)$  ( $t=-2.77$ ,  $P<.05$  and  $t=2.94$ ,  $P<.05$ ). Similarly, when we remove the constant and trend and apply the procedure with three lags, the residual turn out to be stationary at the 5% stationary level. However, when the two tests were carried out with a trend and 3 lags the results indicate that the residual have a unit root

( $t=-2.54, p>.10$  and  $t=2.814, p>.10$ ). The results from the ADF and PP test suggest that there is evidence to support that the residuals are stationary, meaning that there is a cointegration relationship between tourism and poverty. The error correction model for tourism and poverty is presented next.

Table 10. Calculated Residuals for Tourism Arrivals and Poverty

Calculated Residuals for $Y_{sen} = f(X_{tour}, B_{constant})$			
Year	Residual	Year	Residual
1988	-0.0253118	1997	-0.0469157
1989	-0.0276399	1998	0.0311419
1990	0.0342082	1999	0.0284531
1991	0.0005965	2000	-0.0747336
1992	0.0257356	2001	-0.0319306
1993	0.0317154	2002	-0.0421516
1994	0.0499166	2003	0.0103057
1995	0.0549219	2004	-0.0142227
1996	0.0099947	2005	-0.0140838

Table 11. ADF Unit Root Test for residuals of Tourism and Poverty

Augmented Dickey Fuller (ADF) Unit Root Test for Residuals

Variable	<i>Test Statistic</i>
Residuals(3)	-3.023**
Residuals, Constant, Lags(3)	-2.77***
Residuals, Trend, Lags(3)	-2.548

Notes: \*\* and \*\*\* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 5% and 10%. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

Table 12. PP Unit Root Test for residuals of Tourism and Poverty

Phillips Perron (PP) Unit Root Test for Residuals

Variable	<i>Test Statistic</i>
Residuals (3)	-3.034**
Residuals, Constant, Lags(3)	-2.943***
Residuals, Trend, Lags(3)	-2.814

Notes: \*\* and \*\*\*denotes the rejection of the unit root hypothesis at the 5% and 10% respectively. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

*Error Correction Model*

Now that a cointegration relationship between tourism and poverty has been established, the next step is to test the two Error Correction Models presented in the methodology (Single Equation Error Correction Model and Autodistributed Lag Model). According to the Engle and Granger (1987) methodology for the Single Equation Error Correction Model, if tourism arrivals

and poverty are co-integrated, an error-correction representation may exist and take form in the following equation:

$$\Delta Y_{sen_t} = \alpha_t + \beta_1 \Delta X_{tour_t} + \rho \mu_{t-1} + T_{trend} + \varepsilon_t \quad (45)$$

Where  $\Delta Y_{sen_t}$  and  $\Delta X_{tour_t}$  represent a first difference operator for poverty and tourism arrivals,  $\mu_{t-1}$  is the error-correction term (which are the residual series of the cointegration equation from the previous section), and  $T_{trend}$  is a time trend (as suggested by the unit root tests results of the residuals). Based on previous studies about tourism and poverty (Rivera, Hara & Croes, 2008), we expect that in the short term, tourism arrivals ( $\Delta X_{tour_t}$ ) will be significant and have a negative sign, in other words reduce poverty. As for the coefficients of  $\mu_{t-1}$ , it is expected to be negative and no greater than one. The negative sign of the residual term implies a pull mechanism to adjust the system. The results of the Error Correction equation are:

$$\Delta Y_{sen_t} = 0.11\alpha_t - .07\beta_1 \Delta X_{tour_t} - .68\mu_{t-1} - .11T_{trend} + \varepsilon_t \quad (46)$$

$\alpha_t$  (t=.58, p>.10)     $\mu_{t-1}$  (t=-2.88, p<.05)     $\Delta X_{tour_t}$  (t=-0.54, p>.10)     $T_{trend}$  (t=-.66, p<.10)  
F(3.13)=3.11, p<.10; DW=1.88; R-squared=.41    Adjusted R-squared=.28

The equation above indicates that tourism arrivals does not have short term impact on poverty; however the long term adjustment speed represented by the residuals is significant, suggesting that any long term effects will adjust to a rate of 68% per year. In order to corroborate such results, an Autoregressive Distributed Lag Model (ADL) (Hendry, Srba and Yeo, 1978) was also performed. The ADL error correction equation to test the effects of tourism on poverty is:

$$\Delta Y_{sen_t} = \alpha_t + \Delta\beta_0 X_{tour_t} + \beta_2 X_{tour_{t-1}} + \gamma Y_{sen_{t-1}} + \omega_t \quad (47)$$

To obtain the short term effects, long term effects, and the adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{sen_t} = \alpha_t + \beta_0 \Delta X_{tour_t} + \gamma [Y_{sen_{t-1}} - \beta_3 X_{tour_{t-1}}] + T_{trend} + \omega_t \quad (48)$$

where  $\beta_0 \Delta X_{tour_{arrivals_{t-1}}}$  is a first difference operator that represents the short term impact of tourism on poverty,  $\beta_3 X_{tour_{t-1}} = \frac{\beta_2 X_{tour_{t-1}}}{\gamma Y_{sen_{t-1}}}$  and captures the long term effect,  $\gamma$  captures the rate at which the model moves towards equilibrium, and  $T_{trend}$  is a trend.

This equation provides the long and short term elasticities for tourism arrivals and the adjustment speed in which the system is restored to equilibrium. The results from the ADL error correction model for tourism and poverty is:

$$\Delta Y_{sen_t} = 4.85\alpha_t - .159\Delta X_{tour_t} - .37X_{tour_{t-1}} - .684Y_{sen_{t-1}} + .015T_{trend} + \omega_t \quad (49)$$

Note:

$\alpha_1$  (t=1.88, p<.10),  $X_{tour_{arrivals_{t-1}}}$  (t=-1.80, p<.10),  $\gamma$  (t=-2.84, p<.05),  $\Delta X_{tour_{arrivals_t}}$  (t=-0.96, p>.10) T (t=-1.38, p>.10)  
F(3.13)=2.49, p<.10; DW=2.08; R-squared=.48 Adjusted R-squared=.27

To obtain the long term effects and adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{sen_t} = 4.85\alpha_t - .159\Delta X_{tour_t} - .68\gamma[Y_{sen_{t-1}} - .54X_{tour_{t-1}}] + .015T_{trend} + \omega_t \quad (50)$$

where the short term effect is equal to  $-.16\Delta X_{tour_{t-1}}$ ; the long term effects is  $-.54X_{tour_{t-1}} = \frac{.37X_{tour_{t-1}}}{-.684Y_{sen_{t-1}}}$ ; and the rate of adjustment  $\gamma$  is equal to  $-.68$ . The results therefore posit that there is a

long-run relationship between tourism and poverty and they have the correct sign. This means that a 1% increase in tourism arrivals reduces poverty by .54% in the long term for the case of Ecuador. Moreover, the correction term is significant and it implies that in the long run poverty is reduced at a rate of 68% per period. As presented in Table 14, the total effects of tourism on poverty in period  $t$  are complete by period  $t+3$ , meaning that it takes a total of three additional years to adjust towards equilibrium. It is important to note that the short term coefficient of tourism is not significant, confirming the results obtained from the Engle Granger (1987) model.

The complete results and diagnostic tests are presented in Table 13. The results of the Durbin Watson test ( $DW=2.08$ ) and the Bruesch-Godfrey test ( $BG=.029, p>.01$ ) indicate that the null hypothesis of no serial correlation can be rejected. In addition, the results of the Bruesch-Pagan test for heteroskedasticity indicate that the null hypothesis of no heteroskedasticity is accepted ( $BP=.92, p<.001$ ).

Based on the findings presented above, it might be plausible to consider tourism as a pro-poor long term development strategy in Ecuador. However, such assertion cannot be made until the direction of causality is established. In the next section we investigate the causal relationship between tourism and poverty and present the results from the Granger causality tests between tourism and poverty.

Table 13. Single equation ADL Error Correction Model for Tourism and Poverty

Error Correction Model from Autoregressive Distributed Lag Model					
Dependent Variable		Coefficient	Std. Error	t-statistic	Probability
$\Delta Y_{sen}$					
$\Delta X_{tour}$		-0.159	0.17	-0.96	0.35
$Y_{sen\ t-1}$		-0.684	0.24	-2.84	0.02
$X_{tour\ t-1}$		-0.370	0.21	-1.80	0.09
Trend		0.015	0.01	-1.38	0.19
$B_{constant}$		4.851	2.61	1.85	0.08

Notes:

Notes:			
$R^2 =$	.45	$F(3,13) =$	2.49 (0.09)
Adjusted $R^2 =$	.27	DW =	2.08
BG =	.029	BP =	.92

Note: DW=Durbin Watson, BG-Bruesch Godfrey, BP=Bruesch Pagan

Table 14. Adjustment towards equilibrium: Tourism and Poverty

Poverty will decrease a total of .54 points, spread over future years at a rate of 68% per year		
Poverty will decrease→	-0.37	at t
Then another→	-0.12	at t+1
Then another →	-0.04	at t+2
Then another →	-0.01	at t+3
no effect at →	0.00	at t+4

### *Granger Causality*

The last issue to be addressed is how the long run relationship between tourism and poverty is causally related. The evidence of a cointegrating relationship indicates that the tourism and poverty move together over time, however, the question of whether tourism actually drives poverty or poverty drives tourism arrivals remains open. Granger (1981) indicated that a variable (i.e., tourism) causes another variable (i.e., poverty) with respect to a model that includes both. In other words, is the current level of poverty better explained by using past values of tourism than by not doing so? Or, is the current level of tourism better explained by using past values of poverty than by not doing so?

As suggested by Enders (1995), the relative performance of the Granger Causality tests is sensible to the lag length selection. According to the SBIC criteria, the optimal lag length for the causality tests between tourism and poverty was set at 3. In Table 15 the results from the Granger tests are presented. These indicate that the null hypothesis “tourism does not Granger Cause poverty” can be rejected at the 1% level, evidencing that tourism Granger Cause poverty. The



results also indicate that the null hypothesis “poverty does not Granger Cause tourism” cannot be rejected at the 1% level, concluding that a one way relationship exists running from tourism to poverty.

Table 15. Granger Causality: Tourism and Poverty

Granger Causality Test Analysis		
Pairwise Granger Causality Test Analysis (Lag 3)		
Null Hypothesis:	F-Statistic	Probability
$Y_{sen}$ does not Granger Cause $X_{tour}$	2.442	0.1180
$X_{tour}$ does not Granger Cause $Y_{sen}$	19.273*	0.0000

### *Conclusion*

In conclusion, we have found that a long run relationship exists between tourism and poverty. This relationship was not only significant, but the magnitude of 1% increase in tourism results in .54 % reduction of the Sen Poverty Index. The error correction term was also significant and smaller than one, suggesting that the system is restored back to equilibrium at a rate of 68% per period and completely phased out by period  $t+3$ . However, in the short term, tourism does not have an impact in reducing poverty. This suggests that an opportunity exists to develop a tourism policy that allows for greater participation from marginalized communities in order to combat poverty. Moreover, the support of tourism as a development vehicle for poverty reduction is confirmed by the existence of tourism poverty nexus for Ecuador in several ways. In the next section the relationship between economic growth and poverty is presented.

## **Economic Growth and Poverty**

The methodological steps presented in the previous section were repeated in this section. The main objective of this section is to examine the relationship between economic growth and poverty reduction. The research questions that guide and frame the proposed model are:

Does a long run relationship exist between economic growth and poverty? If it does, what is the magnitude of the effect of economic growth on poverty? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The variables for gauging economic growth and poverty are Gross Domestic Product and the Sen Poverty Index. The first procedural test was to investigate the existence of unit root test in the data by employing the ADF and PP tests.

### *Unit Root Tests*

Table 16 and Table 17 show the results of the ADF tests and PP test for economic growth and poverty in Ecuador. Both unit root tests consider the order of lagged values through two information criteria in order to remove any serial correlation (the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criteria (SBIC)). According to Maddala and Kim (1998), the powers of these tests are sensitive to the number of lags used. The optimal lag structure was set at 1 for poverty and 3 for economic growth. The results of the ADF unit root test for economic growth and poverty demonstrate that the null hypothesis of nonstationarity cannot be rejected in levels with either a drift or a trend. For the model with a drift in first

differences, the ADF test indicates that both economic growth and poverty are stationary at the 1% and 5% level respectively. The same however cannot be said to the model with a trend. On the other hand, the results of the PP test with or without a trend in levels indicate the presence of a unit root. This however is resolved when differenced. Both models, with or without a trend are stationary at the 1% and 5% for poverty and economic growth respectively. The results from the both unit roots tests indicate that economic growth and poverty are stationary and I(1). The next section presents the results of the cointegration test for economic growth and poverty.

Table 16. ADF Unit Root Tests: Economic Growth and Poverty

ADF Test	Variables	
	$Y_{sen}$	$X_{growth\ gdp}$
With a Drift and Constant/Levels	-1.406(1)	0.698(3)
With a Trend and Constant/Levels	-2.238(1)	-1.544(3)
With a Drift and Constant/1st Difference	-2.492(1)**	-2.729(3)*
With a Trend and Constant/1st Difference	-2.331(1)	-2.848(3)

Notes: \* and \*\* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 1% and 5% respectively. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

Table 17. PP Unit Root Tests: Economic Growth and Poverty

PP Test	Variables	
	$Y_{sen}$	$X_{growth\ gdp}$
Constant without Trend\Levels	-1.528(1)	1.064(3)
Constant with Trend\Levels	-2.372(1)	1.163(3)
Constant without Trend\1st Difference	-4.170(1)*	-3.066(3)**
Constant with Trend\1st Difference	-4.111(1)*	-3.154(3)**

Notes: \* and \*\* denotes the rejection of the unit root hypothesis critical values at 1% and 5% based on the Newey-West method. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

*Cointegration: Economic Growth and Poverty*

Since economic growth and poverty are integrated in the same order (I (1)), cointegration only exists if the residuals from the ordinary least square regression (OLS) are I (0), in other words, stationary (Engle and Granger, 1987). First, we tried two equations, one with a drift and one with trend but neither result were significant. Finally, we tried a model with both and determine that the model was significant. This implies that the model should include a dummy and a trend. The next step to confirm if a long term relationship exists between economic growth and poverty implies regressing economic growth on poverty with the following equation.

$$Y_{sen_t} = \alpha_t + \beta_1 X_{growth\ gdp_t} + T_{trend} + \Phi_{dummy} + \epsilon_t \quad (51)$$

Where  $Y_{sen_t}$  represents poverty,  $X_{growth\ gdp_t}$  represents economic growth,  $T_{trend}$  represent a trend, and  $\Phi_{dummy}$  represents a dummy to capture the effect of dollarization in Ecuador. The results from the OLS regression of economic growth on poverty are:

$$Y_{sen_t} = \alpha_t - .69X_{growth\ gdp_t} - .013T_{trend} - .024\Phi_{dummy} + \epsilon_t \quad (52)$$

Note: t value for  $\alpha_t = 2.81$  ( $p < .05$ ), t value for  $X_{growth\ gdp_t} = -2.77$  ( $p < .05$ ),

t value for  $T_{trend} = -1.89$  ( $p < .10$ ), t value for  $\Phi_{dummy} = .77$  ( $p > .10$ )

The complete results are presented in Table 18. The diagnostic test for autocorrelation was performed, the results for the Durbin Watson test is also presented in Table 18. However, before any inference of the impact of economic growth and poverty is made, the residuals from such equation must be calculated and tested for stationary.

Table 18. Economic Growth and Poverty Cointegration Test

Granger Two Step Cointegration				
Dependent Variable $Y_{sen}$	Coefficient	Std. Error	t-statistic	Probability
$X_{growth\ gdp}$	-.691	2.49	-2.77	.015
$T_{trend}$	-.013	.006	1.89	.08
$\Phi_{dummy}$	-.024	.031	-.77	.45
$B_{constant}$	16.303	5.80	2.81	.014
$R^2 = .57$			$F(3,14) = 6.23(.006)$	
Adjusted $R^2 = .48$			DW = 1.50	

Note: Note:  $\Phi_{dummy}$  is shift dummy (which takes the value of 1 from 2000 to 2005, and 0 in all other periods).  $T_{trend}$  is a time trend (which takes a value of 1 to 18 from 1988 to 2005). DW=Durbin Watson

The ADF and PP tests on the residuals were also performed without a constant or trend, with a constant, and with a trend. The optimal lag structure was determined by the Akaike

Information Criteria (AIC) and the Schwartz Bayesian Information Criterion (SBIC), and was set at 3 lags. The residuals from the regression of economic growth on poverty are presented on Table 19, the ADF tests in Table 20, and the PP tests in Table 21. The results of the ADF and PP tests without a constant and trend indicated that residuals were  $I(0)$  and stationary at the 5% level ( $t=-3.137, p<.05$  and  $t=-3.175, p<.05$ , respectively). The results of the ADF and PP Unit Root Tests with a constant and 3 lags indicated that the residuals are  $I(0)$  ( $t=-3.07, p<.05$  and  $t=3.092, p<.05$ ). However, when the two tests were carried out with a trend and 3 lags the results indicate that the residual are not stationary ( $t=-2.99, p>.10$  and  $t=-2.84, p>.10$ .) The results from the ADF and PP test suggests that there is evidence to support that residual are stationary, meaning that the there is a cointegration relationship between economic growth and poverty. The error correction model for economic growth and poverty is presented next.

Table 19. Calculated Residuals for Economic Growth and Poverty

Calculated Residuals for			
$Y_{sen} = f(X_{\text{growth gdp}}, \mu_{\text{trend}}, \Phi_{\text{dummy}}, B_{\text{constant}})$			
Year	Residual	Year	Residual
1988	-0.029314	1997	-0.0447433
1989	-0.0147414	1998	0.0535377
1990	0.0373838	1999	0.0203752
1991	0.0342182	2000	0.0235403
1992	0.0344241	2001	0.0053136
1993	-0.0127128	2002	-0.046107
1994	0.013884	2003	-.0029892
1995	-0.0552709	2004	-.0009462
1996	-0.0370407	2005	.0211885

Table 20. ADF Unit Root Test for residuals of Economic Growth and Poverty

Augmented Dickey Fuller (ADF) Unit Root Test for Residuals

$$Y_{sen} = f(X_{\text{growth gdp}}, \mu_{\text{trend}}, \Phi_{\text{dummy}}, B_{\text{constant}})$$

Variable	Test Statistic
Residuals	3.137**
Residuals, Constant, Lags(3)	-3.07(3)**
Residuals, Trend, Lags(3)	-2.84(3)

Notes: \* and \*\* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 1% and 5%. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

Table 21. PP Unit Root Test for residuals of Economic Growth and Poverty

Phillips Perron (PP) Unit Root Test for Residuals

$$Y_{sen} = f(X_{growth\ gdp}, \mu_{trend}, \Phi_{dummy}, B_{constant})$$


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Variable	<i>Test Statistic</i>
Residuals	-3.175**
Residuals, Constant, Lags(3)	-3.092(3)**
Residuals, Trend, Lags(3)	-2.995(3)

Notes: \*\* denotes the rejection of the unit root hypothesis at 5%. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

### *Error Correction Model*

Now that a cointegration relationship between economic growth and poverty has been established, the next step is to test the Error Correction Models presented in the methodology (Single Equation Error Correction Model and Autodistributed Lag Model). According to the Engle and Granger (1987) methodology for the Single Equation Error Correction Model, if economic growth and poverty are co-integrated, an error-correction representation may exist and take form in the following equation:

$$\Delta Y_{sen_t} = \alpha_t + \beta_1 \Delta X_{growth\ gdp_t} + \rho_1 \mu_{t-1} + \varepsilon_t \quad (53)$$

Where  $\Delta Y_{sen_t}$  and  $\Delta X_{growth\ gdp_t}$  represent a first difference operator for poverty and economic growth, and  $\mu_{t-1}$  is the error-correction term (which are the residual series of the cointegration equation from the previous section). Based on previous studies about economic growth and poverty (Dollar and Kraay, 2004; Romer and Gugerty, 1997), we expect that in the short term, economic growth ( $\Delta X_{growth\ gdp_t}$ ) will be significant and have a negative sign, in



other words reduce poverty. As for the coefficients of  $\mu_{t-1}$ , it is expected to be negative and no greater than one. The negative sign of the residual term implies a pull mechanism to adjust the system. The results of the Error Correction equation are:

$$\Delta Y_{sent_t} = .002\alpha_t - .80\Delta X_{growth\ gdp_t} - .68\mu_{t-1} + \varepsilon_t \quad (54)$$

Note:  $\alpha_t$  (t=1.18, p>.10)  $\mu_{t-1}$  (t=-3.01, p<.05)  $\Delta X_{growth\ gdp_t}$  (t=-2.36, p<.05)  
 F(2,14)=5.96, p<.05; DW=2.17; R-squared=.45 Adjusted R-squared=.37 DW=1.94

The equation above indicates that economic growth does have a significant short term impact on poverty. For example, a one percent increase in economic growth triggers a .80% reduction in poverty. In addition, the long term adjustment speed represented by the residuals is also significant; suggesting that any long term effects will adjust to a rate of 68% per year. In order to corroborate such results, an Autoregressive Distributed Lag Model (ADL) (Hendry, Srba and Yeo, 1978) was also performed. The ADL error correction equation to test the effects of economic growth on poverty is:

$$\Delta Y_{sent_t} = \alpha_t + \Delta\beta_0 X_{growth\ gdp_t} + \beta_2 X_{growth\ gdp_{t-1}} + \gamma Y_{sent_{t-1}} + \omega_t \quad (55)$$

To obtain the short term effects, long term effects, and the adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{sent_t} = \alpha_t + \beta_0 \Delta X_{growth\ gdp_t} + \gamma [Y_{sent_{t-1}} - \beta_3 X_{growth\ gdp_{t-1}}] + \omega_t \quad (56)$$

where  $\beta_0 \Delta X_{growth\ gdp_t}$  is a first difference operator that represents the short term impact of economic growth on poverty,  $\beta_3 X_{growth\ gdp_{t-1}} = \frac{\beta_2 X_{growth\ gdp_{t-1}}}{\gamma Y_{sen_{t-1}}}$  and captures the long term effect of tourism on poverty, and  $\gamma$  captures the rate at which the model moves towards equilibrium. The results from the ADL error correction model for economic growth and poverty are:

$$\Delta Y_{sen_t} = 2.66\alpha_t - .613\Delta X_{growth\ gdp_t} - .173X_{growth\ gdp_{t-1}} - .7Y_{sen_{t-1}} + \omega_t \quad (57)$$

Note:  $\alpha_1(t=2.25, p<.10)$ ,  $X_{gdp\ growth\ t-1}(t=-1.87, p<.10)$ ,  $\gamma Y_{sen_{t-1}}(t=-2.98, p<.05)$ ,  $X_{growth\ gdp_{t-1}}(t=-2.05, p<.10)$   
 $F(3.13)=3.04, p<.10$ ;  $DW=2.17$ ;  $R-squared=.46$   $Adjusted\ R-squared=.34$

To obtain the long term effects and adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{sen_t} = 2.66\alpha_t - .613\Delta X_{growth\ gdp_t} - .70\gamma[Y_{sen_{t-1}} - .24X_{growth\ gdp_{t-1}}] + \omega_t \quad (58)$$

where the short term effect is equal to  $-.613\Delta X_{growth\ gdp_{t-1}}$ ; the long term effects is

$-.24X_{growth\ gdp_{t-1}} = \frac{.173X_{growth\ gdp}}{-.70Y_{sen_{t-1}}}$ ; and the rate of adjustment is  $-.70\gamma$ . The results therefore

posit that there is a long-run relationship between economic growth and poverty and they have the correct sign. This means that a 1% increase in economic growth reduces poverty by .24% in the long term for the case of Ecuador and .61% in the short term. The correction term is also significant thus implying that in the long run poverty is reduced at a rate of 70% per period. As presented in Table 23, the total effects of economic growth on poverty in period  $t$  are complete by period  $t+2$ , meaning that it only takes two additional years for the system to adjust towards

equilibrium. It is important to note that short term coefficient of economic growth is also significant, confirming the results obtained from the Engle Granger (1987) model. In the case of Ecuador, it can be observed that immediate effects on reducing poverty are channeled directly through economic growth and not tourism, as the effects of tourism on poverty are not direct, but instead are channeled through economic growth.

The complete results and diagnostic tests for the regression are presented in Table 22. The results of the Durbin Watson test ( $DW=2.17$ ) and the Bruesch-Godfrey test ( $BG=.431$   $p>.01$ ) indicate that the null hypothesis of no serial correlation can be rejected. In addition, the results of the Bruesch-Pagan test for heteroskedasticity indicate that the null hypothesis of no heteroskedasticity is accepted ( $BP=.306$ ,  $p<.001$ ).

Table 22. Single equation ADL Error Correction Model for Economic Growth and Poverty

Error Correction Model from Autoregressive Distributed Lag Model				
Dependent Variable				
$\Delta Y_{sen}$	Coefficient	Std. Error	t-statistic	Probability
$\Delta X_{growth-gdp}$	-0.613	0.299	-2.050	0.060
$Y_{sen\ t-1}$	-0.707	0.237	-2.980	0.010
$X_{growth-gdp\ t-1}$	-0.173	0.092	-1.870	0.080
$B_{constant}$	4.210	2.250	1.910	0.070

Notes:

$R^2 = .46$	$F(3,13) = 3.04 (0.06)$
Adjusted $R^2 = .34$	DW = 2.17
BG = .431	BP = .306

Note: DW=Durbin Watson, BG-Breusch Godfrey, BP=Breusch Pagan

Table 23. Adjustment towards equilibrium: Economic Growth and Poverty

Poverty will decrease a total of .24 points, spread over future years at a rate of 70% per year		
Poverty will decrease→	-0.17	at t
Then another→	-0.05	at t+1
Then another →	-0.01	at t+2
no effect at →	0.00	at t+3

The results from the error correction model suggest that the fight against poverty in Ecuador benefits from improvements in the overall economic conditions at a national level. These findings are aligned with those of Dollar and Kraay (2004) and Rodriguez and Roderick (2000).; and provides empirical evidence to contend “hollow arguments” against economic growth not been “pro poor”. The finding from this dissertation clearly indicate that economic

growth leads to rising incomes, a reduction of the number of poor, lower income inequalities and a narrower income gap; captured by the Sen Poverty Index. Thus asserting that in the case of Ecuador, economic growth is “pro poor”.

### *Granger Causality*

The last important issue to be addressed is how the long run relationship between economic growth and poverty is causally related. The evidence of a cointegrating relationship indicates that the economic growth and poverty move together over time, however, the questions of whether economic growth actually drives poverty or poverty drives economic growth remains open. Granger (1987) indicated that a variable (i.e., economic growth) causes another variable (i.e., poverty) with respect to a model that includes both. In other words, is the current level of poverty better explained by using past values of economic growth than by not doing so? Or, is the current level of economic growth better explained by using past values of poverty than by not doing so?

As suggested by Enders (1995), the relative performance of the Granger Causality tests is sensible to the lag length selection. According to the SBIC criteria, the optimal lag length for the causality tests between economic growth and poverty was set at 3. Table 24 presents the results of the Granger tests. These indicate that the null hypothesis “economic growth does not Granger cause poverty” can be rejected at the 1% level, evidencing that economic growth “Granger Causes” poverty. The results also indicate that the null hypothesis that poverty does not “Granger Cause” economic growth cannot be rejected at the 1% level, thus concluding that a one way relationship exists running from economic growth to poverty and not the other way around.

Table 24. Granger Causality: Economic Growth and Poverty

Granger Causality Test Analysis		
Pairwise Granger Causality Test Analysis (Lag 3)		
Null Hypothesis:	F-Statistic	Probability
$Y_{sen}$ does not Granger Cause $X_{growth\ gdp}$	.264	0.670
$X_{growth\ gdp\ capita}$ does not Granger Cause $Y_{sen}$	10.05	0.002

### *Conclusion*

In conclusion, we have found that a long run causal relationship exists between economic growth and poverty. This relationship was not only significant, but the magnitude of 1% increase in economic growth results in .21 % reduction of the Sen Poverty Index in the long run. The error correction term was also significant and smaller than one, suggesting that the system is restored back to equilibrium at a rate of 70% per period and completely phased out by period  $t+3$ . As for the results from the Single Equation Error Correction Model, the adjustment speed is 68%, almost the same as prior results. Moreover, in the short term, economic growth has the virtue reducing poverty. This suggests that an opportunity exists to develop pro-growth policies in order to combat poverty in Ecuador. In the next section the relationship between tourism and human development is presented.

## **Tourism and Human Development**

The steps presented in the previous section were repeated in this section. The main objective of this section is to examine the relationship between tourism and human development. The research questions that guide and frame the proposed model are:

Does a long run relationship exist between tourism and human development? If it does, what is the magnitude of the effect of tourism on human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The variables for gauging tourism and human development are tourism arrivals and the Human Development Index. The first procedural test was to investigate the existence of unit root test in the data by employing the ADF and PP tests.

### *Unit Root Tests*

Table 25 and Table 26 show the results of the ADF tests and PP test for tourism and human development in Ecuador. In level form and with a constant, the results of the AD and PP tests indicate that human development is stationary and  $I(0)$ . Meanwhile, under the same conditions, tourism arrivals contain a unit root. The results of the stationarity test in levels and with a trend yield the same results. However, when differenced, both variables are found to be stationary with a trend and a constant. Based on the results of the PP Unit Root Test, the null hypothesis of nonstationarity therefore can be rejected at the 1% level of significance for poverty and for tourism. Based on such finding we conclude that all, tourism and human development are  $I(1)$  and proceed to test if both variables are cointegrated.

Table 25. ADF Unit Root Tests: Tourism and Human Development

ADF Test	Variables	
	$Y_{hdi}$	$X_{tour-arrivals}$
With a Drift and Constant/Levels	-3.300(4)*	0.318(3)
With a Trend and Constant/Levels	-3.074(4)	-1.034(3)
With a Drift and Constant/1st Difference	-2.429(4)*	-1.534(3)***
With a Trend and Constant/1st Difference	-1.352(4)	-1.663(3)

Notes: \* and \*\*\* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 1% and 10% respectively. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

Table 26. PP Unit Root Tests: Tourism and Human Development

PP Test	Variables	
	$Y_{hdi}$	$X_{tour-arrivals}$
Constant without Trend\Levels	-3.676(4)*	0.393(3)
Constant with Trend\Levels	-3.936(4)**	0.991(3)
Constant without Trend\1st Difference	-8.177(4)*	-5.554(3)*
Constant with Trend\1st Difference	-8.878(4)**	-5.402(3)*

Notes: \* and \*\* denotes the rejection of the unit root hypothesis critical values at 1% and 5% based on the Newey-West method. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.



### *Cointegration: Tourism and Human Development*

Since tourism and human development are integrated in the same order (I (1)), cointegration only exists if the residuals from the Ordinary Least Square (OLS) regression are I (0), in other words, stationary (Engle and Granger, 1984). The next step is to confirm if a long term relationship exists between tourism and human development. First, we tried two equations, one with a drift and one with trend but neither result were significant. Therefore we proceeded with a more parsimonious model with the following equation.

$$Y_{hdi_t} = \alpha_t + \beta_1 X_{tour_t} + \epsilon_t \quad (59)$$

Where  $Y_{hdi_t}$  represents human development and,  $X_{tour_t}$  represents tourism arrivals. The results from the OLS regression for tourism arrivals on human development are:

$$Y_{hdi_t} = -.290 - .078X_{tour_t} + \epsilon_t \quad (60)$$

Note: t value for  $\alpha_t = -.650$  ( $p > .10$ ), t value for  $X_{tour_t} = -2.32$  ( $p < .01$ )

The results from the OLS regression of tourism arrivals on human development are presented in Table 27. In addition, diagnostic test for autocorrelation were performed, the results for the Durbin Watson test is also presented in Table 27. However, before any inference of the impact of tourism on human development is made, the residuals from such equation must be calculated and tested for stationary.

Table 27. Tourism and Human Development Cointegration Test

Granger Two Step Cointegration				
Dependent Variable			t-	
$Y_{hdi}$	Coefficient	Std. Error	statistic	Probability
$X_{tour}$	.078	.033	2.32	0.003
$B_{constant}$	-.290	.443	-.650	.523
			F(1,16)	
	$R^2 = 0.2511$		=	6.76 (0.03)
	Adjusted $R^2 = 0.2043$		DW =	1.85

The ADF and PP tests on the residuals were also performed. According to Maddala and Kim (1998), the powers of these tests are sensitive to the number of lags used. The optimal lag structure was determined by the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criterion (SBIC), and was set at 4. The residuals from the regression of tourism arrivals on human development are presented on Table 28, the ADF tests in Table 29, and the PP tests in Table 30. The results of the ADF and PP tests without a constant and trend indicated that residuals were stationary at the 1% level ( $t=-4.0$  and  $t=-4.002$  respectively). However, the results of the ADF with a constant, a trend, and 4 lags indicated that the residuals are not stationary. On the other hand, the PP test with a constant, a trend, and four lags indicate that the residual are stationary.

Table 28. Calculated Residuals for Tourism Arrivals and Human Development

Calculated Residuals for $Y_{hdi} = f(X_{tour})$			
Year	Residual		
1988	-0.0517642	1997	0.0072875
1989	-0.0630141	1998	0.0349926
1990	0.0739291	1999	-0.0120705
1991	-0.0647158	2000	-0.0209928
1992	-0.0004546	2001	-0.0237183
1993	0.0533618	2002	-0.0246774
1994	0.0331961	2003	-0.0091273
1995	0.0496818	2004	-0.0088666
1996	0.0326364	2005	-0.0056836

Table 29. ADF Unit Root Test for residuals of Tourism and Human Development

Augmented Dickey Fuller (ADF) Unit Root Test for Residuals

Variable	Test Statistic
Residuals(4)	-4.0*
Residuals, Constant, Lags(4)	-1.40(4)
Residuals, Trend, Lags(4)	-2.981(4)

Notes: \*denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 1%. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

Table 30. PP Unit Root Test for residuals of Tourism and Human Development

Phillips Perron (PP) Unit Root Test for Residuals

Variable	<i>Test Statistic</i>
Residuals (4)	-4.002*
Residuals, Constant, Lags(4)	-4.001(4)*
Residuals, Trend, Lags(4)	-3.915(4)**

Notes: \*\* and \* denotes the rejection of the unit root hypothesis at the 1% and 5% respectively. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

#### *Error Correction Model*

Now that a cointegration relationship between tourism arrivals and human development has been established, the next step is to test the two Error Correction Models presented in the methodology (Single Equation Error Correction Model and Autodistributed Lag Model). According to the Engle and Granger (1987) methodology for the Single Equation Error Correction Model, if tourism arrivals and human development are co-integrated, an error-correction representation may exist and take form in the following equation:

$$\Delta Y_{hdi_t} = \alpha_{10} + \beta_1 \Delta X_{tour_t} + \rho_1 \mu_{t-1} + \varepsilon_{10} \quad (61)$$

Where  $\Delta Y_{hdi_t}$  and  $\Delta X_{tour_t}$  represent a first difference operator for human development and tourism,  $\mu_{t-1}$  is the error-correction term (which are the residual series of the cointegration equation.) Based on previous studies about tourism and human development (Tosun et al. 2003) we expect that in the short term, tourism arrivals ( $\Delta X_{tour arrivals_t}$ ) will be significant and have a positive sign, in other words improve human development. As for the coefficients of  $\mu_{t-1}$ , it is

expected to be negative and no greater than one. The negative sign of the residual term implies a pull mechanism to adjust the system. The results of the Error Correction equation are:

$$\Delta Y_{hdi_t} = .0003\alpha_t + .14\Delta X_{tour_t} - .95\mu_{t-1} + \varepsilon_t \quad (62)$$

Note:  $\alpha$  (t=.0003, p>.10)  $\alpha Res_{t-1}$  (t=-3.67, p<.01)  $\beta\Delta X_{tour}$  (t=0.93, p>.10)  
 $F(2,14)=8.5$ , p<.01; DW=2.08; R-squared=.55 Adjusted R-squared=.48

The equation above indicates that tourism arrivals does not have a significant short term impact on human development; however the long term adjustment speed represented by the residuals is significant, suggesting that any long term effects will adjust to a rate of 95% per year (almost immediately). In order to corroborate such results, an Autoregressive Distributed Lag Model (ADL) (Hendry, Srba and Yeo, 1978) was also performed. The ADL error correction equation to test the effects of tourism on human development is:

$$\Delta Y_{hdi_t} = \alpha_t + \beta_0 X_{tour_t} + \beta_2 X_{tour_{t-1}} + \gamma Y_{hdi_{t-1}} + \omega_t \quad (63)$$

To obtain the short term effects, long term effects, and the adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{hdi_t} = \alpha_t + \beta_0 \Delta X_{tour_t} + \gamma [Y_{hdi_{t-1}} - \beta_3 X_{tour_{t-1}}] + \Phi_{dummy} + \omega_t \quad (64)$$

where  $\beta_0 \Delta X_{tour_{t-1}}$  is a first difference operator that represents the short term impact of tourism on human development,  $\beta_3 X_{tour_{t-1}} = \frac{\beta_2 X_{tour_{t-1}}}{\gamma Y_{hdi_{t-1}}}$  and captures the long term effect of tourism arrivals on human development,  $\gamma$  captures the rate at which the model moves towards equilibrium, and  $\Phi_{dummy}$  is a dummy used to capture the effects of dollarization.

In summary, this equation provides the long and short term elasticities for tourism and the adjustment speed in which the system is restored to equilibrium. The results from the ADL error correction model for tourism and human development is:

$$\Delta Y_{hdi_t} = -2.11\alpha_t + .316\Delta X_{tour_t} + .23X_{tour_{t-1}} - 1.3\gamma_{hdi_{t-1}} - 0.11\Phi_{dummy} + \omega_t \quad (65)$$

Note:  $\alpha_1$ (t=2.31, p<.05),  $X_{tour\ arrivals\ t-1}$ (t=2.99, p<.10),  $\gamma$  (t=-5.05, p<.01),  $\Delta X_{tour\ arrivals\ t}$ (t=2.19, p<.05)  $\Phi_{dummy}$  (t=2.65, p<.05) F(4.12)=7.81, p<.05; DW=2.21; R-squared=.72 Adjusted R-squared=.62

To obtain the long term effects and adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{hdi_t} = -2.11\alpha_t + .316\Delta X_{tour_t} - .130\gamma[Y_{sent_{t-1}} - .18X_{tour_{t-1}}] - 0.11\Phi_{dummy} + \omega_t \quad (66)$$

where the short term effect is equal to  $.316\Delta X_{tour_{t-1}}$ ; the long term effects is  $-.18X_{tour_{t-1}} = \frac{.23X_{tour_{t-1}}}{-1.3\gamma_{sent_{t-1}}}$ ; and the rate of adjustment  $\gamma$  is equal to -1.30. The results therefore posit that there is a

long-run relationship between tourism and poverty and they have the correct sign. This means that a 1% increase in tourism arrivals improves human development by .18% in the long term for the case of Ecuador. The diagnostic tests for the ADL model are also presented in Table 31. The results of the Durbin Watson test (DW=2.21) and the Breusch-Godfrey test (BG=1.957 p>.01) indicate that the null hypothesis of no serial correlation can be rejected. In addition, the results of the Breusch-Pagan test for heteroskedasticity indicate that the null hypothesis of no heteroskedasticity is accepted (BP=.30, p<.001).

It is important to note that the short term coefficient of tourism is also significant and a 1% increase in  $\Delta X_{tour\ t-1}$  improves human development by .316%. Interestingly, the error correction term is also significant but greater than 1, thus implying that in the long run the long term effect of tourism on human development increases over unity (overshooting). The overshooting effect of tourism on growth is depicted in Figure 7. A plausible explanation for such effects is that, despite the fact that 62% of the variance is explained by tourism, government spending on social services accelerated the growth of human development in Ecuador. It is also important to note that the results from the Single Equation Error Correction Model suggest that the adjustment speed is .95, thus indicating that the effects take place almost immediately. The difference in the values for the adjustment speed might be caused by the loss of degrees of freedom in the Autodistributed Lag Model. Nevertheless, prior to making any further explanation of the impact of tourism arrival on human development, the direction of causality must be established. In the next section the results of the Granger Test are presented.

Figure 7. Human Development Overshooting

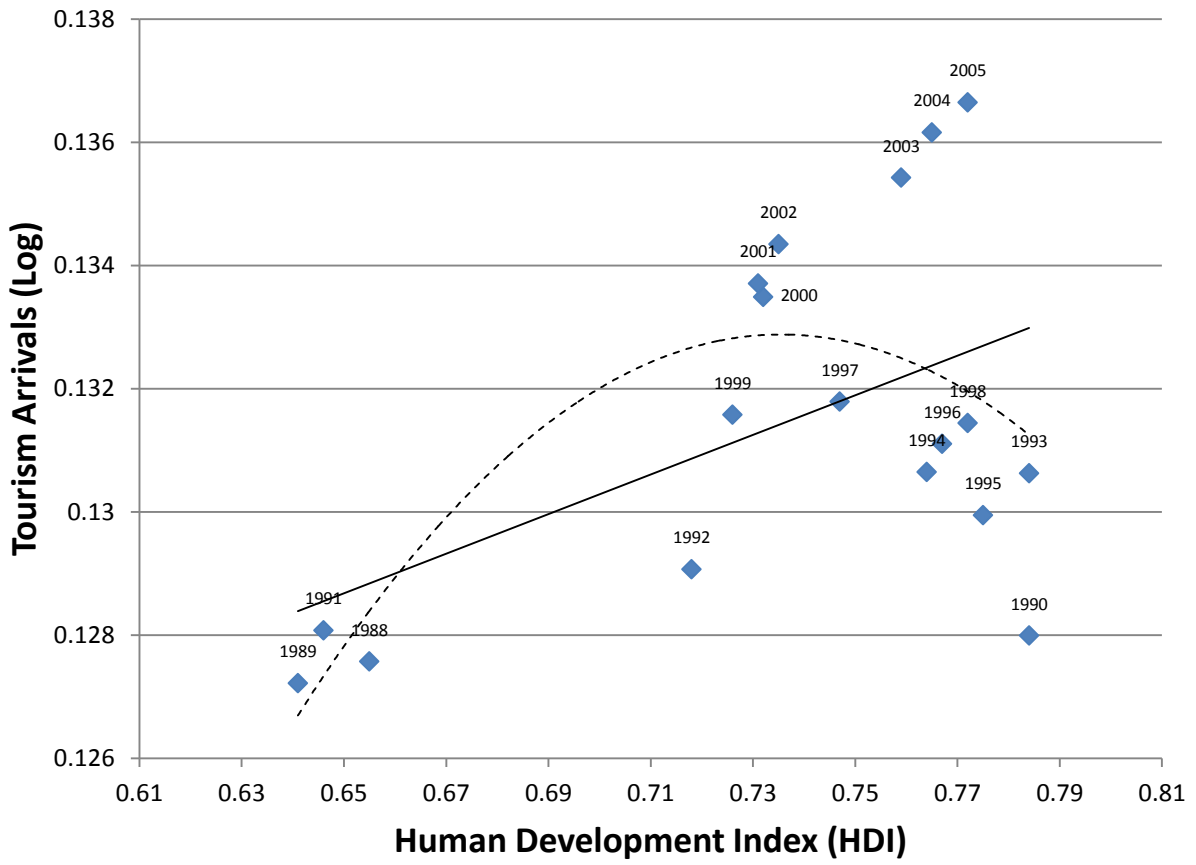




Table 31. Single equation ADL Error Correction Model for Tourism and Human Development

Error Correction Model from Autoregressive Distributed Lag Model				
Variable	Coefficient	Std. Error	t-statistic	Probability
$\Delta X_{tour}$	0.316	0.144	2.190	0.049
$Y_{hdi\ t-1}$	-1.300	0.257	-5.050	0.000
$X_{tour\ t-1}$	0.236	0.079	2.990	0.011
$\Phi_{dummy}$	-0.108	0.041	2.650	0.021
$B_{constant}$	-2.11	0.91	2.31	0.04

Notes:

$R^2 = .72$	$F(4,12) = 7.81 (0.002)$
Adjusted $R^2 = .62$	DW = 2.21
BG= 1.957	BP= .30

Note:  $\Phi_{dummy}$  is shift dummy (which takes the value of 1 from 2000 to 2005, and 0 in all other periods). DW=Durbin Watson, BG-Breusch Godfrey, BP=Breusch Pagan

### Granger Causality

The last important issue to be addressed is how the long run relationship between tourism arrivals and human development is causally related. The evidence of a cointegrating relationship indicates that tourism arrivals and human development move together over time, however, the questions of whether tourism arrivals actually drives human development or human development drives tourism arrivals is open. Granger (1987) indicated that a variable (tourism arrivals), cause another variable (human development) with respect to a model that includes both. In other words, is the current level of human development better explained by using past values of tourism arrivals than by not doing so? Or, is the current level of tourism arrivals better explained by using past valued of human development than by not doing so?

Table 32 presents the results of the Granger tests. These results indicate that the null hypothesis “tourism does not Granger Cause human development” cannot be rejected at any acceptable level of significance. On the other hand, the null hypothesis “human development does not Granger Cause tourism” can be rejected at the 1% level, evidencing that human development “Granger Causes” tourism. Thus concluding that a one way relationship running from human development towards tourism exists, and not the other way around as expected.

Table 32. Granger Causality: Tourism and Human Development

Granger Causality Test Analysis		
Pairwise Granger Causality Test Analysis (Lag 3)		
Null Hypothesis:	F-Statistic	Probability
$Y_{\text{hdi}}$ does not Granger Cause $X_{\text{tour}}$	55.37	0.0000
$X_{\text{tour}}$ does not Granger Cause $Y_{\text{hdi}}$	2.13	0.7110

### *Conclusions*

In this section we have explored the relationship between tourism arrivals and human development. The findings reveal an interesting fact regarding the role of tourism as a development strategy. In the case of Ecuador, it was found that tourism arrivals do not cause human development. These findings contradict our initial position, in which we argued that the expansion of tourism promoted human development and could be considered a determining factor in improving the quality of life and capabilities of the people in Ecuador. Instead, the results from our study give support the arguments made by Tosun et al (2001). For them, tourism

growth in the developing world does not bring human development but the other way around. In the next section the relationship between economic growth and human development is presented.

## **Economic Growth and Human Development**

The steps presented in the previous sections were repeated in this section. The main objective of this section is to examine the relationship between economic growth and human development. The research questions that guide and frame the proposed model are:

Does a long run relationship exist between economic growth and human development? If it does, what is the magnitude of the effect of economic growth on human development?

What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The variables for gauging economic growth and human development are gross domestic product and the Human Development Index. The first procedural test was to investigate the existence of unit root test in the data by employing the ADF and PP tests.

### *Unit Root Tests*

Table 33 and Table 34 presents the results of the ADF tests and PP test for economic growth and human development in Ecuador. The results of the ADF tests indicate that Human Development is stationary in level form with a constant and a drift. On first differences, the ADF tests indicate that Human Development is stationary with a drift and a constant. At the same time, the results of the PP test suggest that human development is stationary in level form with and without a trend. In first differences, the PP tests indicate that human development is also stationary and  $I(0)$ . The results of the PP test for human development indicate that the variable is stationary in all models.

As for Economic Growth, the results of the ADF test indicate the data is only stationary for a model with a drift and a constant in first differences. The PP test results for economic growth indicate that the data is only stationary in first differences, this applies to all models. We can conclude that the results from the both unit roots tests indicate that economic growth and human development are stationary and I(1). The next section presents the results of the cointegration test for economic growth and human development.

Table 33. ADF Unit Root Tests: Economic Growth and Human Development

ADF Test	Variables	
	$Y_{\text{growth gdp}}$	$Y_{\text{hdi}}$
With a Drift and Constant/Levels	0.698(1)	-3.300(4)*
With a Trend and Constant/Levels	-1.544(1)	-3.074(4)
With a Drift and Constant/1st Difference	-2.729(1)*	-2.429(4)*
With a Trend and Constant/1st Difference	-2.848(1)	-1.352(4)

Notes: \* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 1%. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

Table 34. PP Unit Root Tests: Economic Growth and Human Development

PP Test	Variables	
	$Y_{\text{growth gdp}}$	$Y_{\text{hdi}}$
Constant without Trend\Levels	1.0643(1)	-3.676(4)*
Constant with Trend\Levels	1.163(1)	-3.936(4)**
Constant without Trend\1st Difference	-3.065(1)**	-8.177(4)*
Constant with Trend\1st Difference	-3.154(1)***	-8.878(4)**

Notes: \*, \*\*, and \*\*\* denotes the rejection of the unit root hypothesis critical values at 1%, 5%, and 10% based on the Newey-West method. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

*Cointegration: Economic Growth and Human Development*

Since economic growth and human development are integrated in the same order (I (1)), cointegration only exists if the residuals from the Ordinary Least Square (OLS) regression are I (0), in other words, stationary (Engle and Granger, 1987). The next step is to confirm if a long term relationship exists between economic growth and human development. First, we tried three equations: one with a drift, one with trend, and one without them. However, only the model with a drift was significant. Therefore we proceed with a parsimonious model for economic growth on human development with the following equation.

$$Y_{hdi_t} = \alpha_t + \beta_1 X_{\text{growth gdp}_t} + \Phi_{dummy_t} \tag{67}$$

Where  $Y_{hdi_t}$  represents human development and,  $X_{growth\ gdp_t}$  represents economic growth and  $\Phi_{dummy}$  represents a dummy that captures the dollarization effects in Ecuador. The coefficient of economic is expected to have a sign, this improving human development. The results from the OLS regression for economic growth on human development with a dummy are:

$$Y_{hdi_t} = 6.32 + .301X_{growth\ gdp_t} - .046\Phi_{dummy} \quad (68)$$

Note: t value for  $\alpha_t = -2.46$  ( $p < .10$ ), t value for  $X_{growth\ gdp_t} = -1.51$  ( $p > .01$ )

The results from the OLS regression of economic growth on human development are presented in Table 35. In addition, diagnostic test for autocorrelation were performed, the results for the Durbin Watson test is also presented in Table 35. However, before any inference of the impact of economic growth on human development is made, the residuals from such equation must be calculated and tested for stationary.

Table 35. Economic Growth and Human Development Cointegration Test

Granger Two Step Cointegration				
Dependent Variable $Y_{hdi}$	Coefficient	Std. Error	t-statistic	Probability
$X_{growth\ gdp}$	0.301	0.111	2.7	.01
$\Phi_{dummy}$	-0.046	0.030	-1.51	.15
$B_{constant}$	6.322	2.613	-2.42	.02
	$R^2 = .35$		$F(2,15) = 5.36$	$(0.03)$
	Adjusted $R^2 = .26$		DW = 2.43	

Note:  $\Phi_{dummy}$  is shift dummy(which takes the value of 1 from 2000 to 2005, and 0 in all other periods). DW=Durbin Watson

Both the ADF and PP tests on the residuals were also performed without a constant or trend, with a constant, and with a trend. According to Maddala and Kim (1998), the powers of these tests are sensitive to the number of lags used. The optimal lag structure was determined by the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criterion (SBIC), and was set at 4. The residuals from the regression of economic growth on human development are presented on Table 36, the ADF tests in Table 37, and the PP tests in Table 38. The results of the ADF and PP tests without a constant and trend indicated that residuals were stationary at the 1% level ( $t=-4.24$  and  $t=-4.25$  respectively). However, the results of the ADF with a constant, a trend, and 4 lags indicated that the residuals are not stationary. Meanwhile, the PP test indicates that the residuals are stationary at the 1% level of significance for all models. The results from the ADF and PP test suggests that there is evidence to support that residual are stationary, meaning that the there is a cointegration relationship between economic growth and human development. The error correction model for economic growth and human development is presented next.



Table 36. Calculated Residuals for Economic Growth and Human Development

Calculated Residuals for $Y_{hdi} = f(X_{\text{growth gdp}}, B_{\text{constant}})$			
Year	Residual	Year	Residual
1988	-0.0483905	1997	0.003755
1989	-0.0640697	1998	0.0251575
1990	0.0743761	1999	-0.0096462
1991	-0.0723366	2000	-0.008403
1992	-0.00292	2001	-0.0183494
1993	0.0625729	2002	-0.0215054
1994	0.034666	2003	-0.003551
1995	0.0426746	2004	-0.0107954
1996	0.0305921	2005	-0.0138271

Table 37. ADF Unit Root Test for residuals of Economic Growth and Human Development

Augmented Dickey Fuller (ADF) Unit Root Test for Residuals

Variable	Test Statistic
Residuals(4)	-4.24*
Residuals, Constant, Lags(4)	-1.09(4)
Residuals, Trend, Lags(4)	-3.707(4)**

Notes: \* and \*\*denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 1% and 5%. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

Table 38. PP Unit Root Test for residuals of Economic Growth and Human Development

Phillips Perron (PP) Unit Root Test for Residuals

Variable	<i>Test Statistic</i>
Residuals (4)	-4.25*
Residuals, Constant, Lags(4)	-4.23(4)*
Residuals, Trend, Lags(4)	-4.12(4)*

Notes: \*denotes the rejection of the unit root hypothesis at the 1% level. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

*Error Correction Model*

Now that a cointegration relationship between economic growth and human development has been established, the next step is to test two Error Correction Models presented in the methodology (Single Equation Error Correction Model and Autodistributed Lag Model). According to the Engle and Granger (1987) methodology for the Single Equation Error Correction Model, if economic growth and human development are co-integrated, an error-correction representation may exist and take form in the following equation:

$$\Delta Y_{hdi_t} = \alpha_{10} + \beta_1 \Delta X_{growth\ gdp_t} + \rho_1 \mu_{t-1} + \varepsilon_{10} \tag{69}$$

Where  $\Delta Y_{hdi_t}$  and  $\Delta X_{growth\ gdp}$  represent a first difference operator for human development and economic growth,  $\mu_{t-1}$  is the error-correction term (which are the residual series of the cointegration equation.) Based on previous studies about economic growth and human development (Ravallion, 2001) we expect that in the short term, economic growth

$(\Delta X_{growth\ gdp_t})$  will be significant and have a positive sign, in other words improve human development. As for the coefficients of  $\mu_{t-1}$ , it is expected to be negative and no greater than one. The negative sign of the residual term implies a pull mechanism to adjust the system. The results of the Error Correction equation are:

$$\Delta Y_{hdi_t} = -.008\alpha_{10} - 0.25\Delta X_{growth\ gdp_t} - 1.0\mu_{t-1} + \varepsilon_{10} \quad (70)$$

Note:  $\alpha_{Cons}(t=.01, p>.10)$   $\alpha_{Res_{t-1}}(t=-4.11, p<.01)$   $\beta\Delta X_{growth\ gdp\ capita}(t=-0.08, p>.10)$   
 $F(2.14)=5.92, p<.05; DW=2.12; R-squared=.59$  Adjusted R-squared=.54

The equation above indicates that economic growth does not have the expected sing (positive); however the coefficient for the short term impact on human development is not significant. On the other hand, the long term adjustment speed represented by the residuals is also significant and equal to 1; suggesting that any long term effects will adjust to equilibrium almost immediately. In order to corroborate such results, a single equation error correction model based on and Autoregressive Distributed Lag Model (ADL) (Banerjee, Dolado and Mestre, 1996; Davidson, Hendry, Srba and Yeo ,1978) was also performed. The ADL equation to test the effects of economic growth on human development is:

$$\Delta Y_{hdi_t} = \alpha_t + \beta_0\Delta X_{growth\ gdp_t} + \beta_2X_{growth\ gdp_{t-1}} + \gamma Y_{hdi_{t-1}} + \omega_t \quad (71)$$

To obtain the short term effects, long term effects, and the adjustment coefficient, the error correction model can be simplified and written as:

$$\Delta Y_{hdi_t} = \alpha_t + \beta_0\Delta X_{growth\ gdp_t} + \gamma[Y_{hdi_{t-1}} - \beta_3X_{growth\ gdp_{t-1}}] + \Phi_{dummy} + \omega_t \quad (72)$$

where  $\beta_0 \Delta X_{growth\ gdp_{t-1}}$  is a first difference operator that represents the short term impact of economic growth on human development,  $\beta_3 X_{growth\ gdp_{t-1}} = \frac{\beta_2 X_{growth\ gdp_{t-1}}}{\gamma Y_{hdi_{t-1}}}$  and captures the long term effect of economic growth on human development,  $\gamma$  captures the rate at which the model moves towards equilibrium, and  $\Phi_{dummy}$  is a dummy used to capture the effects of dollarization.

In summary, this equation provides the long and short term elasticities for economic growth and the adjustment speed in which the system is restored to equilibrium. The results from the ADL error correction model for tourism and human development is:

$$\Delta Y_{hdi_t} = -6.91\alpha - 0.314\Delta X_{growth\ gdp_t} - 1.22\gamma[Y_{hdi_{t-1}} - .27X_{growth\ gdp_{t-1}}] - 0.05\Phi_{dummy} + \omega_t \quad (73)$$

Note:  $\alpha$ (t=-1.88, p<.10),  $X_{growth\ gdp_{t-1}}$ (t=2.05, p<.10),  $\gamma$  (t=-4.26, p<.01),  $\Delta X_{growth\ gdp_t}$ (t=0.75, p>.05)  $\Phi_{dummy}$  (t=-1.39, p>.05) F(4.12)=4.72, p<.05; DW=2.18; R-squared=.61 Adjusted R-squared=.48

where the short term effect is equal to  $.314\Delta X_{growth\ gdp_{t-1}}$ ; the long term effects is

$-.27X_{growth\ gdp_{t-1}} = \frac{.33X_{growth\ gdp_{t-1}}}{-1.22Y_{hdi_{t-1}}}$ ; and the rate of adjustment  $\gamma$  is equal to -1.22. The results

therefore posit that there is a long-run relationship between economic growth and human development and they have the correct sign. This means that a 1% increase in economic growth improves human development by .27% in the long term for the case of Ecuador. The diagnostic tests for the ADL model are also presented in Table 39. The results of the Durbin Watson test (DW=2.18) and the Breusch-Godfrey test (BG=5.097 p>.01) indicate that the null hypothesis of no serial correlation can be rejected. In addition, the results of the Breusch-Pagan test for

heteroskedasticity indicate that the null hypothesis of no heteroskedasticity is accepted (BP=.29,  $p < .001$ ).

It is important to note that the short term coefficient of economic growth is not significant. Interestingly, the error correction term is significant and greater than 1, thus implying that in the long run the long term effect of economic growth on human development increases over unity (overshooting). A plausible explanation for such effects is that, despite the fact that 61% of the variance is explained by economic growth, government spending on social services accelerated the growth of human development in Ecuador. Nevertheless, prior to making any further explanation of the impact of economic growth on human development, the direction of causality must be established. In the next section the results of the Granger Test are presented.

Table 39. Single equation ADL Error Correction Model for Economic Growth and Human Development

Error Correction Model from Autoregressive Distributed Lag Model				
Variable	Coefficient	Std. Error	t-statistic	Probability
$\Delta X_{\text{growth gdp}}$	0.314	0.417	0.750	0.460
$Y_{\text{hdi t-1}}$	-1.220	0.288	-4.260	0.001
$X_{\text{growth gdp t-1}}$	0.330	0.162	2.050	0.063
$\Phi_{\text{dummy}}$	-0.050	0.039	-1.390	0.191
$B_{\text{constant}}$	-6.91	3.68	-1.88	0.09

Notes:

$R^2 = .61$	$F(4,12) = 4.72 (0.016)$
Adjusted $R^2 = .48$	DW = 2.18
BG= 5.097	BP= .29

Note:  $\Phi_{\text{dummy}}$  is shift dummy (which takes the value of 1 from 2000 to 2005, and 0 in all other periods). DW=Durbin Watson, BG-Breusch Godfrey, BP=Breusch Pagan

### *Granger Causality*

The last important issue to be addressed is how the long run relationship between economic growth and human development is causally related. The evidence of a cointegrating relationship indicates that the economic growth and human development move together over time, however, the questions of whether economic growth actually drives human development or human development drives economic growth is open. Granger (1987) indicated that a variable (economic growth), cause another variable (human development) with respect to a model that includes both. In other words, is the current level of human development is better explained by using past values of economic growth than by not doing so? Or, is the current level of economic growth better explained by using past values of human development than by not doing so?

Table 40 presents the results of the Granger tests. These results indicate that the null hypothesis “economic growth does not Granger cause poverty” can be rejected at the 10% level, evidencing that economic growth “Granger Causes” human development. The results also indicate that the null hypothesis that human development does not Granger Cause economic growth cannot be rejected at the 1% level, thus concluding that a one way relationship exists running from economic growth to human development and not the other way around.

Table 40. Granger Causality: Economic Growth and Human Development

Granger Causality Test Analysis		
Pairwise Granger Causality Test Analysis (Lag 1)		
Null Hypothesis:	F-Statistic	Probability
$Y_{\text{hdi}}$ does not Granger Cause $X_{\text{growth gdp}}$	0.0347	0.8520
$X_{\text{growth gdp}}$ does not Granger Cause $Y_{\text{hdi}}$	3.019	0.0800

### *Conclusion*

In conclusion, we have found that a long run relationship exists between economic growth and human development. This relationship was not only significant, but the magnitude of 1% increase in economic growth results in .27 % improvement in the human development in the long run. The error correction term was also significant and larger than one, suggesting that the system is restored back to equilibrium immediately. However, in the short term, economic growth does not have the virtue improving human development. The latter might be due to the fact that any improvement in human development is a prolong transition. The results from the Granger causality tests indicate that, as suggested by Ranis and Stewart (2000), an HD lop-sided relationship exists in Ecuador.

In the case of Ecuador, slow growth rates for economic growth might have not provided rapid increases in incomes which in turn hampered human development. As suggested by Ranis, Stewart and Ramirez (2000), this could be caused by the lack technological change and sophistication. For example, the latter typically provokes a transition in which typically the richer sectors enjoy high levels of human capital accumulation. Unfortunately, poorer sectors are not a level or able to seize the same benefits in terms of their life expectancy and educational possibilities. In the next section the relationship between tourism and economic growth is presented.

## **Tourism and Economic Growth**

The steps presented in the previous sections were repeated in this section. The main objective of this section is to examine the relationship between tourism and economic growth.

The research questions that guide and frame the proposed model are:

Does a long run relationship exist between tourism and economic growth? If it does, what is the magnitude of the effect of tourism on economic growth? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The variables for gauging tourism and economic growth are tourism arrivals and gross domestic product. The first procedural test was to investigate the existence of unit root test in the data by employing the ADF and PP tests.

### *Unit Root Tests*

Table 41 and Table 42 show the results of the ADF tests and PP test for tourism arrivals and economic growth in Ecuador. In level form with a constant and with a trend or drift, the results from the ADF and PP tests indicate that both variables contain a unit root. When differenced, the results from the ADF test indicate that with a drift and a constant both variables are stationary. As for the results from the PP tests, when both variables are differenced with or without a trend, they become stationary. Therefore we conclude that all tourism arrivals and economic growth are  $I(1)$  and proceed to test if both variables are cointegrated.



Table 41. ADF Unit Root Tests: Tourism Arrivals and Economic Growth

ADF Test	Variables	
	$Y_{\text{growth gdp}}$	$X_{\text{tour}}$
With a Drift and Constant/Levels	0.698(3)	0.318(3)
With a Trend and Constant/Levels	-1.544(3)	-1.034(3)
With a Drift and Constant/1st Difference	-2.729(3)*	-1.534(3)***
With a Trend and Constant/1st Difference	-2.848(3)	-1.663(3)

Notes: \*\* and \*\*\* denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 5% and 10% respectively. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

Table 42. PP Unit Root Tests: Tourism Arrivals and Economic Growth

PP Test	Variables	
	$Y_{\text{growth gdp}}$	$X_{\text{tour}}$
Constant without Trend\Levels	1.064(3)	0.393(3)
Constant with Trend\Levels	1.163(3)	0.991(3)
Constant without Trend\1st Difference	-3.066(3)**	-5.554(3)*
Constant with Trend\1st Difference	-3.154(3)**	-5.402(3)*

Notes: \*denotes the rejection of the unit root hypothesis at 1% based on the Newey-West method. The optimal lag length is presented in brackets and is based on the SBIC and AIC criteria. The critical values are obtained from STATA version 9 and correspond to 18 observations.

### *Cointegration: Tourism and Economic Growth*

Since tourism arrivals and economic growth are integrated in the same order (I(1)), cointegration only exists if the residuals from the Ordinary Least Square (OLS) regression between these two are I(0), in other words stationary (Engle and Granger, 1987). The next step to

confirm a long term relationship exists between tourism arrivals and economic growth implies regressing tourism arrivals on economic growth with the following equation. First we tried three equations, one with a drift, one with a trend, and one with neither; only the model with a drift was significant. Therefore we opted to proceed with a model that included a drift with the following equation:

$$Y_{growth\ gdp_t} = \alpha_t + \beta_1 X_{tour_t} + \Phi_{dummy} + \epsilon_t \quad (74)$$

Where  $Y_{growth\ gdp_t}$  represents economic growth,  $X_{tour_t}$  represents tourism, and  $\Phi_{dummy}$  represent a trend to capture the effects of dollarization in Ecuador. The results from the OLS regression for tourism arrivals on economic growth are:

$$Y_{growth\ gdp_t} = 16.64 + .288X_{tour_t} + -.588\Phi_{dummy} + \epsilon_t \quad (75)$$

Note: t value for  $\alpha_t=23.94$  (P<.01), t value for  $\beta X_{tour_t}=9.72$  (p<.01), t value for  $\Phi_{dummy}=(p<.10)$

The results from the OLS regression of tourism arrivals on economic growth are presented in Table 43. The coefficient of tourism arrivals has the expected sign (positive) and is significant at the 1% level. This implies that a 1% increase in tourism arrivals would lead to a .29% increase in economic growth, ceteris paribus in the long term. In addition, diagnostic test for autocorrelation were performed, the results for the Durbin Watson test is also presented in Table 43. However, before any inference of the impact of tourism and poverty is made, the residuals from such equation must be calculated and tested for stationary.

Table 43. Tourism and Economic Growth Cointegration Test

Granger Two Step Cointegration				
Dependent Variable	Coefficient	Std. Error	t-statistic	Probability
$Y_{\text{growth gdp}}$				
$X_{\text{tour}}$	.288	0.0535	9.72	0.000
$\Phi_{\text{dummy}}$	-0.588	0.0326	-1.80	0.091
$B_{\text{constant}}$	16.64	0.6953	23.94	0.000
				125.869
	$R^2 = .94$		$F(2,15) =$	(0.000)
	Adjusted $R^2 = .93$		DW =	1.66

Note: DW=Durbin Watson

The ADF and PP tests on the residuals were also performed. According to Maddala and Kim (1998), the powers of these tests are sensitive to the number of lags used. The optimal lag structure was determined by the Akaike Information Criteria (AIC) and the Schwartz Bayesian Information Criterion (SBIC), and was set at 4. The residuals from the regression of tourism on economic growth are presented on Table 44, the ADF tests in Table 45, and the PP tests in Table 46. The results from the ADF test indicate that the residuals are stationary with and without a constant with 4 lags at the 5% level ( $t=-3.18$  and  $t=-3.05$  respectively). As for the PP tests, the results indicate that the residuals are also significant with and without a constant with 4 lags at the 5% level ( $t=-3.05$  and  $t=-2.99$  respectively).

Table 44. Calculated Residuals for Tourism and Economic Growth

Calculated Residuals for			
$Y_{gdp} = f(X_{tour}, B_{constant})$			
Year	Residual	Year	Residual
1988	-0.0130978	1997	-0.0010844
1989	0.0149887	1998	0.0378506
1990	0.0010875	1999	-0.0343
1991	0.0474219	2000	-0.0472213
1992	0.010857	2001	-0.0067314
1993	-0.0673972	2002	0.0018031
1994	-0.0225518	2003	-0.0193802
1995	0.031393	2004	0.0193357
1996	-0.0051675	2005	0.0521941

Table 45. ADF Unit Root Test for residuals of Tourism and Economic Growth

Augmented Dickey Fuller (ADF) Unit Root Test for Residuals of Tourism and Economic Growth

Variable	Test Statistic
Residuals(4)	-3.18(4)**
Residuals, Constant, Lags(4)	-3.11(4)**
Residuals, Trend, Lags(4)	-2.79(4)

Notes: \*\*denotes the rejection of the unit root hypothesis based on MacKinnon (1991) critical values at 5%. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

Table 46. PP Unit Root Test for residuals of Economic Growth and Human Development

Phillips Perron (PP) Unit Root Test for Residuals

Variable	<i>Test Statistic</i>
Residuals (4)	-3.05(4)**
Residuals, Constant, Lags(4)	-2.99(4)**
Residuals, Trend, Lags(4)	-2.80(4)

Notes: \*\*denotes the rejection of the unit root hypothesis at the 5% level. The Optimal lag length for the unit root test is presented in brackets and were based on the AIC and SBIC criteria.

#### *Error Correction Model*

Now that a cointegration relationship between tourism and economic growth has been established, the next step is to test the Error Correction Model presented in the methodology (Single Equation Error Correction Model and Autodistributed Lag Model). According to Engle and Granger (1987) methodology, if tourism and economic growth are co-integrated, an error-correction representation may exist and take form in the following equation:

$$\Delta Y_{growth\ gdp_t} = \alpha_{10} + \beta_1 \Delta X_{tour_t} + \rho_1 \mu_{t-1} + \varepsilon_{10} \quad (76)$$

Where  $\Delta Y_{growth\ gdp_t}$  and  $\Delta X_{tour_t}$  represent first difference operators for human economic growth and tourism,  $\mu_{t-1}$  is the error-correction term (which are the residual series of the cointegration equation.)

The results of the Error Correction equation are:

$$\Delta Y_{growth\ gdp_t} = .021\alpha_{10} + .086\Delta X_{tour_t} - .527\mu_{t-1} + \varepsilon_{10} \quad (77)$$

Note:  $\alpha$  (t=2.45, p<.05)     $\Delta X_{tour_t}$  (t=-2.17, p>.10)     $\mu_{t-1}$  (t=0.83, p<.05)  
F(2.14)=4.48, p<.01; DW=2.12; R-squared=.55 Adjusted R-squared=.48

The equation above indicates that tourism has the expected sign (positive), however the coefficient for the short term impact on economic growth is not significant. On the other hand, the long term adjustment speed represented by the residuals is also significant and equal to -.527; suggesting that any long term effects will adjust to equilibrium at a rate of 52.7%. In order to corroborate such results, a single equation error correction model based on an Autoregressive Distributed Lag Model (ADL) (Banerjee, Dolado and Mestre, 1996; Davidson, Hendry, Srba and Yeo, 1978) was also performed. The ADL equation to test the effects of tourism on economic growth is:

$$\Delta Y_{growth\ gdp_t} = \alpha_t + \beta_0\Delta X_{tour_t} + \beta_1X_{tour_{t-1}} + \gamma_{growth\ gdp_{t-1}} + \omega_t \quad (78)$$

To obtain the short term effects, long term effects, and the adjustment speed coefficients, the error correction model can be simplified and written as:

$$\Delta Y_{growth\ gdp_t} = \alpha_t + \beta_0\Delta X_{tour_t} + \gamma[Y_{growth\ gdp_{t-1}} - \beta_3X_{tour_{t-1}}] + \omega_t \quad (79)$$

where  $\beta_0\Delta X_{tour_{t-1}}$  is a first difference operator that represents the short term impact of tourism on economic growth,  $\beta_3X_{tour_{t-1}} = \frac{\beta_2X_{tour_{t-1}}}{\gamma_{growth\ gdp_{t-1}}}$  and captures the long term effect of tourism

arrivals on economic growth, and  $\gamma$  captures the rate at which the model moves towards equilibrium.

In summary, this equation provides the long and short term elasticities for tourism on economic growth and the adjustment speed in which the system is restored to equilibrium. The results from the ADL single equation error correction model for tourism and economic growth are:

$$\Delta Y_{growth\ gdp_t} = 8.9\alpha_1 + .069\Delta X_{tour_t} - .523Y_{growth\ gdp_{t-1}} + .25X_{tour_{t-1}} + \omega_t \quad (80)$$

Note:  $\alpha$  (t=2.49, p<.05)     $\Delta X_{tour_t}$  (t=-.76, p>.10)  
 $X_{tour_{t-1}}$  (t=3.08, p<.01)     $Y_{growth\ gdp_{t-1}}$  (t=-2.60, p<.05)  
F(4,11)=3.64, p<.01; DW=1.36; R-squared=.61 Adjusted R-squared=.48

To obtain the long term effects and adjustment coefficient, the error correction model can be simplified as:

$$\Delta Y_{growth\ gdp_t} = 8.9\alpha_1 + .069\Delta X_{tour_t} - .523\gamma[Y_{growth\ gdp_{t-1}} - .50X_{tour_{t-1}}] + \omega_t \quad (81)$$

where the short term effect is equal to  $.069\Delta X_{tour\ arrivals_{t-1}}$ ; the long term effects is

$$-.50X_{tour_{t-1}} = \frac{.25X_{tour_{t-1}}}{-.523Y_{growth\ gdp_{t-1}}};$$

and the rate of adjustment  $\gamma$  is equal to  $-.523$ . The results

therefore posit that there is a long-run relationship between tourism and poverty and they have the correct sign. This means that a 1% increase in tourism arrivals improves economic growth by .50% in the long term for the case of Ecuador. As for the short term effects, the coefficient of .069 is not significant.

The complete tests are presented in Table 47. The results therefore posit that there is a long-run relationship between tourism and economic growth and they have the correct sign (positive). This means that a 1% increase in tourism increases economic growth by .50% in the case of Ecuador. Moreover, the correction term is significant and equal to .523, thus implying that in the long run, economic growth increases over at a rate of 53.2% per period. As presented in Table 48, the total effects of tourism on economic growth in period  $t$  are complete by period  $t+5$ , meaning that it takes a total of five additional years to adjust towards equilibrium. Is important to note that the short term coefficient of tourism is not significant at the 10% level, confirming the results obtained from the Engle Granger (1987) model.

The results of the Durbin Watson test ( $DW=1.36$ ) and the Breusch-Godfrey test ( $BG=2.55$ ,  $p>.01$ ) indicate that the null hypothesis of no serial correlation can be rejected. In addition, the results of the Breusch-Pagan test for heteroskedasticity indicate that the null hypothesis of no heteroskedasticity is accepted ( $BP=4.24$ ,  $p<.001$ ). In the next section the results from the Granger tests are presented.



Table 47. Single equation ADL Error Correction Model for Tourism and Poverty

Error Correction Model from Autoregressive Distributed Lag Model				
Variable	Coefficient	Std. Error	t-statistic	Probability
$\Delta X_{\text{growth gdp}}$	0.069	0.091	0.760	0.462
$Y_{\text{hdi t-1}}$	-0.523	0.197	-2.660	0.020
$X_{\text{growth gdp t-1}}$	0.259	0.084	3.080	0.009
$B_{\text{constant}}$	8.90	3.57	2.49	0.03

Notes:

$R^2 = .61$	$F(4,11) = 3.64 (0.04)$
Adjusted $R^2 = .48$	DW = 1.36
BG = 2.55	BP = 4.24

Note: DW=Durbin Watson, BG-Breusch Godfrey, BP=Breusch Pagan

Table 48. Adjustment towards equilibrium: Tourism and Economic Growth

GDP will increase a total of .50 points, spread over future years at a rate of 52% per year		
GDP will increase→	0.26	at t
Then another→	0.12	at t+1
Then another →	0.06	at t+2
Then another →	0.03	at t+3
Then another →	0.01	at t+4
no effect at →	0.00	at t+5

### Granger Causality

The last important issue to be addressed is how the long run relationship between tourism arrivals and economic growth is causally related. The evidence of a cointegrating relationship indicates that tourism arrivals and economic growth move together over time, however, the

questions of whether economic growth actually drives human development or human development drives economic growth is open. Granger (1987) indicated that a variable (tourism) causes another variable (economic growth) with respect to a model that includes both. In other words, is the current level of economic growth is better explained by using past values of tourism than by not doing so? Or, is the current level of tourism is better explained by using past values of economic growth than by not doing so?

Table 49 presents the results of the Granger tests. These results indicate that the null hypothesis “economic growth does not Granger cause poverty” can be rejected at the 1% level, evidencing that economic growth “Granger Causes” tourism. The results also indicate that the null hypothesis that tourism does not Granger Cause economic growth can be rejected at the 5% level, thus concluding that a two way relationship exists running from economic growth to tourism and the other way around.

Table 49. Granger Causality: Tourism and Economic Growth

Granger Causality Test Analysis		
Pairwise Granger Causality Test Analysis (Lag 2)		
Null Hypothesis:	F-Statistic	Probability
$Y_{\text{growth gdp}}$ does not Granger Cause $X_{\text{tour}}$	10.53	0.001
$X_{\text{tour}}$ does not Granger Cause $Y_{\text{growth gdp}}$	5.25	0.020

## *Conclusion*

In this section we have explored the relationship between tourism arrivals and economic growth. The findings reveal an interesting fact regarding the role of tourism as a strategy for growth. In the case of Ecuador, it was found that tourism arrivals and economic growth cause each other. These findings contradict our initial position, in which we argued that the expansion of tourism promoted economic growth. These results are in line with previous studies such as: Chen & Chiou-Wei (2009), Cortez & Pulina, (2006), Dritsakis (2004), Katircioglu (2009), Kim, Chen, & Jang (2006), Lee & Chien (2008), and Wickremasinghe & Ihalanayake (2006). In the case of Ecuador, a 1% increase in tourism increases economic growth by .50%. At the same time, the correction term is significant and equal to .523, thus implying that in the long run, economic growth increases over at a rate of 53.2% per period. Consequently, the total effects of tourism on economic growth in are complete in five years, as the system is restore back to towards equilibrium.

The existence of a mutual influence in which higher levels of economic growth lead to higher levels of tourism development and vice versa deserves a different policy set and will result in more complex implications in terms of sustainability and long-run impacts for development in Ecuador. The government should allocate the necessary resources to other leading industries as well as tourism. For example, tourism policy and economic growth policies should reinforce each other. In the case of Ecuador, two opportunities exist. First for example, traditional and nontraditional exports should be promoted for tourist consumption. This in turn could serve as tool to further increase exports and improve the balance of payments. Secondly,

collaborative efforts between leading industries and tourism organizations should focus on developing strategies for business travelers, therefore fostering a mutually beneficial relationship.

This chapter was set to empirically examine the relationship between tourism and the various development concepts such as economic growth, poverty and human development. The proposed methodology has proven to be a valid econometric model for the assessment of the hypotheses presented. In the following chapter a summary of the results is presented and implications from these results are drawn. Finally the limitations of the study and the possibilities for future research are discussed.

## **CHAPTER V**

This study concludes with this chapter. First, a summary of the previous four chapters is made, followed by a discussion of the findings. The discussion of the findings, along with the implications from the results represents the major contribution of this study. The chapter concludes with discussion of the limitation of the study and suggestions for future research.

### **Summary**

The main objective of this dissertation was to discuss the relationship between tourism and development. This study conceptualizes development as the ability to promote economic growth, reduce poverty, and enhance the capabilities of individuals (Mehrotra & Delamonica, 2007:38). The structure of this dissertation consists of five chapters. The first chapters discussed the various concepts of development and the different views in which tourism is perceived as facilitator or engine for development. The classic theories of economic development take no notice of the links between tourism and development nor do they mention it as a contributor to the process. (Todaro & Smith, 1997:103). However, contemporary research on tourism have demonstrated the potential to create jobs, foster backward and forward linkages (Cai, Leung & Mak, 2006), contribute to the balance of payments (Sinclair, 1998), and promoting social exchange and enhancing the livelihoods of residents (Simpson, 2008). Current trends in tourism are also discussed and the potential benefits from tourism expansion strategy are presented. A case is made to support a more holistic view of development that moves away from simply considering economic growth, towards humanistic concepts such as poverty and capabilities as well.

In the second chapter, a thorough discussion of the relationship between tourism and development is presented. Tourism scholars have drawn extensively from mainstream development theories to reminisce tourism's contributions to development. Primarily, the discussion zooms in the major development theories by reviewing the following perspectives: Conceptualization of Development, Development as the Efficient Allocation of Resources, Development as Economic Growth, Development as Unequal Growth, Development as Poverty Reduction, Development as "Freedom", Tourism and Economic Growth, Tourism and Unequal Growth, Tourism and Poverty Reduction, and Tourism and "Freedom". The review of the literature identifies that a progression in development thinking has emerged. The fascination with growth has decelerated and more attention to reducing poverty and enhancing quality of life is in order. As for the role of tourism, mixed results between tourism and growth are evident, while the tourism poverty and capability nexus is more of contemporary phenomena that have not yet been fully discussed in the literature. Therefore, an opportunity exists to simultaneously explore the nexus between tourism, growth, poverty, and capabilities.

In the third chapter, the econometric model is presented. Arguments are made to support an error correction model and causality tests to assess the dynamic relationship between tourism and economic growth, tourism and poverty, tourism and human development, economic growth and poverty, and economic growth and human development. A detailed explanation of the proposed model is explained as well as the diagnostic tests of unit root and cointegration. An extensive time series data set was compiled from several government offices in Ecuador for the period of 1988 to 2005. The development concepts presented in Chapter 2 are estimated with innovative constructs never used before in the study of tourism and development. The measures

of development are gross domestic product (GDP), the human development index (HDI), and the Sen Poverty Index. GDP is used by comparing standards of living across countries, and is also converted into purchasing power parity (PPP) terms to eliminate difference in national price levels (UNDP, 2008). Poverty is no longer viewed as only lack of income; instead the Sen Poverty Index is utilized. This measurement incorporates the headcount ratio, the income gap or depth of poverty, and the Gini co-efficient. The HDI is a human measure of development, developed by the United Nations and constructed under the principles of “human capabilities” (Sen, 2002). Tourism and Economic Growth are measured with tourism arrivals and gross domestic product, respectively.

The fourth chapter presents the empirical findings of the study. The complete results are presented in Figure 8. The results indicate that a long run relationship exists between tourism and poverty. Moreover, the Granger test indicates a causality relationship running from tourism to poverty reduction, thus supporting a tourism poverty nexus in Ecuador. Moreover, such relationship was not only significant, but the magnitude of 1% increase in tourism results in .54 % reduction of the Sen Poverty Index in the long run. The error correction term was also significant and smaller than one, suggesting that the system is restored back to equilibrium at a rate of 68% per period and completely phased out by period  $t+3$ . As for the relationship between economic growth and poverty, a 1% increase in economic growth results in .21 % reduction of the Sen Poverty Index in the long run.

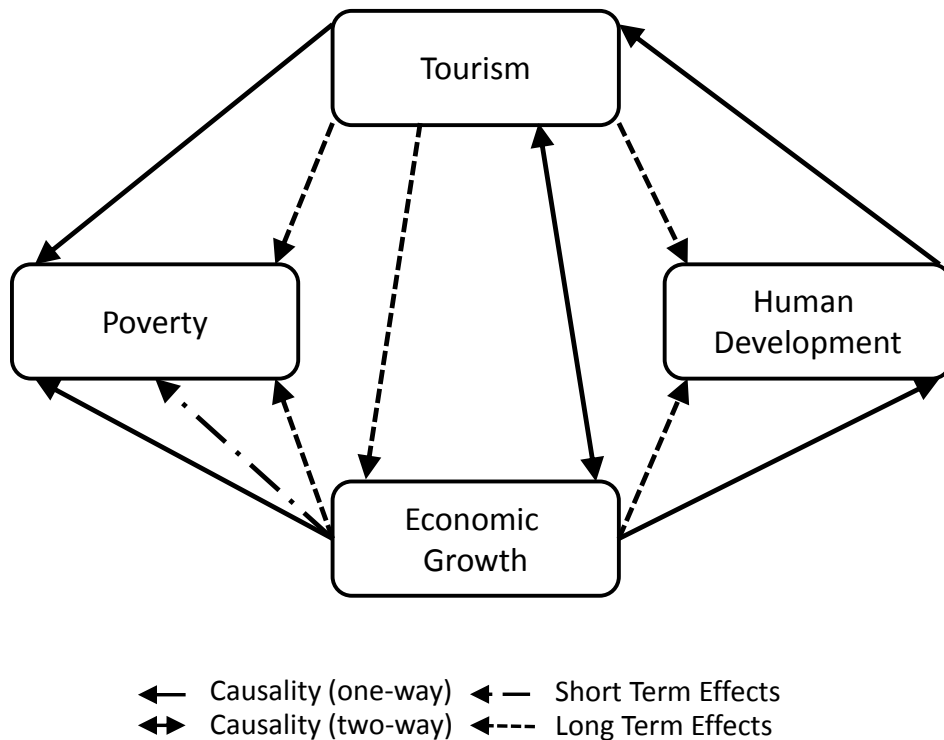


Figure 8. Empirical Relationships for Tourism and Development

The error correction term was also significant and smaller than one, suggesting that the system is restored back to equilibrium at a rate of 70% per period and completely phased out by period  $t+3$ . The Granger tests also indicate evidence of growth poverty nexus in the case of Ecuador. In terms of human development, the Granger causality tests indicate that tourism does not cause human development but the other way around. These findings contradict our initial position, in which we argued that the expansion of tourism promoted human development and could be considered a determining factor in improving the quality of life and capabilities of the people in Ecuador. Thus we can conclude that a virtuous cycle of tourism and human development is still not evident in Ecuador.



The fourth relationship that was analyzed was between economic growth and human development. The results indicate that a HD lop-sided relationship exists. As noted by previous researchers (Ranis & Stewart, 2000; Ranis, Stewart & Ramirez, 2000), evidence of a virtuous cycle of development, in which human development enhances growth, which in turn enhances growth is not evident. In Ecuador, a 1% increase in economic growth results in .27 % improvement in the human development in the long run. The error correction term was also significant and larger than one, suggesting that the system is restored back to equilibrium immediately. However, in the short term, economic growth does not have the virtue of improving human development. This represents an opportunity for government policy. For example, Ranis and Stewart (2000) suggest that a virtuous cycle is possible if national debt is controlled and economic growth policies are accelerated. Failure to act upon could result in falling back to a vicious cycle of development.

The final empirical relationship was between tourism and economic growth. The results from this dissertation indicate that tourism does not have a short term effect on economic growth. However, in the long run, a 1% increase in tourism increases economic growth by .50%. At the same time, the correction term is significant and equal to .523, thus implying that in the long run, economic growth increases at a rate of 53.2% per period. The Granger tests indicate that a bidirectional relationship exists. These findings are similar to those of Kim, Cheng and Jang (2006) for Taiwan and Khalil and Kakar (2007) in the case of Pakistan. This suggests that for developing countries tourism growth could emerge as a byproduct of economic development and vice versa. For example, tourism has the potential of fire up economic growth by fostering the construction sector as well as nontraditional exports. In addition, as suggested by Gnoth (2002),

opportunities exists to develop marketing strategies that capitalize on such relationship by co-branding traditional and non-traditional exports with the image of the destination, therefore leveraging the destination image with such products.

## **Discussion**

### *Tourism and Poverty Reduction*

The purpose of this study was to investigate the relationship between tourism and development. The first research question addressed was, does a long run relationship exist between tourism expansion and economic growth? If it does, what is the magnitude of the effect of tourism expansion on economic growth? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them? The study found that a long term relationship exists between tourism and poverty. For example, a 1% increase in tourism reduces poverty by .54%. The time of adjustment is 68%, suggesting the full effects are completed in 3 years. Moreover, the causal relationship runs from tourism to poverty, thus supporting the "Tourism Poverty Nexus" from previous studies (Croes & Vanegas, 2008).

There are three possible explanations regarding the relationship between tourism and poverty. First, not finding an immediate or short term impact of tourism arrivals on poverty can suggest that the effects of tourism might not act rapidly in reducing income inequalities. These findings are in line with the Kuznets hypothesis, in which rapid economic expansion triggers and an increase in income inequality (Kuznets 1963, p. 68). A cursory look at Figures 9 and 10 demonstrates that as tourism arrivals increases, the income of the top quintile (the rich) also increases over time. This is an indicator that the rich rapidly capture potential benefits from the

expansion of the tourism sector. Nevertheless, the same is not sustained for the relationship between tourism arrivals and the income of the bottom quintile (the poor), as structural breaks seems to exist. A plausible explanation could be that the severity of income inequality for the bottom quintile places them at a disadvantage. However, this situation seems to reposition itself or move back to equilibrium in the long term, as poverty is reduced in the long term. More specifically, this could be explained by the conditions of income inequality that were in existence prior to the year 2000. A look at the polynomial trend line in Figure 9 demonstrates the fluctuations of income for the bottom quintile over the years. It can be observed that prior to the year 2000 the incomes of the poor and tourism arrivals remained somewhat dormant. On the other hand, the periods post the year 2000 indicate a positive relationship between arrival and the incomes of the bottom quintile (Figure 10). These two facts could suggest that the positive relationship between tourism and income inequality is more of a long standing phenomena rather than a contemporary one.

Even though the severity of income inequality in the early 1990's might have prevented tourism from acting to increase the incomes of the bottom quintile without delay (short term); it is observed that tourism arrivals have a potential to reduce the incidence of poverty without more ado. This issue has been previously addressed in the literature by what Croes and Vanegas (2008) deemed the "Tourism Poverty Nexus". The results from this dissertation are in accordance with their findings and a closer look at Figure 11 demonstrates that as tourism arrivals increase, the incidence of poverty is reduced.

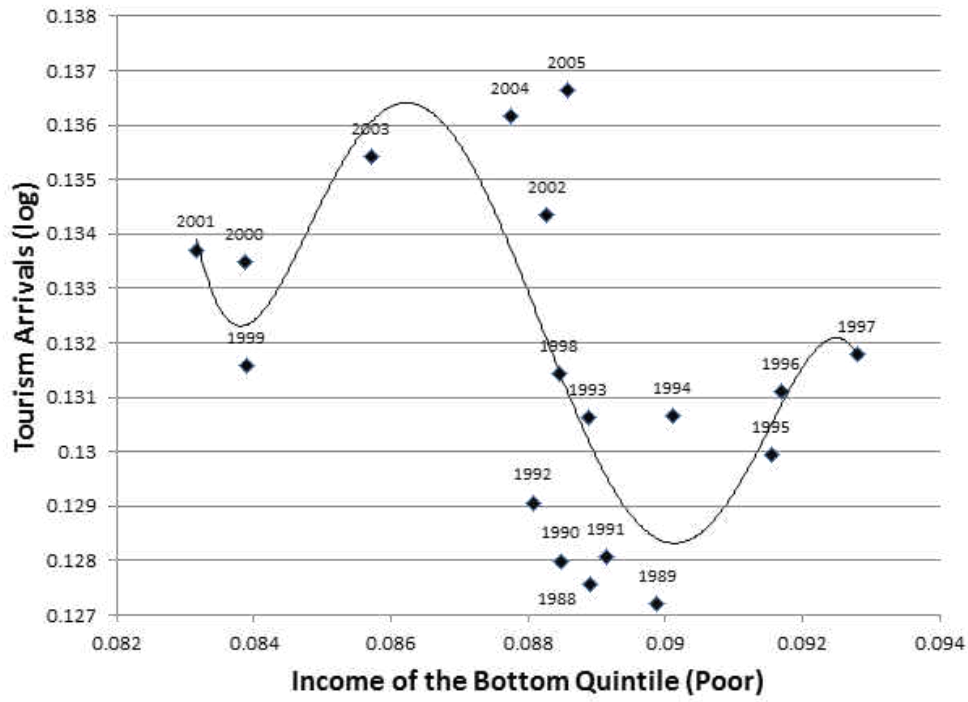


Figure 9. Relationship between Tourism and the Income of the Bottom Quintile (Poor)

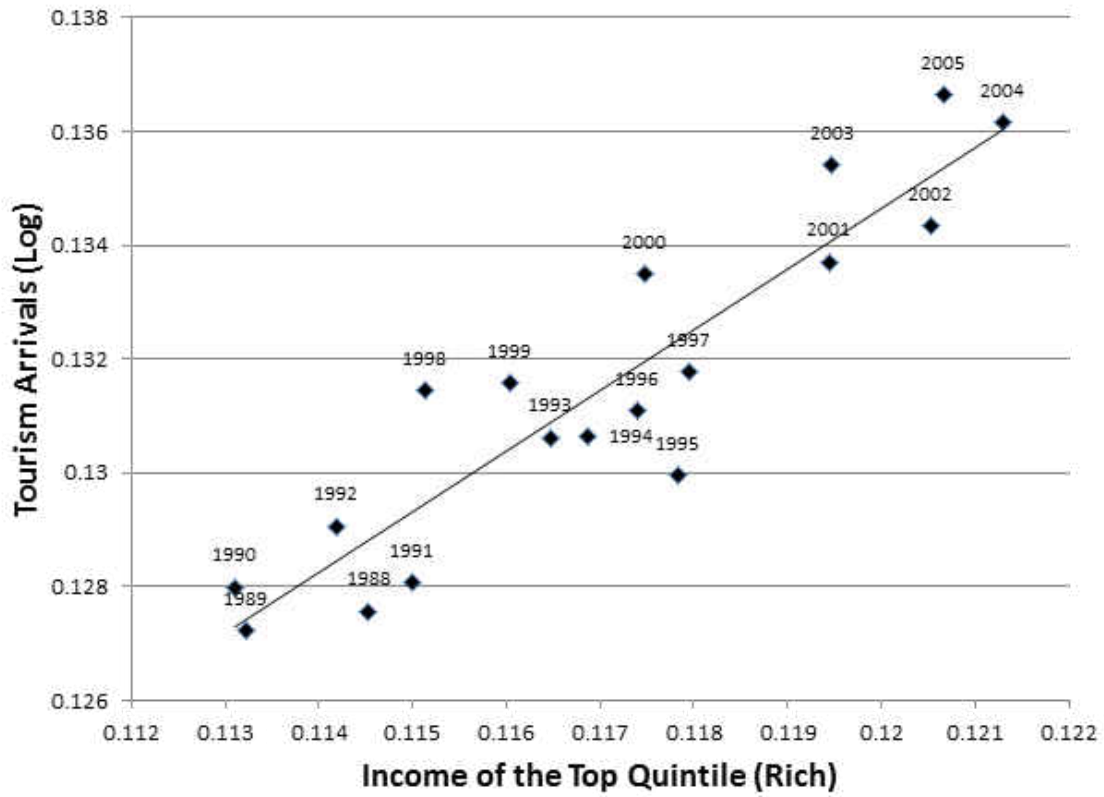


Figure 10. Relationship between Tourism Arrivals and the Top Quintile (Rich)

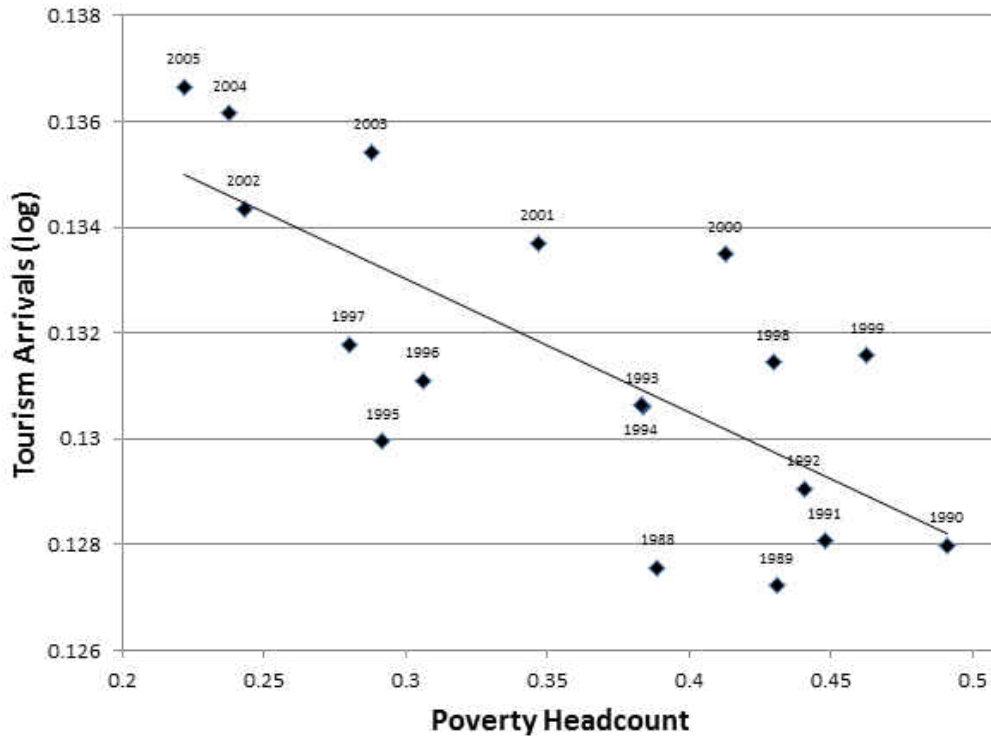


Figure 11. Relationship between Tourism Arrivals and Incidence of Poverty

Lastly, with regard to the long term effects and the adjustment time in which tourism acts upon poverty, there is a possibility that the tourists might not have full access to services rendered by the poor. This in turn might be mainly caused by the current structure of tourism related businesses, more specifically by the existence of multiple intermediaries that sell Ecuador as a tourism destination. The significance of long term effects of tourism and the adjustment speed might also be indicative that a learning curve exists. In such a case, local residents might not have the ability to quickly establish a tourism related business that satisfy the needs and preferences of visitors.

In the case of Ecuador, Croes et al (2008) found that the majority of the leisure tourists were first time visitors. This could be an indicator that the knowledge about the destination products is limited, as they lack information about other comparable products or services. This will in turn place this tourist segment at a disadvantage in terms of mobility, as their experiences might be contrived to specific areas selected by travel intermediaries. Therefore we could assert that opportunities exist to promote and develop small and medium size enterprises in poor communities, whom will sequentially gain control of the full benefits from an increase in tourism arrivals.

#### *Economic Growth and Poverty*

The second objective of this dissertation was to explore the relationship between economic growth and poverty. This objective was guided by the following research questions; Does a long run relationship exist between economic expansion and poverty? If it does, to what degree does a change in economic growth act upon poverty? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them? The study found that a long term relationship exists between economic growth and poverty. Moreover, a 1% increase in economic growth results in .21% reduction in poverty. The elasticity of economic growth is smaller than the elasticity of tourism when it comes to reducing poverty. However, the effects of economic growth on poverty take place at a faster pace than tourism (70% per period). In addition, economic growth has also a short term effect on poverty, indicating that the poor benefit immediately from economic expansion. Finally, the Granger tests

suggest a unidirectional relationship evidenced by a pro-poor growth nexus, as economic growth granger causes poverty.

We would like to argue that, in the case of Ecuador, the existence of a positive growth-poverty nexus might imply that a focus on economic growth might be a powerful strategy for poverty reduction. Based on the methodology and data sources employed in this dissertation, there are two possible channels for poverty reduction via economic growth. First, a cursory look and comparison of the income growth rate for the bottom and top quintile of the population indicate that since 2002 the poor have benefited by a larger growth rate than the top quintile (See Figure 12.). This results differ from previous studies (Dollar and Kraay, 2004; Roemer and Gugerty, 1997) in which the growth rate of the income of the bottom quintile increase as much as the top quintile. However it is important to notice that the elasticity of growth towards increasing the incomes of the poorest quintile is not “one to one” as suggested by previous studies.

It is also observed that economic growth has positive effects in reducing poverty in terms of the incidence of poverty. These findings coincide with the findings from previous studies, mainly Ravallion (2000) and Ravallion and Chen (1997). In this particular case the incidence of poverty is measured in terms of the capability to buy a basic basket of goods, one of the components of the Sen Poverty Index used to gauge poverty in Ecuador. The fact that more people are able to command goods and services that are essential/necessary for the household is an indicator that the lives of the poor have benefited by increases in economic growth.



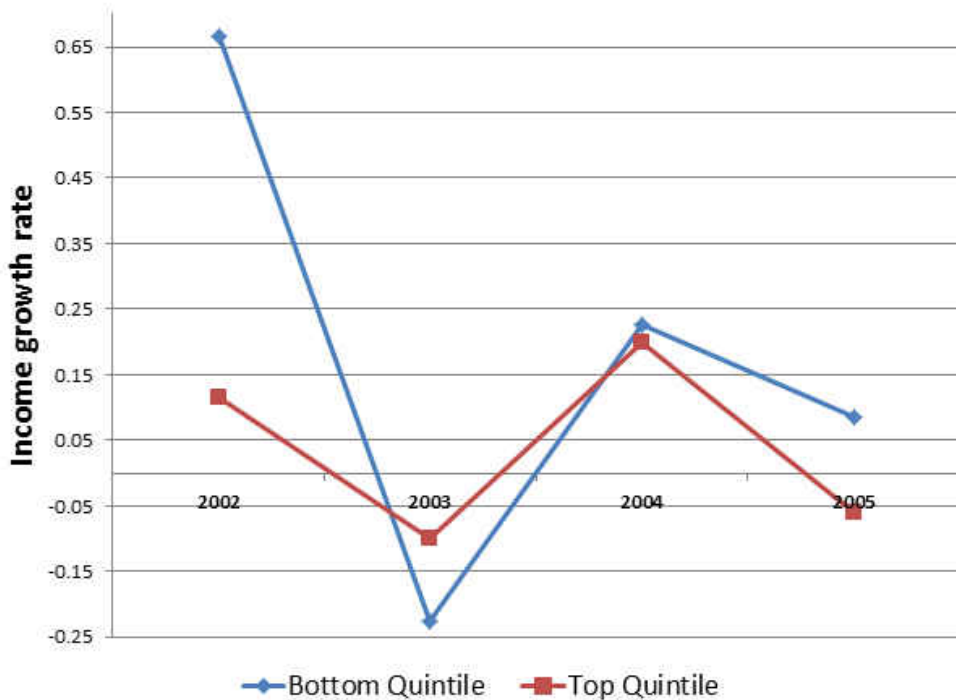


Figure 12. Income Growth Rate for bottom and top quintile

We can therefore conclude that the effects of economic growth on poverty are “pro poor” for two reasons (Figure 13). First, the effects of growth not only take place immediately, but in the long run the full effects are completed in less than three years. Secondly, the one directional causality running from growth to poverty suggests that a virtuous relationship exists in Ecuador. This last finding contends the view of the office of the World Bank Chief Economist for Latin America and the Caribbean about the existence of viscous relationship between poverty and growth in Latin America (Perry et al., 2006). In the next section we proceed with the discussion of another important aspect of development and present the results from the relationship between tourism arrivals and human development.

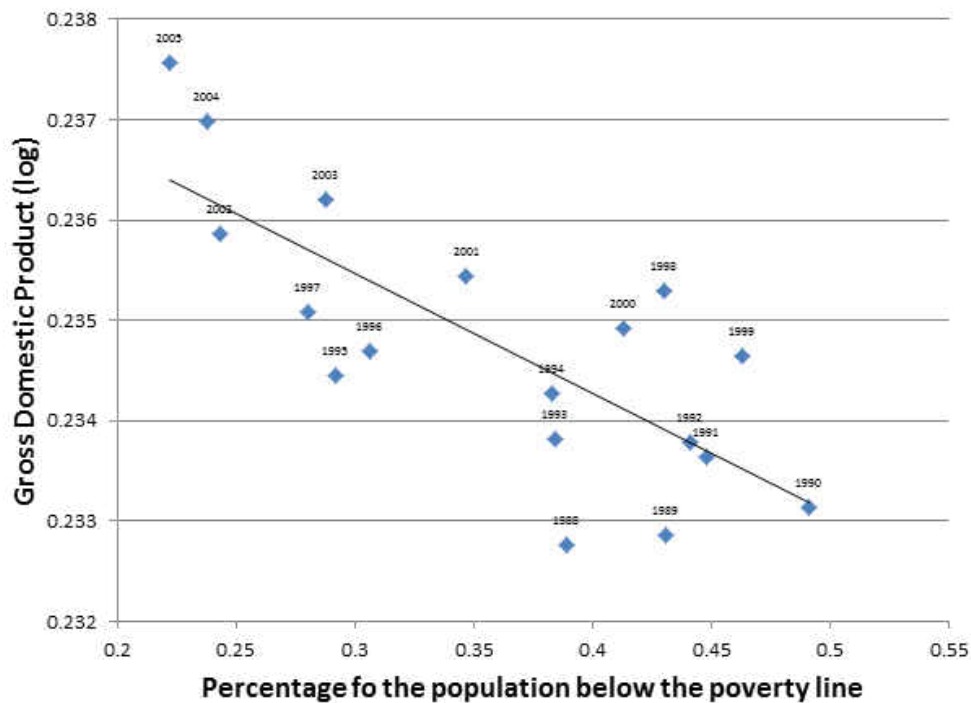


Figure 13. Relationship between Gross Domestic Product and Incidence of Poverty

### *Tourism and Human Development*

The third objective of this dissertation was to explore the relationship between tourism and human development. This objective was guided by the following questions: Does a long run relationship exist between tourism and human development? If it does, to what degree does a change in tourism act upon human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The findings reveal an interesting fact regarding the role of tourism as a development strategy. In the case of Ecuador, it was found that tourism arrivals do not cause human development. These findings contradict our initial position, in which we argued that the

expansion of tourism promoted human development and could be considered a determining factor in improving the quality of life and capabilities of the people in Ecuador. Instead, the results from our study give support to the arguments made by Tosun et al (2003). For them, tourism growth in the developing world does not bring human development but the other way around.

The supply of socially desirable services such as basic infrastructure and facilities for serving resident's needs also provides a foundation for standards of comfort that many tourists require when selecting a travel destination. In order to attract and satisfy the needs of tourists, developing countries require larger amount of capital investment in infrastructure in order to provide a product that fits western standards. In addition, tourism is contingent on labor capacity and labor skills. In the case of Ecuador, the development of specialized tourist segments, such as eco tourists, requires trained personnel with the knowledge and capability to provide specialized tours and services. An example of this situation is the Galapagos Islands, where optimal infrastructure, educational programs, and provision of public services have helped create one of the most thought out tourism destinations in the world.

In Figures 14 and 15, we can observe how improvements in the quality of life of individuals serve as a catalyst for tourism expansion, giving support to the one directional causality from Human Development to tourism. For example, Figure 14 indicates that a relationship between social programs expenditure and tourism exists. As more basic services are available to local residents, their livelihoods are improved and the destination becomes more attractive to visitors. In Figure 15, the relationship between living conditions and tourism is depicted. It can be observed that as the mortality rates in Ecuador decrease, tourism arrivals

increase (see Figure 17). Lower mortality rates are an indicator of the effectiveness of basic health services and the provision of social programs to help the less fortunate.

In the case of Ecuador, a tourism lopsided relationship exists, consisting of weak human development and strong tourism growth. The one directional causality indicates that an opportunity exists to create a virtuous cycle between tourism and human development. Ranis and Stewart (2000) indicate that in the case of a growth (in this case tourism) lopsided relationship, government must make an effort to support social expenditure, female education, more equal income distribution, and investment. In the case of Ecuador, government policies should be directed towards promoting new educational programs and specialized tourism related jobs with the support of tourism enterprises. A private public alliance or initiative could promote the development of new attractions and or destination within the country. According to Zebich-Knos (2008), tourism in Ecuador is concentrated in two main areas, Quito and Galapagos. By promoting new destinations, the profits from visiting tourists could help develop new programs for residents in rural or remote areas, thus collaborating toward a virtuous cycle between tourism and human development.

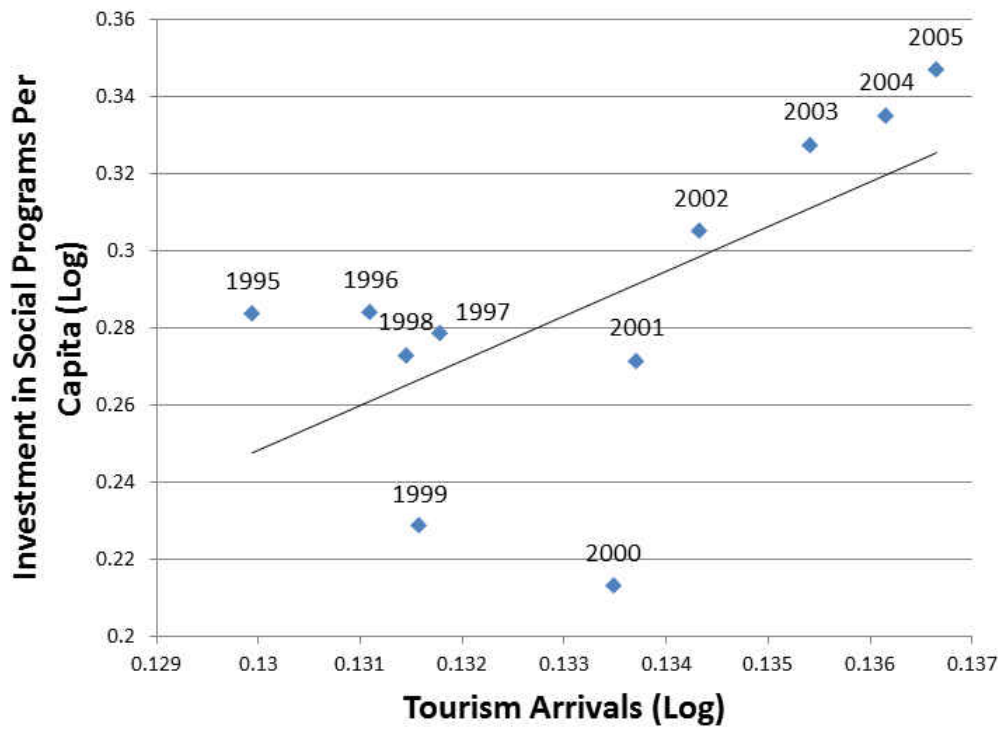


Figure 14. Relationship between Tourism Arrivals and Investment in Social Programs Per Capita

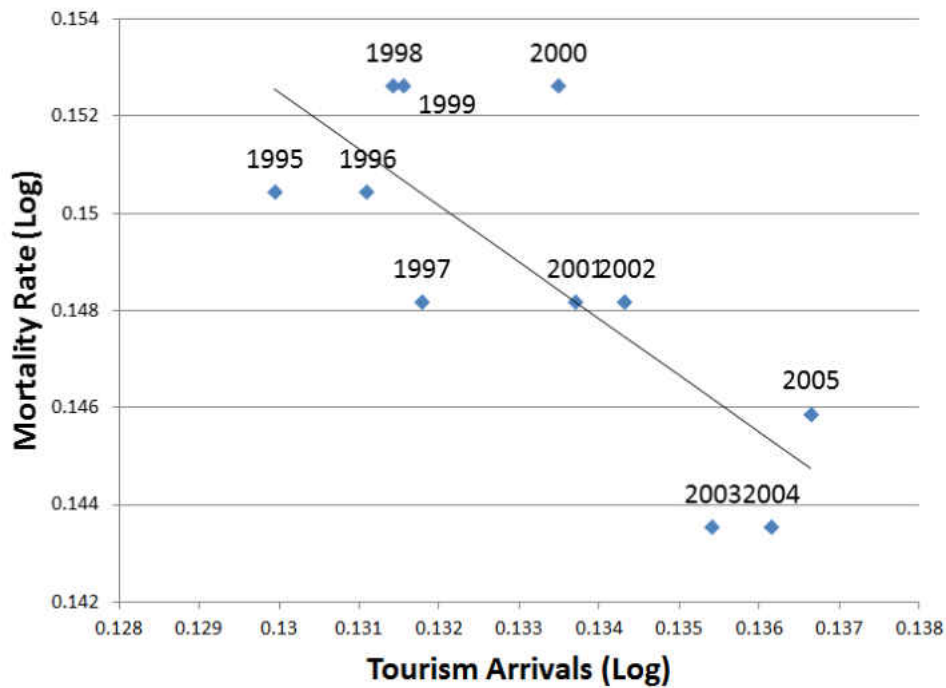


Figure 15. Relationship between Tourism Arrivals and Mortality Rates

These investments should be made to improve the quality of life of the resident and not the tourists. For example, a look at Figure 16 demonstrates that the government in Ecuador has placed education and other social services as top priority. Since 2004 the national budget for education has dramatically increased (more than doubled); and from such budget the total amount assigned for new investment has more than tripled. This is an indicator how state policy not only secures educational programs but promotes development through innovation and the expansion of new programs. This might in turn be beyond the financial capacity of developing countries or not be politically feasible, therefore making clear that alliances between tourism stakeholder and government are needed to further promote human development.

Finally, from a development perspective, we can conclude that the causality effect from human development to tourism has major implications for development policy in Ecuador. Government should promote tourism in order to obtain more resources. We can also confirm that tourism plays an important role in reducing poverty while at the same time suggesting that the expansion of individual capabilities or human development has an indirect effect on poverty reduction via tourism.

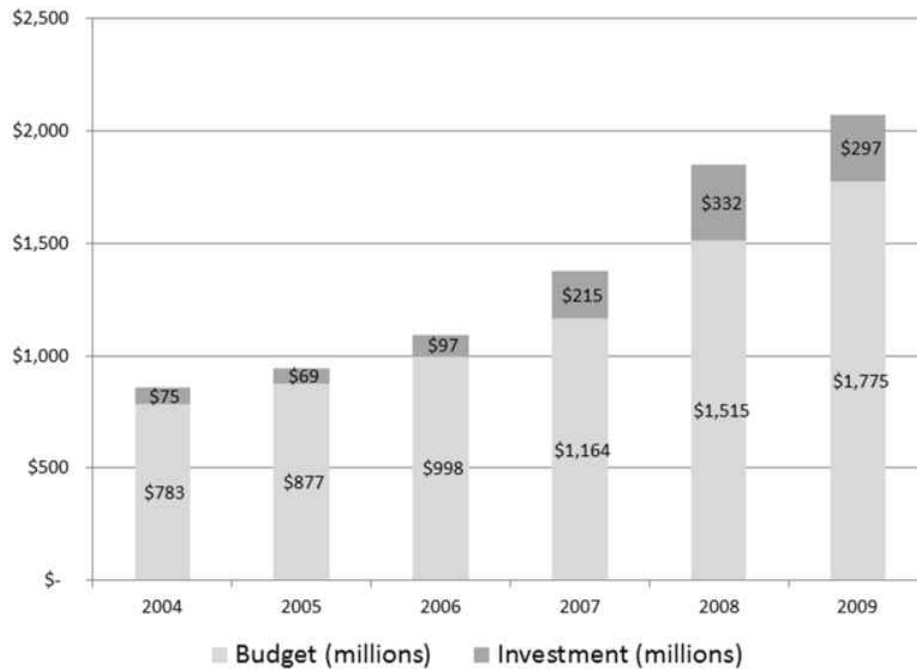


Figure 16. Government Investment in Education (2004-2009)

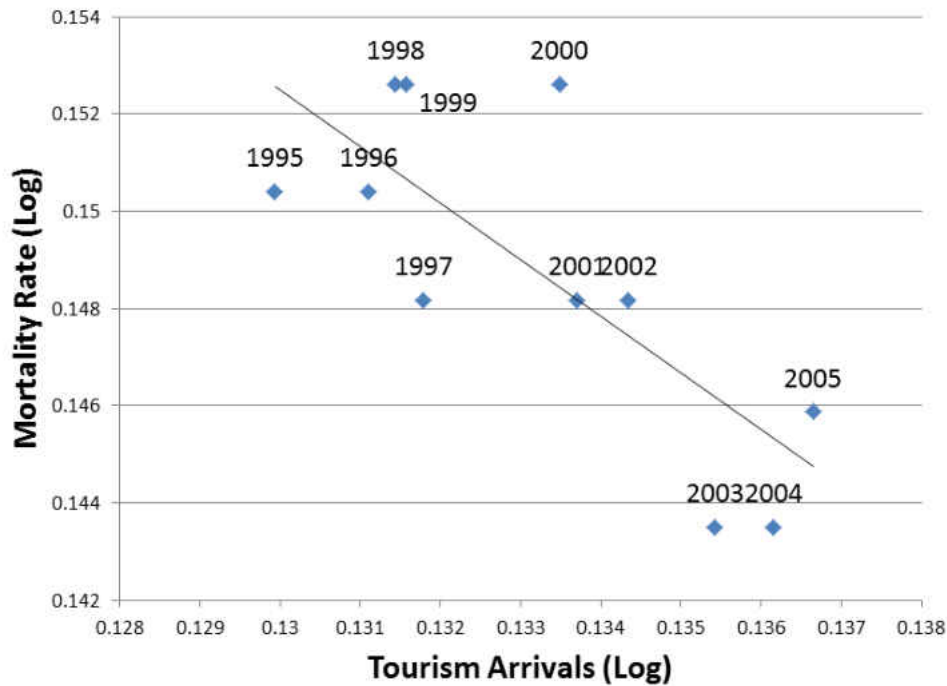


Figure 17. Relationship between Tourism Arrivals and Mortality Rates

### *Economic Growth and Human Development*

The fourth objective of this dissertation was to explore the relationship between economic growth and human development. This objective was guided by the following questions: Does a long run relationship exist between economic growth and human development? If it does, to what degree does a change in economic growth act upon human development? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

The results from the cointegration and error correction model indicate that a long run relationship exists between economic growth and human development. The elasticity for the long



term coefficient is significant and a 1% increase in economic growth improves human development by .27% with an adjustment factor above unity, thus suggesting that the effects take place immediately. This could be an indicator that economic growth makes a contribution to human development via government activity and civil society. However, in the short term, economic growth does not seem to have an impact on human development.

The one directional causality running from economic growth to human development suggests that a virtuous cycle of development does not exist yet, as no relationship exists running from human development to economic growth. According to Ranis, Stewart and Ramirez (2000), there are three possible explanations for this situation: inequalities, lack of command over resources, and limited investment from national governments. First, in the case of Ecuador, we already identified that economic growth has the potential of reducing poverty and inequalities. As the level of poverty and income inequality is reduced, the propensity for households to, overtime, spend in items that promote human development (e.g. health and education) increases. For example, our findings indicate that economic growth reduces poverty in Ecuador, as a 1% increase in growth reduces poverty by .21%. This suggests that the households' ability to command resources increases.

Secondly, the allocation of household income devoted to human development (e.g. education and health) also increases as female participation in the labor force increases. Females not only have more control over incomes within the household but limit the spending by reducing the consumption of harmful items such as tobacco and alcohol (Hoddinott et al., 1997). In Figure 19 it can be observed that, since 1988, female participation in the labor force has increased from 67% to 75% in 2005.

Lastly, it has also been found that the higher the proportion of government spending towards social programs, the higher the contribution of GDP toward human development. The data series presented in Figure 16 indicate that spending for social programs have increased dramatically since the beginning of the millennium. This suggests that the allocation of national incomes contributes to human development through the allocation of resources towards education, health, and basic services. In Ecuador, the growth rates of social programs and social expenditures by the government have increased significantly since 1999 (see Figure 18.). Therefore, we can conclude that Ecuador is at a development stage which requires continuous financial support for these programs while at the same time developing supportive strategies that further promote economic growth.

Over time, it is expected that as the Ecuadorian economy expands, poverty will continue to decrease and human development will continue to improve. These scenarios are only possible if the government implements strategies that are pro-growth. According to Ashley, Roe and Goodwin (2001), pro-poor strategy should focus on three core areas: economic benefits, positive social impacts, policy reform. For example, economic policies should focus on more opportunities for poor, especially the informal sector. At the same time, the collective benefits should aim at spreading the benefits beyond direct earners. And finally, the creation of jobs should limit the creation of unskilled jobs and avoid low-paid activities that do not meet international standards. Failure to develop such strategies could result in a vicious cycle, and growth will no longer contribute or sustain human development. Sustained growth will help secure additional revenues for the government to continue supporting socially desirable programs. Ranis, Stewart and Ramirez (2000) posit that people's capabilities, creativity, and

productivity are expected to contribute in expanding the economy, therefore creating a virtuous cycle of development. For example, as human development increases, people will become more productive and enterprises will benefit from skilled labor. From a macro perspective, by fostering education and research, these skill labors will contribute toward technological progress (Lucas, 1988). Since no automatic connection exists between human development and growth, economic policy should also promote investments and savings. The latter could take place in two forms, either through domestic enterprises or individuals. In the case of domestic enterprises, municipal governments should develop an incentive plan that accelerates direct investment from tourism enterprises towards enhancing current products or for the development of new ones. In the case of Ecuador, this strategy should contemplate an action plan that envisages complying with decreed commune structures that currently exists. The commune structure (common land) in Ecuador has proven to be a conservative force in the rural areas, thus deserving critical analysis. For example, microcredit or microfinance programs could help cope with the regulatory or financial challenge faced by commoners that do not command control over any type of assets.

As for private investment, the government could implement a “matched savings program”. According to Zimmerman and Banerjee (2009), these savings are not solely for the purpose of generating investment, but also to serve as a safety net that protects household from unanticipated events that could slip households back into poverty. Nevertheless, the implementation of incentives or government policies to promote saving and investment should strive to create trust from investors and households.

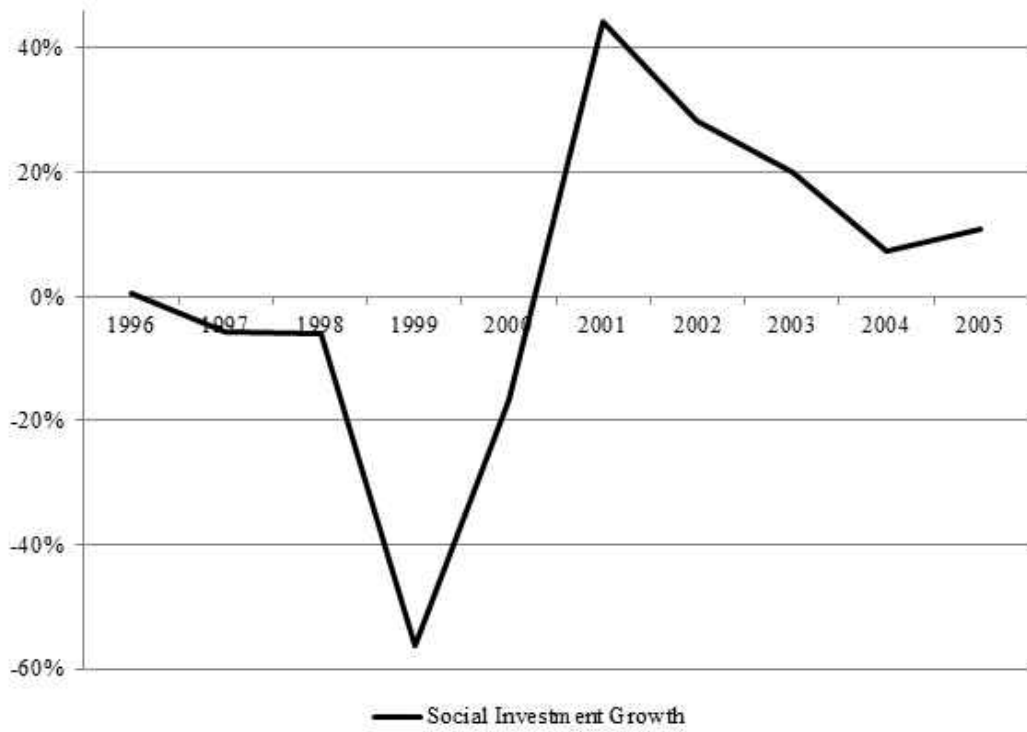


Figure 18. Increases in government investment for social programs

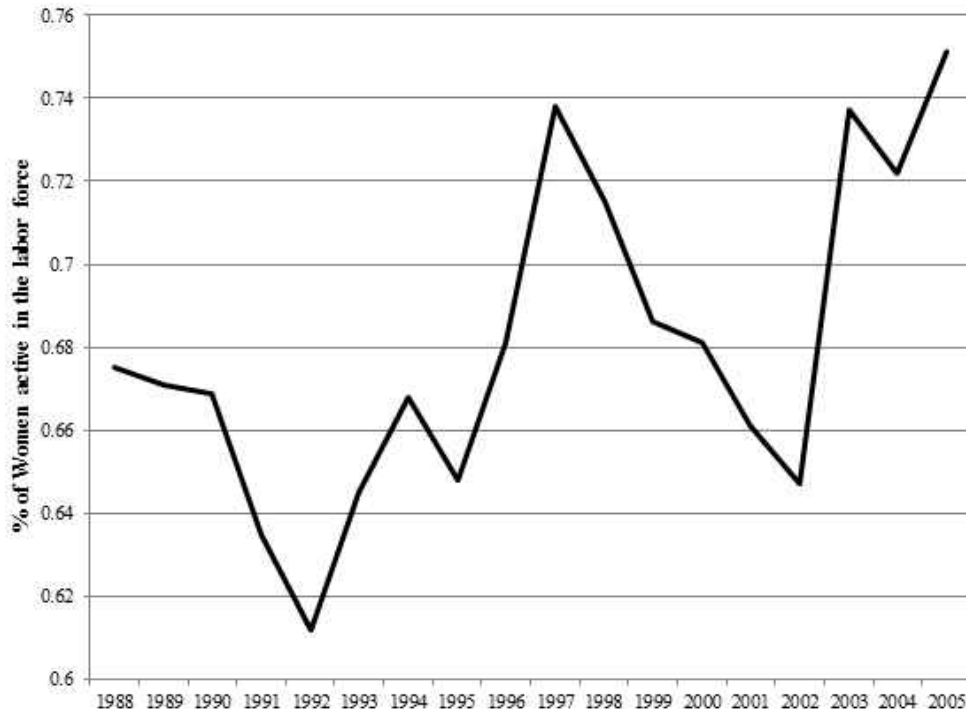


Figure 19. Female participation in the labor force (economically active population)

### *Tourism and Economic Growth*

The last objective of this dissertation was to explore the relationship between tourism and economic growth. This objective was guided by the following questions: Does a long run relationship exist between tourism and economic growth? If it does, to what degree does a change in tourism act upon economic growth? What is the time of adjustment for such effects to take place? What is the direction of the causal relationship among them?

Initially, we expected that the empirical results from the error correction model to be similar to those of Croes and Vanegas (2008) in Nicaragua for two reasons. First, both countries

have high incidence of poverty and inequality. And secondly, both economies have transitioned from high exports of agricultural products towards more tourism development, with the latter demonstrating the potential of becoming an emerging sector (Croes et al., 2009; Croes & Vanegas, 2008; Rivera, Hara, & Croes, 2007). Unlike the case of Nicaragua, this dissertation found that tourism only has a long term effect on economic growth and the causal relationship is reciprocal.

Dristakis (2004) indicates that, if a mutually reinforcing relationship exists, justification for public intervention is needed to support tourism promotion and increase the supply of tourism services. In the case of Ecuador, state intervention is recommended for the development of tourism for three reasons. First, since tourism accelerates growth, and growth reduces poverty and increases human development; government policy should consider the development of tourism infrastructure, either through public funding or fiscal incentives. For its implementation and success, national policies should generate a sense of security to the investors, both locally and international.

By focusing on tourism, Ecuador can further development pristine areas for specialized tourism activities, which will in turn further promote growth. In addition, regional economic development policies should be accompanied with a tourism development plan. For example, understanding the economic potential of new growth strategies will benefit forecasting for the development of tourism products. Currently the demand for tourism products in Ecuador is limited to two main regions, Galapagos and Quito. This suggests that Ecuador has the potential

of becoming an engine for economic growth in isolated regions by complementing other activities such as agriculture or farming.

Secondly, policy makers should re-evaluate the current level of trade protectionism in Ecuador. The lack of openness in Ecuador can be a contributing factor that hampers tourism growth. Ecuador is characterized for high import tariffs and protectionism. Although Ecuador does not have strict travel regulations, the imposition of tariffs on imported goods have limited the entry of foreign firms. Consequently, the ability of inbound or outbound business travelers to boost the economy is limited. Therefore, combined policies that promote tourism and trade could represent great potential for promoting development.

Finally, state involvement is required to further develop and support institutions such as Destination Marketing Organization and the National Tourism Offices. By giving more authority to these organizations, the development of tourism might be able to draw more visitors and act quickly to establish links between supply side activities and satisfy demand for tourism products. Initially, government efforts should focus on expanding the tourist base by increasing arrivals. Tourism policy should facilitate investment in tourism infrastructure, especially in the transportation sector. Partnerships with the airline industry should spur access to capital from international investors in order to secure tourist flows from new regions. As for the marketing efforts, additional support should be provided to existing tourism enterprises and develop a capacity building program for local entrepreneurs. By targeting the creation of small and medium enterprises the government will allow the development of new products that are less capital intensive than large hotel developments or super infrastructure for tourism.

In conclusion, the government in Ecuador is in a position to further its development goals by considering tourism as a viable strategy. However, this required an organizational commitment from the central government in terms of human resource, infrastructure and marketing. At the end, the benefits from tourism expansion will further promote the reduction of poverty, increases in economic growth, and economic development,

### **Limitations and Future Research**

This dissertation is not without limitations. For example, external validity could be considered as a limitation, as the results are specific to the country of Ecuador and not generalizable to other countries. However, as an individual case study, the study provides insights that can be used as reference for policy formulation. At the same time, the methodological rigor presents an opportunity to replicate the study in other destinations. On the other hand, as noted by various researchers (Deaton, 2001, 2003, 2005; Deininger & Squire, 1996), any empirical investigation about growth and poverty is not without problems for obvious reasons. For example, the availability and quality of the data has been questioned because of notorious measurement errors, lack of quality controls, and deficiency in reliability and coverage. However, as pointed out by Ravallion and Chen (1997), any bias in the estimation methods of the data for testing the effects of economic growth on poverty and human development are likely to cancel each other, thus resulting in an unbiased estimate. Owing to data constraints, the estimation period from 1988 to 2005 might be considered somewhat brief. This problem is particularly common for most developing countries. Lastly, caution is made with regards to the effect of tourism on human development or poverty, because any comparison of



intensity can solely be based on ordinal intensity rather than cardinal comparability. However, the weaknesses of ordinal intensity, in terms of interpretation, are compensated by completeness and transitivity.

The results from this study indicate that the study of tourism and development is rather complex and many opportunities exist to further expand the body of knowledge about tourism and development. Even though the concepts of poverty, human development, and economic growth are important, at least six new opportunities exist to further explore the nexus between tourism and development in developing countries. These include the following:

- 1) **Tourism and Entrepreneurship:** The small and medium enterprises in the tourism sector represent a great potential for expanding the capabilities of individuals and generate additional incomes. These enterprises not only require professionals with business skills but its business tenure represents the ability of the sector to provide lifelong learning and new jobs. In the case of developing countries, it will be interesting to test if a relationship exists between tourism expansion and openness for small and medium enterprises. Following Sen's view about development, the capability approach can consider the number of new enterprises and their longevity as a proxy for openness and entrepreneurship.
- 2) **Capabilities, Women and Tourism:** According to the literature, tourism contributes to women's agency (Sharpley & Tefler, 2002). Tourism provides women with opportunities for employment and business opportunities. In the capability's literature, Nussbaum (2003) put forward a list of capabilities for women that focus on freedoms and opportunities for women. Previous research indicates that, in

developing countries, human development increases as the income share accrued to women increases. The case of Ecuador has indicated that female participation in the job market has increased significantly. This presents an opportunity to study the relationship between tourism growth and the expansion of women's capabilities.

- 3) Explore other poverty measures: In this study we employed the Sen Poverty Index as a proxy for poverty. This index, however, does not capture poverty changes (severity) within the poor population. Future studies could consider other types of measurement such as, such as Foster-Greer-Thorbecke measure (Foster, Greer, & Thorbecke, 1984). This will provide new information about the impacts of tourism on various sub-groups of the populations. This type of research could help the development of more specific policies for the alleviation of poverty, as it focuses specifically on the marginalized and less resourceful segments of the population.
- 4) Development based on geographical areas: This dissertation looked at development from a country perspective. Future research could consider evaluating the impact of tourism on development by differentiating the impacts of tourism in rural and urban areas. Traditionally, the rural sectors lag behind urban areas in terms of incomes, education, or health to mention a few. Understanding the spatial impacts could help develop tourism products that satisfy the need of visitors and improve the lives of the local residents. This also creates an opportunity to look at the effects of tourism specialization (e.g. ecotourism) and development.
- 5) Country comparisons: The model presented in this dissertation can be explored more closely by considering cross-country empirical models. Not only this will serve as a

useful tool to understand development trends, but to also identify performance levels within a geographical region. In addition, the use of cross-country regressions can help explain the magnitude of other factors (e.g. trade and agriculture) that could drive development across developing countries.

- 6) **Multivariate Models:** The empirical literature about the relationship between tourism and development is characterized by using bivariate models that concentrate on single aspects of development such as economic growth and poverty. It would be interesting to test the model from this dissertation in a multivariate context. By considering additional variables such as agriculture, exchange rates, fixed capital formation, primary exports or government consumption. The benefit from a multivariate analysis is that it provides stochastic trends and allows for comparing the elasticity and causal effects from the various determinants of development.

### **Conclusion**

To conclude, I would like to put forward some final words. Tourism has great potential for the development of Ecuador. The results obtained from this dissertation discovered that tourism is a powerful strategy in several ways. For example, tourism benefit the poor through two different channels. Firstly, it helps the poor directly through increases in visitation from tourists. Secondly, the poor benefits indirectly through tourism's contribution to economic growth. As for human development, tourism only influences the capabilities of the people in Ecuador indirectly via economic growth.

This chapter provided a review of the study and a discussion of its findings. Additionally, policy implications and recommendations for future research were also discussed. To this date, the research from this dissertation is the first to scrutinize the impact of tourism on development through the estimation of an econometric case study research design that considers poverty, economic growth and human development. We anticipate that the econometric model presented will facilitate future research in other destinations and help validate the benefits from tourism by considering holistic conceptualization of development.

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