How fast are the tourism countries growing? The international evidence, 1980-95

Alessandro Lanza* and Francesco Pigliaru**

*Fondazione Eni E. Mattei and CRENoS
** Università di Cagliari and CRENoS (Contact author: pigliaru@unica.it)

1. Introduction

In a recent paper, Easterly and Kraay (2000) investigate on whether being small represent an economic disadvantage from for a country. Are smaller countries poorer than average? Do they grow slower? Reasons for being pessimistic are nor difficult to find in the literature, especially in the endogenous growth literature, in which scale effects are often essential in the endogenous determination of an economy's growth rate (Aghion and Howitt (1998)).

Similarly, countries who rely strongly on international tourism also are suspected to be locked in a slow growth path. Again, endogenous growth theories tend to emphasizes the (growth) virtues of high-tech sectors, the potential for high growth of which are regarded as more promising than those of not high-tech service sectors such as tourism. (Copeland, L-P, Sgro).

Tourism countries have one prominent common characteristic – they are small countries. So, expectations about the economic performance of the particular subset of small tourism countries are not high, to say the least. Are these pessimistic expectations supported by the international evidence?

The empirical answer we look for in this paper is important especially for developing countries: tourism is an available option to LDCs where large gaps in other more technological and less resource-based sectors have been accumulated. Is it a good option? In the current literature, this simple question has not been addressed yet using large cross-country evidence. This is what we aim to do in this paper.

2. Data and definitions

Following Easterly and Kraay (2000) (E-K from now on), we define small countries as countries with an average population of less than one million during 1960-95. In the original paper by E-K, 33 countries out of a total of 157 met this condition.

The E-K dataset is our starting point. To investigate the relative economic performance of countries specialised in tourism, we need cross-country data at least on international tourism receipts.[1] The first available year for such a variable is 1980; moreover, tourism receipts are not available for all the countries listed in the E-K dataset. As a consequence, the resulting dataset – the one we will use in this paper – is smaller in both the time and the cross-section dimensions: the period covered by our data is limited to 1980-95, and 143 countries instead of the original 157 are included. Moreover, the sub-set of small countries diminishes from 33 to 29.

Let us now turn to the definition of "tourism country". In the following, the degree of tourism specialization is simply defined by the ratio of international tourists receipts to GDP (data sources are listed in the Appendix).

In Table 1 we list all countries in our dataset with a degree of tourism specialization greater than 10% on average over the period 1980-95. 17 countries share such a characteristic; 14 of them meet our adopted definition of small state (the exceptions being Jordan, Singapore and Jamaica, all with a population exceeding one million).

The remaining 15 small countries, with a degree of tourism specialization smaller than 10%, are listed in Table 2 below. So, the sub-sample of small countries is split into two almost identical parts: 14 countries are above the 10% tourism share in GDP and 15 are below it.

[1] International tourism receipts are defined as follows: expenditures by international inbound visitors, including payments to national carriers for international transport. These receipts should include any other prepayment made for goods or services received in the destination country. They also may include receipts from same-day visitors, except in cases where these are so important as to justify a separate classification. Data are in current U.S. dollars. For more information, see WDI table 6.14. Source: WBDindicators 2000

Table 1

Country name	Index of Tourism Specialization (average 1980-95)
Jordan*	10.1
Singapore*	11.4
Samoa	12.6
Fiji	13.0
Jamaica*	18.4
Grenada	18.8
Cyprus	19.1
Malta	21.1
St. Vincent and the Grenadines	22.2
Vanuatu	22.9
Seychelles	25.9
Barbados	28.8
Bermuda	31.3
St. Kitts and Nevis	35.0
St. Lucia	40.9
Bahamas, The	41.2
Maldives	60.8

[* Not small countries]

Table 2

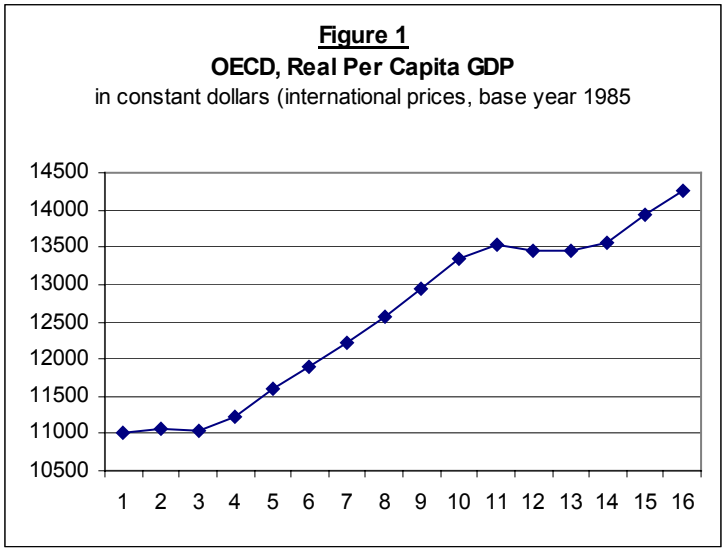
Country name	Index of Tourism Specialization (average 1980-95)
Bahrain	4.0
Belize	9.4
Botswana	2.7
Comoros	3.3
Cape Verde	1.8
Djibouti	1.2
Gabon	0.2
Gambia, The	7.8
Guyana	5.3
Iceland	1.8
Luxembourg	2.5
Mauritius	8.2
Solomon Islands	3.6
Suriname	1.7
Swaziland	3.4

3. Small tourism countries and comparative economic performance

In this section we consider the growth performance of the small tourism countries (STCs from now on) as a whole, relative to the performance of a number of significant sub-sets of countries – namely, OECD, Oil, Small (as defined above), and LDCs.[2] An assessment of the degree of economic heterogeneity within the tourism countries sub-set is left to later.

Before analysing the relative growth performance of each group, let us have a glance at the general picture. To this aim, it is convenient to start from Figure 1, in which the time path of per capita GDP in the OECD countries as a group is depicted. The period 1980-1995 is a period of relatively slow growth, due to the existence of two sub-periods of very slow or even negative growth (at the beginning of the 1980s and of the 1990s). As a result, the OECD group experienced an average growth rate of 1.6% per year. The average growth rate of the whole sample of 143 countries was much lower than this, at 0.4% per year – an outcome mainly due to the bad performance of the OIL (15 countries, growing on average at -2.5% per year) and the LDC groups (37 countries, growing on average at –0.5% per year).

This picture is in sharp contrast with what had characterized the previous two decades, when the average annual growth rate in the sample was about 2.6%, and all groups were performing rather well (on this more presently).



Let us now move to a more detailed assessment of the relative performances of the individual groups. Table 3 shows the average growth rates for all groups in 1980-95. First of

[2] Countries in each group are listed in the Appendix.

all, the sub-group of 29 small countries (SCs) grow on average faster than the average state in the sample, but slower than the average OECD state. Second, when we isolate the performance of STCs from that of all the SCs, we see that tourism specialization is clearly not harmful for growth. This result is independent of the adopted definition of "tourism country". Remarkably, the remaining 15 small countries with a share of tourism receipts in GDP lower than 10% show a negative average growth rate. The better than average growth performance of the SC group is due exclusively to the much better than average performance of the STCs.

Table 3	Real per capita GDP growth 80-95	No. countries
OECD	1.7	21
Oil	-2.5	14
Small	1.1	29
Small Tur. >20%	2.3	10
Small Tur. >10%	2.4	14
Small <10%	-0.2	15
LDCs	-0.5	37
All	0.4	143

Tourism specialization seems to be the key to understand why small countries are not at disadvantage with respect to larger ones in the E-K empirical evidence. Is such a performance of the STCs a characteristic of the 1980-95 period only? We do not have data on tourism receipts for the years 1960-79, so we cannot answer this question directly. We can compare the performance of our groups of countries over two sub-periods (1960-80, 1980-95), but we have to keep in mind that, given the current limitation of the available data, the definition of STCs is based on data of the second sub-period.

To make this comparison, we have to take into account an additional problem, since the 1960-80 sample is different from the 1980-95 . The number of countries for which data are available for 1960-80 decreases to 136 from the original 143. What matters most from our point of view, the number of STCs with an index for specialization >15% also decreases from 12 to 7. Consequently, the comparison shown in Table 4 below are based on the smaller sample of 136 countries.

Table 4	Growth Rate 60-95	Growth Rate 60-80	Growth Rate 80-95	[(2)-(1)]/(1)	No. Countries
		(1)	(2)		
OECD	2.6	3.2	1.7	-0.5	21
Oil	0.3	2.6	-2.5	-2.0	14
Small	2.1	3.1	0.8	-0.7	26
Small Tur. >15%**	3.3	3.4	2.1	-0.4	7
LDCs	0.2	1.0	-0.7	-1.7	34
All	1.6	2.6	0.3	-0.9	136

Two features shown in Table 4 are worth mentioning. First, STCs are the fastest growing group in 1960-80 too. Second, although their average growth rate slows down in the second sub-period, all the other groups do significantly worse than the STCs. Notice that while the growth rates of SC and of STC are very similar in the first sub-period, the STC rate is much higher than the SC one in the second sub-period. Again, the deepening of the tourism specialization in some of the SC countries might be the explanation for this pattern.

4. Econometric evidence

We now turn to the econometric analysis of the relative growth performance of STCs. Following E-K, we first test whether in our dataset there exist growth advantages/disadvantages for SCs and STCs. To do this, we use a full set of for continental dummies, as well as dummies for oil, OECD and less developed countries (LDC).

The picture that emerges from Table 5 strongly supports our previous discussion. After controlling for continental location and other important characteristics, the above average growth performance of the SC as a group (regression (1)) is based on the average performance of the tourism countries. Once the SC group is split in two, using a demarcation value for tourism specialization equal to 10%, STCs outperform the remaining small countries (regression (2)).

In regression (3) we add the LDC dummy as a further control, and in regression (4) we change the demarcation value of tourism specialization from 10% to 20%. The STC dummy stays significant at 1% in all regression.[3]

In Table 6 we test whether tourism specialization remains growth-enhancing after a number of traditional growth factors are taken into account. For instance, STCs might be on a

[3] The same result is obtained when the three "non small" tourism countries (Jamaica, Jordan and Singapore) are added to the STC dummies regressions (4), (5) (as for regression (6) only small countries have an index of tourism specialization greater than 20%).

faster growth path simple because they are poorer than average – a mechanism fully predicted by the traditional Solovian growth model. Possibilities of this type are controlled for in all regressions in Table 6, in which we adopt a Mankiw-RomerWeil approach to the analysis of cross-country growth differentials. [4] Regressions (2) and (3) show that STC dummies stay significant at the 1% confidence level once other factors of growth such as the initial level of per capita GDP and an index of openness are taken intro account. Adding an index of volatility does not alter this result (regressions (4) and (5)).

In regressions (6) and (7) we further test for the presence of a growth-enhancing effect of tourism. In regression (6) we use the index of tourism specialization instead of the usual STC dummies. The index is significant at the 1% confidence level, and the value of its coefficient implies that an increase of 10% in the ratio of tourism receipts to GDP is associated to an increase of 0.7% in the annual growth rate of per capita GDP.

Finally, in regression (7) we add a dummy-slope (the index of openness multiplied by the STC>10% dummy). The idea is to test whether being specialised in tourism generates a premium over the average positive effect of openness on growth. The answer is yes. The coefficient of the new interactive variable is significant and its value is large.

Another way to test whether factors other than tourism specialization are the source of the positive performance of STCs, is to see how different are STCs from other small and larger countries in terms of various growth determinants. In Table 7 we see that STCs are not growing faster because they are poorer than average (regr. (1)); they are not growing faster because they have particularly high saving/investment propensities (regr. (2): other small countries save/invest more than STCs); they are very open to trade, but not more than the other small countries in the sample; finally, they are less subject to volatility of their growth rates than the other SCs and of the Oil countries.

This further evidence confirms the results shown in our previous regressions. The positive performance of STCs is not significantly accounted by the traditional growth factors of the M-R-W type of models. Tourism specialization appears as an independent determinant.

[4] Human capital – a crucial variable in Mankiw, Romer and Weil (1991) is not included in our regressions because data on for 6 of our STCs are not available.

Table 5. Growth and STCs - I

Dependent variable: Average annual real per capita GDP growth, 1980-95

Dummies	(1)	(2)	(3)	(4)
OECD	0.0033	0.0055	0.0045	0.0034
	(0.82)	(1.43)	(1.09)	(0.79)
OIL	-0.0252	-0.0243	-0.0266	-0.0265
	(-3.26)***	(-3.11)***	(-3.47)***	(-3.47)***
SC	0.0088			
	(2.03)**			
STC >10%		0.0171	0.0177	
		(2.58)***	(2.83)***	
SC <10%		0.0018		
		(0.35)		
LDC			-0.0098	-0.0096
			(-1.93)*	(-1.94)*
STC >20%				0.0197
				(2.82)***
No. of obs	143	143	143	143
R^2	0.399	0.418	0.436	0.433

All regressions include a full set of regional dummies as defined in E-K.
Figures in brackets are t-statistics (standard errors are White-corrected).
* Significant at 10% ** Significant at 5% *** Significant at 1%

able 6. Growth and STCs - II

Dependent variable: Average annual real per capita GDP growth, 1980-95

Dummies and variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
OECD	0.0145 (2.33)**	0.0174 (3.06)***	0.0162 (2.66)***	0.0134 (2.14)**	0.0134 (2.14)**	0.0173 (3.01)***	0.0173 (3.03)***
OIL	-0.0174 (-3.02)***	-0.0163 (-2.83)***	-0.0164 (-2.84)***	-0.0146 (-2.47)**	-0.0148 (-2.62)***	-0.0145 (-2.51)**	-0.0163 (-2.82)***
LDC	-0.0139 (-2.61)***	-0.0155 (-2.97)***	-0.0151 (-2.96)***	-0.0147 (-2.60)***	-0.0138 (-2.65)***	-0.0157 (-3.12)***	-0.0149 (-2.86)***
Ln per-c. GDP 1980	-0.0092 (-2.63)***	-0.0092 (-2.81)***	-0.0091 (-2.67)***	-0.0089 (-2.76)***	-0.0087 (-2.62)***	-0.0088 (-2.65)***	-0.0089 (-2.71)***
Share of trade in GDP 1980-95	0.0117 (4.04)***	0.0086 (2.84)***	0.0086 (2.88)***	0.0089 (3.20)***	0.0088 (3.23)***	0.0061 (1.92)*	0.0080 (2.55)**
Standard dev. of growth rates 1980-95				-0.1864 (-1.25)	-0.1872 (-1.25)		
Average share of tourism receipts in GDP 1980-95						0.0715 (4.38)***	
STC >10%		0.0169 (2.80)***		0.0160 (2.76)***			
STC >20%			0.0190 (2.80)***		0.0180 (2.71)***		
Share of trade * STC >10%							0.0148 (3.50)***
No. of obs	141	141	141	141	141	141	141
R^2	0.456	0.493	0.491	0.504	0.502	0.509	0.500

All regressions include a full set of regional dummies as defined in E-K. Figures in brackets are t-statistics (standard errors are White-corrected).
* Significant at 10% ** Significant at 5% *** Significant at 1%

Table 7. Growth determinants and STCs

Dependent variable: see top of each column

Dummies	(1) Log real per-c. GDP, Average 1980-95	(2) Log inv. as a share of GDP, aver. 1980-95	(3) Share of trade in GDP, aver. 1980-95	(4) Standard dev. of GDP growth, 1980-95
OECD	1.3853	0.2410	-0.1315	-0.0139***
	(10.67)***	(2.09)**	(-1.25)	(-4.79)
OIL	0.7623	0.2715	0.1368	0.0111
	(3.98)***	(1.64)*	(1.46)	(2.47)**
STC >10%	0.4487	0.2816	0.5393	-0.003
	(2.20)**	(2.29)**	(5.27)***	(-1.00)
SC <10%	0.3261	0.4424	0.5492	0.0069
	(1.91)*	(3.51)	(5.15)***	(1.68)*
No. of obs	143	138	141	143
R^2	0.995	0.938	0.793	0.813

All regressions include a full set of regional dummies as defined in E-K.
Figures in brackets are t-statistics (standard errors are White-corrected).
* Significant at 10% ** Significant at 5% *** Significant at 1%

4. Why are the STCs growing fast?

Our evidence shows that tourism can be a growth-enhancing specialization, at least for small countries and for the period under analysis. What our evidence does not say is why. Understanding the mechanisms behind this phenomenon is important, especially from the viewpoint of economic policy. Is the above described performance an episode or are we dealing with something of a more persistent nature?

Various interpretations are possible at this stage. In this section, we discuss explicitly two different mechanisms compatible with the above evidence, and suggest what additional data we need to identify their roles behind the observed results.

To this aim, we first define a simple analytical setting within which the two hypotheses can be defined and compared. In a series of papers, Lanza and Pigliaru (1994), (2000a,b) show that Lucas's (1988) two sector endogenous growth model is simple and detailed enough for our purpose.

Consider a world formed of a continuum of small countries (L=1). Each country is characterized by a two-sector economy (M for manufacturing, T for Tourism) in which the engine of growth – the accumulation of human capital – takes the exclusive form of learning-by-doing, so that pure competition prevails. The technology to produce the M good is:

(1) $$y_M = h_M L_M$$

while for the T good is:

(2) $$y_T = \rho h_T L_T$$

where h_i is human capital, which determines labour productivity in the sector, and L_i is the labour force allocated to the sector. Production of T requires an additional input, a natural resource R, the fixed endowment of which is $\overline{R}$. The technology described in equation (2) implies that, in order to be allocated to sector T, each worker must be endowed with (at least) a quantity $\underline{\rho}$ of R. In the following, we do not investigate how the value of ρ is chosen, ie we take is as exogenous. For the time being, let us assume $\underline{\rho}$=1.

In each sector the potential for learning-by-doing is defined by a constant, λ_i. In our case, manufacturing is the "high technology" sector, so that $\lambda_M > \lambda_T$. In each period, with knowledge accumulation driven by learning-by-doing with external economies linking all firms

within the same sector, and no intersectoral spillovers[5], increases in h are proportional to the sector's labour force, so that:

(3) $$\frac{\dot{h}_i}{h_i} = \lambda_i L_i \ .$$

Given the complementary between L and R in equation (2), the endowment of R plays a role in determining the comparative advantage of individual countries.[6] Countries with a small $\overline{R}$ face a constraint in the number of workers they can allocate in sector T (for instance, a country with $\overline{R}$ <1 cannot allocate the whole labour force to T); no constraint exists in countries with larger $\overline{R}$ s. Given the mechanisms governing the determination of the relative price in autarchy, countries with larger L_T ($\overline{R}$) will tend to develop a comparative advantage in T, while the opposite is true for countries with smaller L_T ($\overline{R}$).[7]

International trade will force all countries to specialise completely according to their comparative advantage. The growth rate of a country is then equal to:

(4) $$\frac{\dot{y}_i}{y_i} = \lambda_i .$$

Therefore, productivity grows faster in countries specialised in M than in the other countries. However, with preferences assumed to be homothetic and identical everywhere, the terms of trade move in favour of the slow-growing good, tourism, at a constant rate. With CES preferences the rate of change of $p \equiv p_T / p_M$ is equal to $(\dot{y}_M / y_M - \dot{y}_T / y_T)\sigma^{-1}$, where σ is the elasticity of substitution. With complete specialisation

(5) $$\frac{\dot{p}}{p} = \frac{\lambda_M - \lambda_T}{\sigma} > 0.$$

Equations (4) and (5) above refer to long-run growth rates in the presence of a constant ρ. Consider now a T country in which, at a certain point in time, not all $\overline{R}$ is used, so that $\rho < \overline{\rho}$, where $\overline{\rho} \equiv \overline{R}/L$ is the upper bound of natural resource per worker in the event of complete

---

[5] The joint presence of intersectoral of knowledge generates substantial changes in the results of Lucas's model. In particular, their presence, when combined with that of international spillovers, tends to rule uneven growth out. See Murat and Pigliaru (1998).

[6] The details of the role played by are in generating the comparative advantage depends on the elasticity of substitution. The case of a low elasticity is analysed in Lanza and Pigliaru (2000b); the case of a high elasticity is described in the Appendix of the present paper.

[7] Notice that, as far as small countries have higher than average $\overline{R}/L$, this result would be compatible with the stylized fact that T countries are generally small (more on this in Lanza and Pigliaru (2000b)).

specialization in T. If in this country the rate of utilization of its natural endowment increases, then

(6) $$\dot{y}_T/y_T + \dot{p}/p + \dot{\rho}/\rho\,.$$

However, this growth rate can only be observed in the short-term. In the long-run, $\dot{\rho}/\rho$ tends to zero as the upper bound $\overline{\rho}$ is approached. Consequently, in the long-run tourism specialization is harmful (beneficial) for growth if σ is greater (smaller) than 1.

Let us now turn to our two alternative hypotheses about why STCs can grow faster.

The pessimistic interpretation. As we know, if $\sigma > 1$ manufacturing is the growth-maximising choice. In this case, other things being constant, the index of tourism specialization should play a negative role in our regressions. How can we reconcile this theoretical case with our evidence? One answer is that perhaps the rate of utilization of the natural endowment in STCs has increased significantly during the period under analysis ($\dot{\rho}/\rho > 0$), so that

(7) $$\dot{y}_T/y_T + \dot{p}/p + \dot{\rho}/\rho \;>\; \dot{y}_M/y_M \;>\; \dot{y}_T/y_T + \dot{p}/p$$

Clearly, with this additional term, the growth rate of a T country can be greater than $\dot{y}_M/y_M$, the growth rate of the average M country. However, this performance can only be observed in the short-term. In the long-run, $\dot{\rho}/\rho$ tends to zero as the upper bound $\overline{\rho}$ is approached. In this setting, the long-run relative performance would still be characterized by the stationary gap in productivity growth, with the T country on the wrong side of the gap.

The optimistic interpretation. The second interpretation relies on a "terms of trade effect". In words, tourism is not harmful for growth if the international terms of trade move in its fast enough to more than offset the gap in sectoral productivity growth. If this happens, the sum $\dot{y}_T/y_T + \dot{p}/p$ would be persistently greater than $\dot{y}_M/y_M$. In terms of the model used in this section, $\sigma < 1$ is sufficient for this result to hold.[8] In this case we have:

(8) $$\dot{y}_T/y_T + \dot{p}/p + \dot{\rho}/\rho \;>\; \dot{y}_T/y_T + \dot{p}/p \;>\; \dot{y}_M/y_M$$

[8] For evidence favourable to this hypothesis, see Brau (1995), Lanza (1997).

Adding non-homothetic preferences with T as the luxury good would yield further analytical support to the possibility that the terms of trade move fast enough in favour of the T good [9] and, consequently, to an optimistic interpretation of our current evidence.

To sum up, we have a "productivity pessimism" and a "terms of trade optimism". A growth episode based on a fast supply expansion in the T sector might hide temporary the growth-damaging nature of tourism specialization. On the other side, consumers' preferences might be such that tourism specialization is highly valued in the international marketplace. This second mechanism – not crucially based on output expansion – tends to make sustainability of tourism-based development easier to achieve.

An important task for future research is to identify the relative importance of the various types of growth-enhancing mechanisms associated with tourism specialization, in order to assess their economic (and environmental) sustainability.

[9] See also Pigliaru (2003).

References

Aghion P. and P. Howitt (1998), *Endogenous Growth Theory*, Cambridge, MA: The MIT Press.

Barro R. and X. Sala-i-Martin (1995), *Economic Growth*, New York: McGrow-Hill.

Candela G. and Cellini R. (1997), Countries' size, consumers' preferences and specialization in tourism: a note, *Rivista Internazionale di Scienze Economiche e Commerciali*, 44, 451-57.

Easterly W. and Kraay A. (2000), Small states, small problems? Income, growth and volatility in small states, *World Development*, 28, pp. 2013-27.

Grossman G. and Helpman E. (1991), *Innovation and growth in the global economy,* Cambridge, MA: The MIT Press.

Gylfason T., Herbertsson T.T. and Zoega G. (1997), A mixed blessing: natural resources and economic growth *Centre for Economic Policy Research*, D.P. no. 1668

Lanza A. (1997), Is tourism harmful to economic growth, *Statistica*, n.3.

Lanza A. and Pigliaru F. (1994), The tourism sector in the open economy, *Rivista Internazionale di Scienze Economiche e Commerciali*, 41.

Lanza A. and Pigliaru F. (2000a), Tourism and economic growth: does country's size matter?, *Rivista Internazionale di Scienze Economiche e Commerciali*, 47, pp.77-85.

Lanza A. and Pigliaru F. (2000b), Why are tourism countries small and fast-growing? (co-author A. Lanza), in: A. Fossati and G. Panella (eds), *Tourism and Sustainable Economic Development*, Dordrecht: Kluwer Academic Publisher, 57-69

Liu Z. and Jenkins C.L. (1996), Country size and tourism development: a cross-nation analysis, in: L. Briguglio et al. (eds), *Sustainable tourism in islands and small states: issues and policies*, London: Pinter, 90-117.

Lucas R. (1988), On the mechanics of economic development, *Journal of Monetary Economics*, 22, 3-42.

Murat M. and Pigliaru F. (1998), International trade and uneven growth: a model with intersectoral spillovers of knowledge, *Journal of International Trade and Economic Development*, 7, 221-36.

Sachs J. and Warner A. (1995), Natural Growth Abundance, *Harvard Institute for International Development, Development Discussion Paper* n. 517a.

Sinclair M.T. (1998), Tourism and economic development: a survey, *Journal of Development Studies*, 34, 1-51.

Temple P. (1997), The Performance of U.K. Manufacturing, *Centre for Economic Forecasting, London Business School Discussion Paper* 14/97

Appendix: Data sources

The Easterly-Kraay "Small States dataset": the dataset consists of 157 countries for which at least 10 years of annual data on per capita GDP adjusted for differences in purchasing power parity are available. Of these, 33 are small countries defined as having an average population during 1960-95 of less than one million.

a) Dummies come from WB tables
b) Real GDP per capita comes from PWTables 5.6, measured in 1985 international dollars. Missing observations in the PWT are filled where possible using PPP-adjusted GDP estimates reported by the WB.
c) For a more exhaustive report on data sources see pag. 2027 of E-K (2000).

The dataset used in this paper: our dataset consists of 143 countries for which at least 10 years of annual data on per capita GDP adjusted for differences in purchasing power parity are available. Of these,

a) 29 are Small Countries defined as having an average population during 1960-95 of less than one million.
b) 10 are Tourism Countries (all of them Small) with a specialization of at least 20%
c) 13 are Tourism Countries (1 non Small, Jamaica) with a specialization of at least 10%
d) 17 are Tourism Countries (3 of them non Small: Jamaica, Singapore and Jordan) with a specialization of at least 10%
e) 19 are Small not Tour. (all Small) not reaching a specialization of at least 20%
f) 17 are Small not Tour. (all Small) not reaching a specialization of at least 15%
g) 15 are Small not Tour. (all Small) not reaching a specialization of at least 10%
h) 37 LDCs (of these, 6 Small not Tour and 2 Small Tourism)
i) 21 OECD

The main source of data for our dataset can be found here:
http://www.worldbank.org/research/growth/GDNdata.htm

Variables:

1. **Real per capita GDP Levels**: are calculated by E-K in constant dollars (International Prices, base year 1985) and it comes from the PWTables 5.6. Missing observations are calculated from GDP per capita and GDP per capita growth rate coming from Global Development Finance and World Development Indicators. (This is the best we know).

2. **Real per capita GDP growth Rate**: we calculated this variable (on our own) by taking logs of first available year and last year as below:

$$Ln\left(\frac{GDP_{t1}}{GDP_{t0}}\right)/T$$

this variable has been computed for 1960-95, 1980-95, 1960-80.

3. **Average Tourism Specialization**: this variable is calculated as the average ratio between International Tourism receipts (current US$, WB Development indicators 2000) on GDP at market prices (Current US$, WB Development indicators 2000).

4. **Average Share of Trade**: we took this variable calculated as the share of Imports+Exports to GDP from the WB Development indicators 2000. This variable has been computed for 1960-95, 1980-95, 1960-80

5. **Average Investments to GDP**: we took this variable from the PWTables 5.6. The GDP values are PPP adjusted and the variable is computed for 1960-95, 1980-95, 1960-80.

6. **Average Secondary School Enrolment rate:** Secondary School enrolment rate (gross) comes from WB Development indicators 2000.

7. **Average Standard Deviation of Growth Rate**: we calculated this variable by using the growth rates in (2).

8. **Dummy variables**: from E-K "Small States", WB and UN.

The different subsets of countries are listed below:

OECD	
1	Australia
2	Austria
3	Belgium
4	Canada
5	Denmark
6	Finland
7	France
8	Iceland
9	Ireland
10	Italy
11	Japan
12	Luxembourg
13	Netherlands
14	New Zealand
15	Norway
16	Portugal
17	Spain
18	Sweden
19	Switzerland
20	United Kingdom
21	United States

Oil	
1	Bahrain
2	Gabon
3	Angola
4	United Arab Emirates
5	Congo, Rep.
6	Algeria
7	Iran, Islamic Rep.
8	Iraq
9	Kuwait
10	Nigeria
11	Oman
12	Saudi Arabia
13	Trinidad and Tobago
14	Venezuela

SMALL	
1	Bahamas, The
2	Bahrain
3	Barbados
4	Belize
5	Bermuda
6	Botswana
7	Cape Verde
8	Comoros
9	Cyprus
10	Djibouti
11	Fiji
12	Gabon
13	Gambia, The
14	Grenada
15	Guyana
16	Iceland
17	Luxembourg
18	Maldives
19	Malta
20	Mauritius
21	Samoa
22	Seychelles
23	Solomon Islands
24	St. Kitts and Nevis
25	St. Lucia
26	St. Vincent and the Grenadines
27	Suriname
28	Swaziland
29	Vanuatu

LDC	
1	Angola
2	Bangladesh
3	Benin
4	Burkina Faso
5	Burundi
6	Cape Verde
7	Central African Republic
8	Chad
9	Comoros
10	Congo, Dem. Rep.
11	Djibouti
12	Ethiopia
13	Gambia, The
14	Guinea
15	Haiti
16	Lao PDR
17	Lesotho
18	Liberia
19	Madagascar
20	Malawi
21	Maldives
22	Mali
23	Mauritania
24	Nepal
25	Niger
26	Rwanda
27	Samoa
28	Sierra Leone
29	Solomon Islands
30	Somalia
31	Sudan
32	Tanzania
33	Togo
34	Uganda
35	Vanuatu
36	Yemen, Rep.
37	Zambia