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A Revisit to the Impact of Exchange Rates on Tourism Demand: The Case of Italy

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Cover Page Footnote

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A Revisit to the Impact of Exchange Rates on Tourism Demand: The Case of Italy

Introduction

By 2010 twenty-three nations including three countries not officially in the European Union (EU) have adopted the EU's common currency of the Euro. Since the introduction of the Euro in 2002, price transparency between travel suppliers has heightened the competitive intensity for tourists among Eurozone nations (Rátz & Hinek, 2006; Socher, 1999). Within this context, Italy has remained one of the world's most popular destinations for international arrivals. The peninsula has a long and renowned tourism history reaching back to antiquity with travelers from the Greek city-states, and is remembered as the most popular stop on the Grand Tour for Britons and subsequently Americans in the nineteenth century (Baum, 1996; Formica & Uysal, 1996). Since the 1950s Italy has remained one of the top five most visited destinations (World Tourism Organization [WTO], 2008). However, like other mature destinations, it must compete for international travelers with fellow EU nations, continental but non-EU destinations such as Hungary, Croatia, and the Czech Republic, as well as emerging destinations such as China, the Arab Gulf, and India. The literature shows that currency exchange rates play a chief role in a destination's overall price competitiveness (Dwyer, Forsyth, & Rao, 2002). Like all nations, Italy is susceptible to the pricing competition of likely alternative destinations (Martin &

Witt, 1988) including more attractive exchange rates for tourists. When price differences are great, consumers use price as a basis of purchase decision in addition to their evaluation of quality (Heath & Wall, 1992). The perception that a country is expensive proves to be a specific type of marketing challenge. Influences on the development of these perceptions consist of intermediaries such as travel agents, friends and family, as well as traditional and new media (Ainscough, 2006; Bieger & Laesser, 2001). In the case of Italy, how does the exchange rate influence the quantity of international arrivals to Italy? By examining in isolation the effects of exchange rates on international tourism demand to Italy, this study provides a fresh context illuminating the need for a more censorious approach to including various other explanatory variables in tourism demand models between unique country pairs. This is a departure from previous studies.

Literature Review

Accurate modeling of international tourism demand has value to investors, managers, and policy makers but remains elusive. The factors that drive fluctuations in and the direction of tourism demand for individual destinations are multifarious and intricate. The immutable condition of perishability is just one element that continues to fuel the quest for a better means to forecast international tourism demand. This pursuit has neither been unmitigated nor resolved in over fifty years of academic research (Li, Song, & Witt, 2005). The related literature

from the second half of the last century was concerned with testing the dependent and explanatory variables used in international tourism demand models (Lim, 1997). In the most recent decade, tourism demand studies have emphasized improvements by building upon econometric techniques and research designs utilizing increasingly sophisticated methods (Li, et al. 2005; Song & Li, 2008).

Tourism demand studies have focused on quantitative estimates of the economic demand determinants (Crouch, 1995; Johnson & Ashworth, 1990; Lundberg, Krishnamoorthy, Stavenga, 1995) with the most popular dependent variable to represent demand being tourist arrivals (Lim, 1997; Li, et al., 2005; Song & Li, 2008). Hotel occupancy has been used as a proxy for demand as it does not count day-trippers or travelers staying with friends and family (Witt & Witt, 1995; Bailey, Flanegin, Racic, & Rudd, 2009); however, it also does not separate domestic from international guests. Explanatory variables are more numerous and complex. Lim's (1997) review of 100 international tourism demand models in the academic literature revealed the mean number of independent variables as 4.27 with a range of 1 to 9 in any one model. The frequencies of including three, four, and five variables combined in a single model were 20, 29, and 18 respectively or 67% of the sample (Lim, 1997). The relative price variable is the second most recurrent variable (Crouch, 1995; Lim, 1997; Li, et al., 2005, Rosselló, Aguiló, & Riera, 2005, Witt, Martin, Uysal, & Crompton, 1987). Other explanatory variables frequently included in econometric models are income per

capita of origin nation, substitute prices in the form of international versus domestic travel price substitutions or in alternative destinations, exchange rates, dummy variables for one-time events such as the Olympics or a natural disaster, and lastly, promotional expenditures (Crouch, 1995, Lim, 1997; Witt & Witt 1995). A variety of other explanatory variables have been studied to determine international tourism demand such as demographics (e.g., gender, age, family life cycle), trip motives, long- versus short-haul travel distances, business cycles, and cultural differences (Cho, 2010; Crouch, 1994a; Fodness, 1992; Guizzardi & Mazzocchi, 2010; Lim, 1997).

Of the 121 studies compiled for Song and Li's (2008) recent update on tourism demand modeling and forecasting literature, the most popular demand determinants remain income, prices, substitute prices, and exchange rates. Price attributes of a destination are a predominant factor in tourism demand literature with numerous findings concluding that travelers are sensitive to exchange rates (Crouch, 1995; Dwyer, et al., 2002; Önder, Candemir, Kumral, 2009; Patsouratis, Frangouli, Anastasopoulos, 2005). The price of the tourism product has two parts: the cost of travel to a destination and cost for the tourist while in the destination. The most frequently used proxies for price are the consumer price index (CPI), the CPI adjusted for by exchange rates, and simply the foreign currency exchange rates between country pairs (Martin & Witt, 1987; Li, et al., 2005). However, CPI is not an ideal price proxy since domestic consumers and tourist typically

purchase different sets of goods and services. A tourist price index is preferable to a CPI (Martin & Witt, 1987); yet, in most studies, they had been typically unavailable and only sporadically have they been attempted to be estimated (Divisekera, 2003; Rosselló, et al., 2005; Uysal & Crompton, 1985). While it has been argued that CPI safely tracks tourism and travel prices closely (Uysal & Roubi, 1999), if used with the exchange rate, multicollinearity may arise (Lim, 1997; Martin & Witt, 1987).

The currency exchange rate between country pairs, whether used to correct CPI or alone as a proxy, has maintained a central role in tourism demand models (Morley, 1994). Exchange rates remain a constant inclusion because they have been found to be consistently relevant in determining an effective proxy for the relative price of a tourism product at the international level (Sinclair, 1998). There is a preponderance in the literature that assumes consumers are more aware of the rate of currency exchanges between their home country and a country they are considering to visit than they are aware of the price of individual goods and services in that country (Crouch 1994a; 1994b, 1994c; Johnson & Ashworth, 1990; Martin & Witt, 1987; Webber, 2001). The belief that the rise and fall of one country's currency versus another shapes and directs the volumes and direction of tourism flows is prevalent in econometric tourism demand research (Greenwood, 2007, Lundberg, et. al., 1995). The more depreciated an origin country's currency is against a desirable destination, the more expensive

the purchases during a visit to that nation will be for the tourist. Exchange rates have therefore been repeatedly used as a proxy (Bailey, et al., 2009; Crouch, 1995, 1996; Lim, 1997; Onder, et al., 2009; Dwyer, et al., 2002; Webber, 2001). This academic predominance may influence the education of future scholars and perpetuate a perfunctory inclusion of exchange rates in each international demand scenario investigated.

In the case of Izmir, Turkey, Onder, et al. (2009) found the exchange rate elasticity was as they hypothesized both negative and significant when investigating tourist arrivals from the Convention on the Organisation for Economic Co-operation and Development member countries. Similar hypotheses were substantiated by Chen (2008) finding exchange rates the most significant factor in Korea and Taiwan's tourism growth. Studying international arrivals to Greece from Germany, Great Britain, France and Italy, "the exchange rate coefficient is negative and statistically significant in all cases" (Patsouratis, et al., 2005, p. 1867). Further, exchange rate was found to be the sole factor affecting German tourist demand (Patsouratis, et al., 2005) corroborating the findings of Dritsakis (2004). When examining demand via the proxy of U.S. hotel occupancy percentage regressed on a weighted index of five currencies (British Pound, Canadian Dollar, Euro, Japanese Yen, and Mexican Peso) found statistical significance of a strong or weak U.S. dollar impacting hotel demand in Orlando, Las Vegas, Los Angeles, and Miami (Bailey, et al., 2009). These findings support

Crouch's (1995) meta-analysis of 80 studies indicating travel to North America is exchange rate elastic and confirms the findings of PriceWaterhouseCoopers (2000) about exchange rate elasticity of U.S. hotel demand.

The prevailing assumption is that exchange rate fluctuations impact choice of a leisure destination greatly (Dwyer, et al., 2002; WTO 2008). Chen (2008) purported that "...the exchange rate is universally used as one of the determinants of tourism demand" (p. 103). Given this acceptance and popularity in using exchange rates in modeling international tourism demand, this study explores the magnitude of exchange rates in explaining international demand to the historically popular destination of Italy from 19 different origin nations that do not use the Euro.

Data and Method

Data Collection and Preparation

Monthly average foreign exchange rates and monthly numbers of foreign tourists who visited Italy were used in the study to examine the possible impact fluctuations of exchange rates might have on the international tourism demand for Italy. Data were processed using SPSS 18 and statistically significant causal relationships were found for eight of the nineteen countries. This study also identified the magnitude of the causal relationship by providing a regression equation for each of the eight countries with Italy.

Monthly numbers of international tourist arrivals were obtained from the data set compiled by Banca d'Italia. The data set includes the monthly numbers of inbound tourists to Italy from thirty different countries, which accounted for about 95% of the total. Since the focus of the study was on the impact of fluctuations of exchange rates and Italy uses Euro, countries that use the Euro were excluded from the analysis. Therefore, monthly numbers of inbound tourists to Italy from nineteen of the thirty countries from February, 2004 through July, 2009 were analyzed. The currency exchange rates for all countries were retrieved from www.oanda.com, operated by OANDA Corporation a global services company that has been providing currency information since 1995. Daily exchange rates of the nineteen currencies to Euro from February 1, 2004 through July 31, 2009 were collected and monthly averages were calculated.

One of the unique and consistent characteristics of the tourism industry is its seasonality and seasonal components often appear in tourism time series data (Witt & Moutinho, 1994). Therefore, to reveal the actual trends and identify the true relationships between monthly numbers of tourist arrivals and monthly average currency exchange rates, all nineteen monthly time series of numbers of international tourist arrivals to Italy were seasonally adjusted before the statistical procedures. To deseasonalize the monthly time series, as Anderson, Sweeney, & Williams (2006) suggest, the twelve-month moving average and centered moving average were calculated for each data set. Then the seasonal-irregular values

were developed by dividing the raw monthly numbers of tourists by the centered moving averages. The average of the seasonal-irregular values from different months was used as a seasonal index, which was divided into the raw monthly numbers to arrive at the deseasonalized monthly number of international tourist arrivals for each of the nineteen selected countries. The nineteen deseasonalized monthly time series were then used for statistical analyses conducted through various regressions described below.

Selection of Method

The purpose of this study is to determine how the fluctuations of currency exchange rates affect the demand on Italian tourism. Because this study attempts to identify the causal relationship between the exchange rates and the number of international tourist arrivals to Italy, a regression approach was selected (Bowerman, O'Connell, & Koehler, 2005). Nineteen regression analyses were performed using the deseasonalized monthly numbers of international tourist arrivals from nineteen countries as dependent variables and monthly average currency exchange rates between the nineteen countries and Italy as independent variables.

Initial scatter plots indicate that none of the nineteen pairs of data have a clear linear pattern, suggesting that simple linear regression may not adequately accommodate the patterns of the data or generate the models that best fit the data. The SPSS curve estimation procedure, a commonly and widely accepted

technique that helps researchers identify the most appropriate model, produced regression statistics and related scatter plots for these 11 separate regression models with different curves. In order to reflect the causal relationships among the data studied, models must fit the data well. Therefore to identify such models, SPSS curve estimation procedure was selected for greater insight and accuracy of these analyses.

Results

Based on the results of SPSS curve estimation procedure, the regression model that has the highest F-ratio was selected for each of the nineteen countries with individual p -values selected as the indicator of statistical significance. The results in Table I show that only eight of the nineteen countries have statistically significant regression models that indicate a causal relationship between exchange rates and monthly numbers of tourists to Italy.

Table I. Best fit regression lines of exchange rates between Italy and 19 origin countries

County	Best Fit Curves	F-ratio	Sig.	Adj. R ²
Brazil	Linear	48.83	.000	.424
Canada	S curve	19.418	.000	.221
Czech	S curve	24.507	.000	.266
Poland	S curve	38.315	.000	.364
Romania	Compound Curve	16.050	.000	.188
Russia	Linear	14.18	.000	.168
Switzerland	Cubic	6.354	.003	.127
UK	Cubic	12.618	.000	.251
Australia	S curve	1.345	.250	-.011
China	Cubic	.877	.421	-.021
Croatia	Cubic	.506	.605	-.032
Denmark	Quadratic	.8	.454	-.006
Hungary	Inverse Curve	1.060	.307	.000
Japan	S curve	.629	.431	-.006
Norway	Quadratic	1.075	.348	.002
Slovakia	Cubic	.777	.464	-.024
Slovenia	Linear	.465	.500	-.002
Sweden	Cubic Curve	1.484	.235	-.002
USA	Cubic	1.658	.199	.003

*Independent variable is monthly number of tourists to Italy
Dependent variable is monthly average exchange rates*

Further, to understand the magnitudes of the impact, regression models were developed for these eight countries based on performed regressions as shown in Table II. Table III lists the coefficients of each of the eight models. The eight models can also be used for forecasting purpose. Based on expected fluctuations of currency exchange rates, changes in the monthly number of future tourist arrivals from the eight countries can be estimated to help practitioners in Italy better anticipate the fluctuations of future market demand for Italian tourism by country.

Table II. Regression models and model statistics

County	Regression Models	df1	df2	F-ratio	Sig.	Adj. R ²
Brazil	$Y = -8.576 + 85.265X$	1	64	48.83	.000	.424
Canada	$\ln(Y) = 5.882 + (-1.458/X)$	1	64	19.418	.000	.221
Czech	$\ln(Y) = 6.144 + (-.069/X)$	1	64	24.507	.000	.266
Poland	$\ln(Y) = 6.467 + (-.525/X)$	1	64	38.315	.000	.364
Romania	$\ln(Y) = \ln(10.6) + (\ln(732.25)X)$	1	64	16.050	.000	.188
Russia	$Y = 85.463 - 2,233.656X$	1	64	14.18	.000	.168
Switzerland	$Y = 33,433 - 76,104X + 61,361X^3$	2	63	6.354	.003	.127
UK	$Y = -727.98 + 1,142.03X - 189.3X^3$	2	63	12.618	.000	.251

Y = monthly number of tourists (in thousand tourists)
X = monthly average exchange rates (local currency to Euro)

Table III. Coefficients of regression models.

	t	Sig.
Brazil		
Brazilian Real to Euro	6.99	.000
Constant	-2.01	.049
Canada		
1/Canadian Dollar to Euro	-4.41	.000
Constant	11.65	.000
Czech		
1/Czech Koruna to Euro	-4.95	.000
Constant	15.54	.000
Poland		
1/Polish Zloty to Euro	-6.19	.000
Constant	19.05	.000
Romania		
Romanian Leu to Euro	0.607	.546
Constant	2.208	.031
Russia		
Russian Ruble to Euro	-3.77	.000
Constant	16.52	.000
Switzerland		
Swiss Franc to Euro	-2.96	.004
(Swiss Franc to Euro) ³	2.91	.005
Constant	3.09	.003
UK		
British Pound to Euro	2.46	.017
(British Pound to Euro) ³	-2.3	.037
Constant	-1.81	.076

In addition, data of U.S. arrivals to Italy were further analyzed to take into consideration the impact of decision lag. According to the United States Department of Commerce's survey of travelers outbound from the U.S. to Europe found on average, U.S. tourists have an approximate 90-day lag between their decision date for an European trip and their air travel date (U.S. Office of Travel

and Tourism Industries, 2009). Therefore, another regression curve estimate analysis was performed using monthly number of U.S. inbound tourists to Italy from February 2004 through April 2009 as the dependent variable and monthly currency exchange rate of U.S. dollar to Euro from May of 2004 through July 2009 as the independent variable and as Table IV results show there still is no statistically significant relationship. The result shows the best fitting curve is S Curve (Table V), which indicates that there is not a statistically significant causal relationship between the fluctuations of currency exchange rate and U.S. arrivals to Italy.

Table IV. Regression of U.S. tourists to Italy with three-month decision to arrival date lag

Regression Models	df1	df2	F-ratio	Sig.	Adj. R ²
$\ln(Y) = 5.663 - .186 (1/X)$	1	61	3.771	.057	.043

Y = monthly number of tourists (in thousand tourists)
X = monthly average exchange rates (USD to Euro)

Furthermore, Table V shows that the independent variable is not statistically significant in this regression, but the constant is. This supports the current findings that the monthly number of tourist arrivals did not fluctuate because of exchange rate between these country pairs in this period.

Table V. Coefficients of S Curve U.S. to Italy with three-month decision to arrival lag

	t	Sig.
1/USD to Euro	-1.942	.057
Constant	44.093	.000

The dependent variable is Ln(Number of U.S. tourists to Italy).

Implications and Discussion

The findings of this study demonstrate that exchange rates do not impact tourism demand equally in various origin-destination scenarios when Italy is the destination. Furthermore, in some cases the exchange rate between the origin country and the Euro has no statistical significance in explaining tourist arrivals to Italy. While the results confirm previous research that international tourism demand levels are particular to specific country pairs (Crouch, 1995; Dwyer, et al., 2002; Webber, 2001), it stands in contrast to numerous other studies regarding the significance of exchange rates in determining international demand for European destinations (Crouch, 1995; Dritsakis, 2004; Patsouratis, et al., 2005). The unique demand determinants for each origin-destination pair are influenced by such things as recent immigration trends, cultural relationships, promotional activities to origin markets and other socio-cultural attributes (Cho, 2010; Crouch, 1995; Lim, 1997). For instance, in 2005 Americans rated Italy as their most

preferred leisure destination (Zid, 2005) suggesting substitutions for Italy may be less likely based on price considerations or relative income levels of U.S. visitors. Moreover, Italian tourism suppliers may provide greater incentives to hedge against exchange rates for travelers from particular source markets thus mitigating exchange rate impact on volume of visitors. For instance, Americans and Britons contribute the most tourism revenue to Italy after Germans (Algieri & Aquino, 2008) who share the common currency of the Euro and therefore would not be incentivized by exchange rate guarantees or other marketing responses. Italian tourism marketers may wish to provide exchange rate guarantees cautiously and consider the level of tourist spending prior to committing to unnecessary incentives. The nature of a particular origin country's currency policy and balance of payments may also be of consideration to understanding the lack of statistical significance of exchange rate on travel demand in some pairs with China an obvious example. Given the size of China's rising middle class, which is poised to travel, Italian tourism marketers may have invested in marketing to this emerging segment and continue to do so given the potential.

The variety of Italian attractions, from art cities to seaside and pastoral locations, may provide some insurance to travelers who want to maximize their activities and experience and choose the destination for value over price. Similarly, Italy's cultural heritage may sustain some of the popularity of the destination despite exchange rate fluctuations. For illustration of the peninsula

nation's wealth of cultural, historical and natural attractions, the United Nations Educational, Scientific and Cultural Organization has recognized more locations in Italy as part of its World Heritage Sites than any other nation (Algieri & Aquino, 2008).

If exchange rates influence tourists from some nations less than others in choosing Italy as a destination, then other price proxies may be more relevant than exchange rates or the peninsula's attractiveness trumps exchange rate considerations. For example, Han, Durbarry, and Sinclair (2006) have shown that for Italy, France and Spain price increases result in a reduction of U.S. tourism demand, suggesting that Americans may be more aware of individual tourism supply chain component costs than previously assumed by other researchers. Given the continued growth of internet distribution channels and channel competitiveness, changes in tour package purchases to Europe, consumer awareness of tourism product costs, and competitive intensity may also have changed the relative importance of exchange rates in determining international tourism demand.

As researchers emphasizing the predominance of exchange rates in literature about international tourism demand also populate the classroom, the heuristic attribution of currency exchange rates may need to be replaced as the norm by a caution in developing explanatory models for individual country pairs by future tourism scholars. Collaborators may select control variables with more

due consideration when revisiting research model specification for international tourism demand for Italy. The effect of exchange rates on international tourism demand for Italy is not significant for some countries regardless of other variables that may or may not be included in previous or future models.

Further Research

Recent investigations have demonstrated the usefulness of several econometric techniques to forecast and model international tourism demand (Song & Li, 2008); nevertheless, as this study suggests, different explanatory variables have different impacts on the results between unique combinations of country-pairs (Crouch, 1995, 1996; Witt & Witt, 1995). While the regressions used in this study are parsimonious, they demonstrate similar conclusions of other more complex modeling. This investigation concludes that exchange rates explain international tourism demand for individual destination countries and specific source market nations in varying degrees of magnitude. The use of exchange rates to understand international tourism demand to Italy is not consistently significant by origin of tourist, and the use of exchange rates in forecast models should be done so with due consideration of these findings. Further research into more precise proxies of price between country-pairs is warranted. Research that compares the exchange rate significance between the same source markets on other EU nations may provide additional insights into the unique characteristics of Italy's relationship with each. Likewise, if reliable data identifying the decision

lag for tourists in each of the countries examined in this study were available, the effect of the awareness of exchange rates may be further understood between the individual country pairs as demonstrated by the example of the U.S.

These results exhort a consultative approach to developing tourism demand models. By finding that exchange rates fail to have statistical significance in explaining tourism flows to Italy from some origin countries, researchers may be more circumspect in selecting explanatory variables pertinent for each tourist source nation and the case subject. Income per capita may control for these findings among some nations while historical or cultural influences may be of greater or lesser influence in yet others. The synergies between international tourism and international trade need to be more carefully examined (Fisher, 2009). Chen's (2008) investigation of bi-directional causality between tourism development and economic growth (exchange rate or exports) found similar results as this study did while investigating several Asian nations' tourism demand and exchange rate relationships; namely, that the statistical significance of one on the other is not consistent for any one nation or pair. More research into how a currency exchange rate fluctuation between specific nations contributes to the change in volume of international arrivals is justified from the results of this study. Tourism policy makers should not apply "one size fits all" strategies to counter changes in exchange rates without more precise understanding of the impact on their tourism source markets. While statistical significance of any one

explanatory variable does not explicate the multifarious nature of international tourism demand, this study demonstrates that perfunctory insertion of exchange rates into forecasting models for international tourism demand may need to be reconsidered if we are to understand the distinct relationships between particular origin-nations and destinations.

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