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"On the impact of exchange rate regimes on tourism"

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Abstract

The main objective of this paper is to analyze the effect of the exchange rate arrangements on international tourism. The ambiguity of literature about the effect of exchange rate volatility contrasts with the magnitude of the impact of a common currency on trade. On the basis of a gravity equation we estimate a moderate effect of a currency union on tourism of almost 12%. Furthermore, we estimate a gravity equation for international trade, obtaining that the common currency effect on trade is reduced when tourism is introduced as a regressor. This suggests that tourism flows may contribute to explain the excessive magnitude of the estimated effect of a common currency on trade in this literature. Finally, we analyze the impact of several *de facto* exchange rate arrangements on tourism, finding that less flexible exchange rates promotes tourism flows.

Keywords: Tourism, Exchange Rate Regime, Common Currency

1. Introduction

The international tourism and trade are expected to be quite dependant on the exchange rate regimes. Although the effect of a common currency on trade has been studied extensively, the empirical link between a currency union and the international tourism has been less explored. What is more important, the relevance of the exchange rate regime further than the common currency regime in the volume of trade and tourism has received a little attention. The main antecedents are founded in the empirical trade literature.

The beliefs about the performance in terms of inflation and growth are decisive in the choice of the exchange rate regime. Furthermore, the international trade is another argument commonly used to justify the exchange rate policy. In this sense, more fixed exchange rates are expected to promote international trade and tourism *via* reduced uncertainty in the international transactions. However, the empirical literature is not conclusive in this task. The evidence about the effect of less exchange rate volatility on trade is mixed (McKenzie, 1999). The results are very sensitive across studies, depending on countries and periods considered.

Opposite to this inconclusive link, Rose (2000) estimates a surprising large effect of a currency union on trade. Members of currency unions seemed to trade over three times as much as otherwise pair of countries. This main result remains as a puzzle of the International Economics and suggests that exchange rate regimes could affect trade performance. Gil-Pareja et al. (2007) is the unique antecedent for the analysis of the effect of a common currency on international and tourism, as known by authors. For the members of the Economic of Monetary Union (EMU), they estimate a moderate effect of the currency union on tourism.

Our paper contributes on this issue in several ways. First, we study the influence of exchange rate regimes, not only a common currency, on tourism. Second, we address the question of the distinction between official and *de facto* exchange rate regimes. Third, we use a larger data set that previous work, considering additionally other experiences of common currency than the EMU.

The paper is organized as follows. In Section 2, the relevant literature about the link between exchange rate regimes and tourism or trade is presented. In Section 3, we estimate the effect of a currency union on tourism correcting Rose's dataset in order to consider only true cases of common currencies. As a reference for comparison, we do this for the international trade as dependent variable. In Section 4, we address the influence of exchange rate policy on international tourism. Finally, the last section draws some conclusions.

2. The background

The antecedents to this paper can be organized in three parts. Firstly, the literature about the effect of exchange rate volatility on trade and tourism is briefly described. Secondly, the literature on the influence of a common currency on trade and tourism is studied. Third, a few articles analyses the effects of the exchange rate regimes beyond the currency union.

First, McKenzie (1999) and Clark et al. (2004) are exhaustive guides of the theoretical and empirical effects of exchange rate volatility on international trade. The general belief is that international trade responds adversely to exchange rate uncertainty. However, the theoretical results are sensitive depending on the risk attitude of agents and the presence of developed forward exchange markets, among other things[1]. Similarly, the empirical work reproduces this ambiguity, which may reflect the lack of clear theoretical results as well as the difficulty to measure the exchange rate risk. Although less exchange rate volatility leads to less risk, the empirical effect on trade is ambiguous.

Second, Rose (2000) constitutes an unsolved puzzle in International Economics. He addresses the question of the relevance of a common currency in the volume of trade. This is a slightly different point from the impact of the elimination of exchange rate volatility, since it avoids some transaction costs. This is clearer in the case of tourism where hedging strategies are less common than in international trade. Rose estimated an empirical model of bilateral trade, finding a positive and significant coefficient on a

[1] See for instance De Grauwe (1988).

currency union dummy. Its value was 1.2, implying an effect of currency union on trade of a 300%. Economists widely believe that monetary unions lower inflation and promote trade. Still many are surprised that the magnitude of the observed trade effect is so large (Rose and Van Wincoop, 2001).

This result has received little acceptance and, as a consequence, has directed the research to find reasons of why it is not correct. For instance, Thom and Walsh (2002) emphasized the need for a longer dataset. A short term analysis addresses the question of whether countries with the same currency trade more but not analyzes the interesting issue of what happens to trade when a currency union is created or dissolved. As a result, Glick and Rose (2002) estimated the effect of currency unions on trade covering 217 countries for 50 post-war years. This data set allowed them to exploit time and cross-sectional variation. Using conventional OLS they obtain that countries with a common currency traded again over three times as much as otherwise pairs of countries in the OLS estimate. In the fixed effects estimation, a currency union almost doubles bilateral trade.

Another important critique to Rose's work is about the econometric technique. Persson (2001) indicated the presence of non-random selection and non-linearities. However, Rose (2001) calculated a low correlation between the common currency and the gravity regressors, suggesting the absence of bias selection problems. Furthermore, he uses the matching techniques proposed by Persson and he addresses the problem of non-linearity. The key results remain robust.

Rose and Stanley (2005) implement a meta-analysis to combine, explain and to summarize thirty-four recent studies that investigate the effect of currency union on trade. Combining these estimates, the authors found that a currency union increases bilateral trade by between 30 and 90%, i.e., there is evidence of a positive trade effect.

However, according to Gil-Pareja et al. (2000) there is no paper on the impact of a single currency on tourism. Despite tourism being one of the most important domestic and international industries it has failed to attract attention of mainstream economists. These authors estimate the effect of the euro on intra-EMU tourist flows by using a panel dataset of 20 OECD countries over the period 1995-2002. The results reveal that the euro ha increased tourism with an effect of around 6.3%. Despite being much more moderate than the Rose findings, this is a noticeable impact given the early stage of the EMU analyzed. Moreover, the robustness checks show that the evidence of a positive impact is quite widespread across the EMU destination countries.

Summarizing, there exists apparent contradictory empirical findings. Exchange rate volatility does not make influence in international trade but a volatility of zero, i.e. a common currency, is a major factor in the determination of the volume of international trade. For that reason, the study of exchange rate regimes may shed light on the surprising absence of a clear effect of exchange rate variability. The measures of exchange rate volatility may not be a good *proxy* for exchange rate risk.

This third part of the antecedents is less abundant in contributions. Aristotelous (2001) analyzes the effect of exchange rate systems using a long span of data for the British exports to the US. He cannot find evidence that any official exchange rate regime had any impact on the exports. However, López-Cordova and Meissner (2003) found strong

evidence monetary regime choice had large impact on trade in the Gold Standard Era before 1913. Adam and Cobham (2006) estimate the relevance of exchange rate regimes on trade for the post-Bretton Woods period. They use the Reinhart and Rogoff's (2004) classification of *de facto* exchange rate regimes. The main result is that other regimes are significantly more pro-trade than flexible exchange rates although some results are implausible when the complete Rose's dataset is used. Gil-Pareja et al. (2007) investigates the effect of a particular arrangement as the exchange-rate mechanism of the European Union on international trade. The findings confirm the importance of this regime for the peripheral countries.

This brief review shows that the analysis of the relevance of a currency union and other exchange rate arrangements on tourism has received little attention with the exception of Gil-Pareja et al. (2006). However, the exchange rate is commonly considered a determinant in the estimation of tourism demand and it is introduced either as an independent variable or by including it in the relative prices (Crouch, 1994). In this sense, Sinclair and Stabler (1997) argue that tourists consider the exchange rate since they have limited knowledge about relative prices[2]. Thus exchange rate regimes with low uncertainty could promote tourism.

3. The common currency effect

In this section we follow two objectives. First, we estimate the effect of a common currency on tourism flows. Second, we address the challenge from Rose and Van Wincoop (2001), i.e. to find *some omitted factor that drives countries to both participate in currency unions and trade more*. In that case, we introduce tourism as an explanatory variable in the trade equation.

The empirical analysis is based on the standard gravity framework. The gravity model has strong foundations in the international trade theory. It can be supported by Heckscher-Ohlin models, models based in differences in technology across countries, and the new models that introduce increasing returns and product differentiation[3]. If tourism could considered as an especial class of trade, we can use a gravity equation to study the main determinants of its volume.

We are interested in estimating the effect of currency unions on international tourism and international trade. To that end, we estimate a conventional gravity model. The gravity model recognizes that international tourism is increasing in GDP and population, and decreasing in the distance between countries. The product of the populations and the product of the areas are included to measure the size of the countries. Total trade is added as a proxy for the intensity of the economic relations between the countries[4]. Origin-to-destination annual imports, exports and total trade (as the sum of imports and exports) are incorporated. We augment the model with a number of additional controls:

[2] For instance, Patsouratis et al (2005) find that the exchange rate is a main determinant of Greece's tourism demand. This is also the result obtained by Eilat and Einav (2004) using a panel data approach, and by Roselló et al (2005) for the case study of Balearic Islands.

[3] Deardoff (1995) demonstrates that a standard gravity equation could be derived from a large class of trade models.

[4] Furthermore, trade and tourism seem to be related both as complementary and as substitutes. See Easton (1998), Khan et al (2005), and Santana et al (2007) for studies of this relationship.

$$\begin{aligned}\ln(T_{ijt}) = {} & \beta_0 + \beta_1 \ln\left(Y_{it} Y_{jt}\right) + \beta_2 \ln\left(Pop_{it} Pop_{jt}\right) + \beta_3 \ln D_{ij} + \beta_4 \ln Trade_{ijt} \\ & + \beta_5 \ln\left(Area_i Area_j\right) + \beta_6 Lang_{ij} + \beta_7 Cont_{ij} + \beta_8 regional_{ij} \\ & + \beta_9 ComCol_{ij} + \beta_{10} Colony_{ij} + \beta_{11} Landl_{ij} + \beta_{12} Island_{ij} + \beta_{13} \ln relppp_{ijt} \\ & + \gamma CU_{ijt} + u_{ijt}\end{aligned} \qquad [1]$$

where ln denotes natural logs, i and j indicate countries, t is time, and the variables introduced are defined as:

T_{ijt} is the number of tourists visiting country i from country j in year t,
Y_{it} is the real GDP of country i in year t,
Pop_{it} denotes population of country i in year t,
D_{ij} is he great circle distance between capital cities of countries i and j,
$Trade_{ijt}$ denotes the real bilateral trade between countries i and j in year t,
$Area_i$ is the land mass of country i,
$Lang_{ij}$ is a binary variable which is unity if i and j have a common language,
$Cont_{ij}$ is a binary variable which is unity if i and j share a land border,
$Regional_{ij}$ is a binary variable which is unity if both countries in the pair belong to the same regional trade agreement,
$ComCol_{ij}$ is a dummy variable which is unity if one of the countries were ever colonies after 1945 with the same colonizer,
$Colony_{ij}$ is a binary variable which is unity if one country ever colonized the other or vice versa,
$Landl_{ij}$ is the number of landlocked countries in the country-pair (0, 1, or 2),
$Island_{ij}$ is the number of island nations in the pair (0, 1, or 2),
$Relppp_{ijt}$ denotes the log of relative purchasing power parity between countries i and j in year t,
CU_{ijt} is a binary variable which is unity if countries use the same currency at time t,
β is a set of coefficients, u_{ijt} is a well-behaved disturbance term, and γ is the parameter of interest.

Despite being a gravity equation, $Relppp_{ijt}$ is introduced since the dependent variable is arrivals (not the sum of arrivals and departures). Then controlling by competitiveness is needed to avoid biased estimates. We consider the 30 OECD countries as tourist destination and as origins, the 30 OECD countries plus another 30 countries with availability of tourism data as tourist origin (in total there 60 countries of origin). Then we have approximately 1800 pairs of countries. The time dimension in the panel is 10 years (1995-2004). It is important to notice that for the sample dataset considered, the unique cases of common currency are the EMU and USA and Panama.

Tourism data were obtained from the World Tourism Organisation and include annual international tourism arrival by origin. Trade data are expressed in million of US$ and were obtained from "Direction of Trade" data set of the International Monetary Fund Trade statistics and appears in million of US$. All trade data are converted to real term by using US GDP deflator. Data of GDP, area and population were obtained from the World Development Indicators (2006). Again, GDP appears in million of US$ and need to be deflated.

The dummies *Lang*, *ComCol*, *Colony*, *Landl*, *Regional*, and *Island* were obtained from Andrew K. Rose's website. The dummy variable *CU* was obtained from the CIA Factbook. Finally, the distance between countries was obtained from Jon Haveman's website. The descriptive statistics distinguishing between the presence and the absence of common currency are showed in Table 1.

[Table 1, here]

We estimate the gravity equation using conventional Pooled OLS in a balanced sample. The results are presented in Table 2. Gravity equation works well explaining more than two-thirds of the variation in international tourism. As expected, economic mass has a positive influence in tourism. As richer countries are higher the international tourism between them is. Similarly, more population increase the market size for the bilateral tourism. The distance has the expected negative sign, showing that *ceteris paribus*, international tourists prefer near destinations. The variable *trade* is significant and with positive sign, suggesting a complementary relationship between trade and tourism as pointed out by Khan et al. (2005) and Santana et al. (2007), among others.

[Table 2, here]

The *area* as another measure of size of countries has the expected positive influence in tourism. The common language has a positive effect on international tourism, indicating that a different language behaves as a barrier for the visits. To be a common colonizer and to have a common land border seem not to have a significant relevance. While the former is plausible, the latter is more surprising. Perhaps, its influence is being captured by other variables, as the common language and the number of landlocked countries. The coefficient of *colony* is positive suggesting that international tourism increases if one country ever colonized the other or vice versa. The number of landlocked countries in the pair has a positive effect on tourism[5]. The coefficient of *island* is positive, suggesting that this condition promotes tourism. The coefficient of *Regional* indicates that international flows of tourists are more intensive between countries that belong to the same regional trade agreement. The coefficient of the relative PPP is -0.1501 which implies that an increase of 1% in the relative price level of the destination country generates a decrease of 0.15% approximately in the number of arrivals.

Focusing our attention on the variable common currency, its coefficient 0.1108, is positive and statistically significant. This result suggests that a common currency increases tourist flows, specifically the effect of common currency on tourism amounts to 11.7%. This result is economically significant and higher than the estimated by Gil-Pareja et al. (2006).

In a second step, to address the challenge by Rose and Van Wincoop (2001) we estimate a similar equation for international trade:

[5] The positive sign of *landl* may be due to population of landlocked countries are more willingness to travel to another country since land passenger transport facilitates their travels. These travels may be easier and cheaper when the land border is crossed. On the contrary, when the dependent variable is trade we can expect a negative sign as it is argued below.

$$\begin{aligned}\ln(Trade_{ijt}) = {} & \theta_0 + \theta_1 \ln(Y_{it}Y_{jt}) + \theta_2 \ln(Pop_{it}Pop_{jt}) + \theta_3 \ln D_{ij} + \theta_4 \ln T_{ijt} \\ & + \theta_5 \ln(Area_i Area_j) + \theta_6 Lang_{ij} + \theta_7 Cont_{ij} + \theta_8 regional_{ij} \\ & + \theta_9 ComCol_{ij} + \theta_{10} Colony_{ij} + \theta_{11} Landl_{ij} + \theta_{12} Island_{ij} + \\ & + \varphi CU_{ijt} + \varepsilon_{ijt}\end{aligned} \qquad [2]$$

where θ is a set of coefficients, ε_{ijt} is a well-behaved disturbance term, and φ is the parameter of interest.

Equation 2 is estimated by conventional Pooled OLS in a balanced sample and the results are presented in Table 3. The sign of estimates for the GDP, population, distance, common language, contiguity and number of landlocked countries are the expected[6]. This last confirms the findings of Micco et al. (2003), Klein (2002), and Frankel and Rose (2002), among others. The positive sign and significance problems for *island* are common in this literature[7]. Finally, the estimate of the coefficient of *regional* is sensitive and the relevance of economic mass is more adequately captured by the real GDP than the *Area* variable.

In the second column the results of the estimation of equation 2 are presented when international tourism is excluded as a regressor. We can observe how a common currency is associated with an increase of trade flows of 30%. This impact is near three times greater than in the case of tourist arrivals. Although in both cases the effect of a common currency is relevant, the common currency seems to boot more trade than tourism.

The third column shows the results of the estimation of equation 2 including tourist arrivals. Again tourism and trade appear to be complementary. As can be observed, the inclusion of tourism reduces the impact of the common currency on trade. Now, a currency union is associated with an increase of 18%.

[Table 3, here]

This comparative analysis provides that after controlling by tourism in the trade equation the common currency effect on trade is reduced around 40%. This may contribute to answer the question proposed by Rose and Van Wincoop (2001) of why the impact of common currency on trade is so large.

[6] Obviously, trade of landlocked countries commonly requires not only maritime transport but also an expensive land transport crossing several land boundaries. The presence of scale economies in maritime transport and cargo handling increases the relative trade costs for landlocked countries.

[7] For significance problems, see for instance, Estevadeordal et al. (2003), and Rose and Engel (2002) when *island* and *landl* are introduced at the time.

4. Analysing the effect of exchange rate regimes on tourism flows

The main objective of this paper is analysing the effect of exchange rate regimes, not only currency unions, on tourism. In the previous section, we proved how currency unions are associated with an increase of tourism of approximately 12%. However in this section we will try to address a more general question: Do exchange rate regimes, including currency unions, affect tourism flows?

Adam and Cobham (2005) is one of the few works that analyses the effect of exchange rate regimes on bilateral trade. This paper suggests that there is a graduated effect by which greater exchange rate fixity and lower transactions costs encourage trade. According to these authors The effect of currency unions on trade turns out to be the strongest, but other regimes which imply more uncertainty and larger transactions costs relative to currency union, but less than in the default regime of a double float, also promote trade.

In this section we study the relevance of exchange rate regimes in the tourism flows. To that end, we estimate the effect of the exchange rate regime by using the gravity equation [1], where the regressand is the log of the tourist arrivals. In this case we substitute the variable common currency for a set o dummy variables which control the exchange rate regime between countries.

We introduce a set of bilateral dummy variables describing the exchange rate regime between countries. To build these binary variables we will follow Adam and Cobham (2006). These authors use the dataset of *de facto* exchange rate regimes estimated by Reinhart and Rogoff (2004). This is one of a number of classifications produced in recent years in attempts to discriminate between regimes on the basis of what countries actually do rather than what they say they do; it makes particular use of parallel market data as well as official exchange rate data. Reinhart and Rogoff classify most of the countries in our sample in terms of 15 different regimes. Furthermore, as can be observed in Table 4, they aggregate 15 categories into four: a currency union or currency board; a currency peg; a managed floating; and a flexible exchange rate.

[Table 4, here]

However, it is important to point out that they classify countries on an individual basis, but the relevant classification for the present analysis has to be by country pairs. Following Adam and Cobham (2006), we are interested in distinguishing between exchange rate regimes in terms of exchange rate uncertainty and transactions costs.

For that reason we define 3 dummies variables: if countries share the same currency, if both countries present a currency peg to the same currency and if both countries present a managed floating exchange rate regime with the same reference currency. The first one is associated with a completely fix exchange rate, the second one although allows low variability it can be considered nearly fixed while the third one allows higher variability but also intervention of monetary authorities

In this case, the time period is reduced from 1995 to 2001 due to the availability of "de facto" exchange rate regime data.

Table 5 present the results of the estimation of equation [1] when bilateral exchange rate arrangements are added. We run a variety of estimations and the definitive selection of variables is presented in Table 5.

[Table 5, here]

Our regression fit well the data since the R-square is around 68%. The coefficients of the explanatory variables are significant in almost all the cases. Moreover, the results are very similar to the one presented in Table 1.

In relation to the impact of the exchange rate regimes on trade, while the dummy variable managed floating is not significant, the coefficient of currency unions and currency pegs are statistically significant and the sign as we could expect: more fixity in the exchange rate arrangements generates a positive effect on tourism. The effect of common currency on tourism is around 20% while the effect of currency peg is around 17%. That is, currency unions present a greater impact on tourism than currency peg o managed floating regimes. This results is consequent with the one obtained in the previous section where we estimate a positive effect of the currency unions on tourism[8].

5. Conclusions

The main objective of this paper is to analyze the effect of the exchange rate regimes on international tourism flows. The literature is not conclusive about the effect of exchange rate volatility on trade. On the contrary, the empirical research suggests a big positive impact of a common currency on trade while its effect on tourism need to be more investigated. On the basis of a gravity equation we estimate a moderate effect of a currency union on international tourism of almost 12%. This must be considered when analyzing the benefits and drawbacks of a currency union

Furthermore, we estimate a similar gravity equation for international trade. We introduce tourism as an additional regressor, obtaining that the common currency effect on trade is reduced around 40%. This suggests that tourism flows may contribute to explain the excessive magnitude of the estimated effect of a common currency on trade in this literature.

Finally, we analyze the impact of several *de facto* exchange rate arrangements on international tourism. We find that more fixity in the exchange rate arrangements generates a positive effect on tourism and we obtain that the more fix the exchange regime is, the greater the impact on tourism.

[8] This is a robust result, despite we do not build these bilateral dummy variables by considering the same currency or different currencies of reference for each pair of countries.

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Table 1. Descriptive statistics

	With common currency			*Without common currency*		
Variable	**Obs**	**Mean**	**Std. Dev.**	**Obs**	**Mean**	**Std. Dev.**
Log tourism	304	12.2210	2.0416	6277	10.2757	2.4419
Log trade	336	22.0229	1.9315	10663	19.8751	2.4906
Log real GDP	366	19.9198	0.5743	11205	18.6526	1.4814
Log population	366	32.5755	2.0791	11205	33.3696	2.2429
Log area	330	23.7476	1.5216	11031	25.3530	2.3747
Log distance	303	6.6637	0.6561	10029	7.9509	0.9727
Log relative PPP	363	-0.3446	1.4118	10802	-0.0840	2.2661
Common language	366	0.1366	0.3439	11164	0.0569	0.2316
Contiguity	366	0.1858	0.3895	11164	0.0339	0.1811
Regional	366	0.4590	0.4990	11164	0.0865	0.2812
Common colonizer	366	0.0000	0.0000	11164	0.0025	0.0500
Colony	366	0.0000	0.0000	11164	0.0069	0.0828
Number landlocked	366	0.1557	0.3631	11164	0.1987	0.4190
Number of islands	366	0.1721	0.3992	11164	0.2848	0.4907

Table 2. Pooled OLS gravity estimates for international arrivals

Log real GDP	0.39
	(21.57)
Log population	0.21
	(12.14)
Log distance	-0.81
	(-35.50)
Log trade	0.46
	(28.02)
Log area	0.19
	(19.80)
Common language	0.26
	(4.26)
Contiguity	-0.05
	(-0.71)
Regional	0.56
	(11.11)
Common colonizer	-0.29
	(-1.11)
Colony	1.54
	(6.87)
Number landlocked	0.74
	(18.81)
Number of islands	0.27
	(8.03)
Log relative PPP	-0.15
	(-18.52)
Currency union	0.11
	(1.72)
Observations	8209
F-statistic	12925.9
R^2	0.68

Note: t-statistics in parentheses

Table 3. Pooled OLS gravity estimates for bilateral trade

	Non-tourism	Tourism
Log real GDP	0.93	0.69
	(133.00)	(73.67)
Log population	0.97	0.76
	(171.43)	(100.89)
Log distance	-0.68	-0.53
	(-59.46)	(-35.96)
Log tourism		0.18
		(27.04)
Log area	-0.09	-0.09
	(-16.28)	(-13.91)
Common language	0.45	0.37
	(11.70)	(9.41)
Contiguity	0.47	0.57
	(9.52)	(11.70)
Regional	0.16	-0.08
	(4.87)	(-2.40)
Common colonizer	0.20	-0.13
	(1.07)	(-0.78)
Colony	0.69	-0.12
	(6.65)	(-0.8)
Number landlocked	-0.23	-0.48
	(-10.00)	(-19.01)
Number of islands	-0.01	0.05
	(-0.41)	(2.42)
Currency union	0.27	0.17
	(6.06)	(3.99)
Observations	13478	8218
F-statistic	4130.9	3044.7
R^2	0.80	0.83

Note: t-statistics in parentheses

Table 4. Classification of Exchange Rate Regime

Fine classification codes	Reinhart and Rogoff's description	New clasiffication	New code
1	No separate legal tender	Currency board or currency Union	1
2	Pre announced peg or currency board arrangement		
3	Pre announced horizontal band that is narrower than or equal to +/-2%	Currency Peg	2
4	De facto peg		
5	Pre announced crawling peg	Managed Floating	3
6	Pre announced crawling band that is narrower than or equal to +/-2%		
7	De factor crawling peg		
8	De facto crawling band that is narrower than or equal to +/-2%		
9	Pre announced crawling band that is wider than or equal to +/-2%		
10	De facto crawling band that is narrower than or equal to +/-5%		
11	Moving band that is narrower than or equal to +/-2% (i.e., allows for both appreciation and depreciation over time)		
12	Managed floating		
13	Freely floating	Flexible Exchange Rate	4
14	Freely falling		
15	Dual market in which parallel market data is missing	.	.

Table 5. Pooled OLS gravity estimates for tourism, adding Exchange Rate Regimes

Log real GDP	0.41
	(18.86)
Log population	0.23
	(11.10)
Log distance	-0.84
	(-30.76)
Log trade	0.44
	(22.64)
Log area	0.21
	(17.70)
Common language	0.30
	(4.15)
Contiguity	-0.01
	(-0.16)
Regional	0.54
	(8.83)
Common colonizer	-0.33
	(-1.11)
Colony	1.57
	(5.91)
Number landlocked	0.78
	(16.45)
Number of islands	0.23
	(5.80)
Log relative PPP	-0.13
	(-16.52)
Currency Union	0.18
	(2.12)
Currency Peg	0.17
	(1.67)
Managed Floating	0.09
	(0.75)
Number of obs	5568
F(16, 5551)	742.17
R-squared	0.6814

Note: t-statistics in parentheses