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Reviewing the factors driving demand for regional tourism in Uruguay

Analisando os fatores que impulsionam a demanda por turismo regional no Uruguai

Análisis de los factores que impulsan la demanda de turismo regional en Uruguay

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Keywords:

Tourism demand;
Real exchange rate;
Cointegration.

Abstract

Tourism is a key driver of Uruguay's economy, accounting for around 9% of GDP and 7% of total employment. Argentina and Brazil are the main source markets, together accounting for approximately 70% of total tourism demand. This paper reviews recent evidence on the long-run relationship between tourism demand, income, and the real exchange rate using vector error correction models (VECM), estimated separately for Argentina and Brazil from January 2005 to June 2025. An uncertainty measure is also incorporated to assess its potential effects. The results show that Argentine tourism demand responds to both income and relative prices, with an income elasticity close to 4, confirming tourism as a luxury good, while uncertainty has no significant effect. In contrast, Brazilian demand is driven exclusively by income, with an elasticity close to 3, and uncertainty behaves as an exogenous factor. Forecasts suggest that Argentine tourism would grow by 8% in 2025 and 8.5% in 2026, while Brazilian tourism is projected to increase by 12% and 9%, respectively. Impulse response functions indicate strong income effects in both markets, with faster short-run adjustment in Argentina (three months) than in Brazil (about one year).

Palavras-chave:

Demanda turística;
Taxa de câmbio real;
Cointegração.

Resumo

O turismo é um motor fundamental da economia uruguaia, representando cerca de 9% do PIB e 7% do emprego total. Argentina e Brasil são os principais mercados emissores e, em conjunto, respondem por aproximadamente 70% da demanda turística total. Este trabalho revisa evidências recentes sobre a relação de longo prazo entre a demanda turística, a renda e a taxa de câmbio real, utilizando modelos vetoriais de correção de erros (VECM), estimados separadamente para a Argentina e o Brasil no período de janeiro de 2005 a junho de 2025. Além disso, incorpora-se uma medida de incerteza para avaliar seus possíveis efeitos. Os resultados mostram que a demanda turística argentina responde tanto à renda quanto aos preços relativos, com uma elasticidade-renda próxima de 4, o que confirma o turismo como um bem de luxo, enquanto a incerteza não apresenta efeito significativo. Em contraste, a demanda brasileira é impulsionada exclusivamente pela renda, com elasticidade próxima de 3, e a incerteza comporta-se como um fator exógeno. As projeções sugerem que o turismo argentino cresceria 8% em 2025 e 8,5% em 2026, enquanto o turismo brasileiro aumentaria 12% e 9%, respectivamente. A análise das funções impulso-resposta indica fortes efeitos da renda em ambos os mercados, com um ajuste de curto prazo mais rápido na Argentina (três meses) do que no Brasil (quase um ano).

Palabras clave:

Demanda turística;
Tipo de cambio real;
Cointegración.

Resumen

El turismo es un motor clave de la economía uruguaya, ya que representa alrededor del 9% del PIB y el 7% del empleo total. Argentina y Brasil son los principales mercados emisores y en conjunto explican aproximadamente el 70% de la demanda turística total. Este trabajo revisa evidencia reciente sobre la relación de largo plazo entre la demanda turística, el ingreso y el tipo de cambio real, utilizando modelos vectoriales de corrección del error (VECM), estimados por separado para Argentina y

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Brasil en el período comprendido entre enero de 2005 y junio de 2025. Asimismo, se incorpora una medida de incertidumbre para evaluar sus posibles efectos. Los resultados muestran que la demanda turística argentina responde tanto al ingreso como a los precios relativos, con una elasticidad-ingreso cercana a 4, lo que confirma al turismo como un bien de lujo, mientras que la incertidumbre no tiene un efecto significativo. En contraste, la demanda brasileña está impulsada exclusivamente por el ingreso, con una elasticidad cercana a 3, y la incertidumbre se comporta como un factor exógeno. Las proyecciones sugieren que el turismo argentino crecería un 8% en 2025 y un 8,5% en 2026, mientras que el turismo brasileño se incrementaría en un 12% y un 9%, respectivamente. El análisis de funciones impulso–respuesta indica fuertes efectos del ingreso en ambos mercados, con un ajuste de corto plazo más rápido en Argentina (tres meses) que en Brasil (alrededor de un año).

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1 INTRODUCTION

In recent decades, the tourism industry has become one of the most important sectors of the global economy. It plays a significant role in generating employment, facilitating trade, and promoting overall prosperity (Nguyen et al., 2024). However, tourism was one of the sectors hit hardest by the COVID-19 pandemic. After a downturn in 2020, the industry experienced a strong recovery, reaching pre-pandemic levels by 2024 (UN Tourism, 2025a, 2025b).

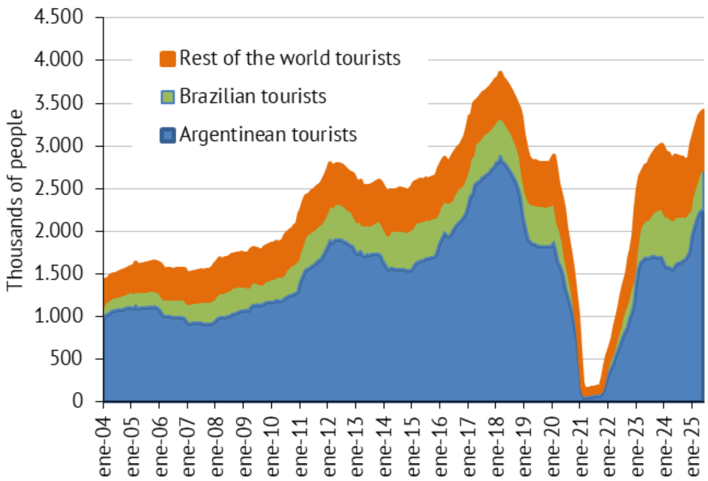
This paper discusses Uruguay, a small country in southern South America bordered by two large neighbors: Argentina and Brazil. Uruguay has a unique geographic and political structure defined by its history and subsequent development.

Tourism serves as a vital engine of economic activity and employment in Uruguay. The sector accounts for approximately 9% of the country's gross domestic product (GDP) and generates around 7% of total employment (UNWTO, 2025). Most visitors come from Argentina and Brazil, accounting for about 70% of total tourism demand over the past decade.

According to the last population census (INE, 2023), Uruguay has a population of about 3.5 million and 700 kilometers of beaches along the Rio de la Plata (Vincent et al., 2007). It has a temperate climate (Sánchez-Dávila, 2021). Historically, Argentine tourists have been the main Uruguayan visitors. The Uruguayan main tourist destination, Punta del Este, is about 360 kilometers from Buenos Aires, Argentina's capital city. Argentine tourists typically visit for annual holidays, long weekends, and winter breaks. Many also own residences in Uruguay, have family connections there, or have investments and commercial interests in the country. Brazilian tourists, on the other hand, exhibit different behavior. They mainly visit during their holiday periods and often travel to Montevideo and Punta del Este for a few days. They also tend to spend more per visit than Argentine tourists.

The total number of tourists each year exceeds 100% of the Uruguayan population. Over the last 15 years, Argentine tourists have accounted for nearly 55% of the total, and Brazilian tourists around 15% (Figure 1).

Figure 1 - Annual tourists' arrivals to Uruguay by nationality



Source: Ministry of Tourism, Uruguay.

Considering tourism spending by nationality, the evolution is similar to the number of tourists: great growth from the beginning of the period until 2017, followed by a decline and total suspension during the pandemic. Spending recovered afterwards but did not reach pre-pandemic maximum levels. Argentina represented 55% of the total spending, and Brazil represented over 16%.

This research primarily aims to analyze the relationship between Argentine and Brazilian tourists visiting Uruguay, their income levels, and the bilateral real exchange rate by estimating a demand function. Additionally, we examine the potential impacts of uncertainty and specific events, such as the pandemic and Easter holidays. We estimate two vector error correction (VEC) models—one for Argentina and one for Brazil—to study impulse response functions and forecast tourist visitation.

The main contribution of this study is to examine whether the responsiveness of tourism demand to changes in its key determinants has evolved over time, specifically by comparing the period 2005–2025 with the results obtained in the original study covering 1996–2011. By revisiting and extending the analysis to a more recent period, this paper allows for the assessment of potential structural changes in tourism demand behaviour, which may be associated with transformations in the global tourism market, macroeconomic conditions, and shifts in travel patterns. This analysis becomes even more relevant when considering the disruption generated by the COVID-19 pandemic, which produced an unprecedented shock to international mobility, tourism flows, and the functioning of the tourism industry. In this context, evaluating whether the sensitivity of tourism demand to its main determinants has changed after such a shock is crucial for understanding the current dynamics of the sector and the extent to which pre-pandemic patterns persist or have been redefined.

Moreover, to the best of our knowledge, relatively few studies have explicitly investigated how these demand responses change across different time horizons using comparable frameworks in Uruguay. This gap in the literature highlights the relevance of the present analysis. Understanding whether the magnitude and stability of tourism demand elasticities have changed is particularly important for interpreting the current dynamics of the tourism sector. In this regard, the findings of this study may provide valuable insights not only for researchers but also for entrepreneurs linked to the tourism sector, as well as for policymakers interested in designing strategies and policies that are aligned with the evolving behaviour of international tourism demand.

The paper is organized as follows: Section 2 reviews the relevant literature; Section 3 describes the data and methodology; Section 4 presents the main results, a robustness analysis of the results, and a discussion subsection comparing our main findings with previous works; and Section 5 draws conclusions.

2 BACKGROUND

Tourism development has exerted a significant impact on destinations attracting large inflows of visitors, fostering production, job creation, public sector tax revenues, and infrastructure investment (Brida et al., 2016). At the same time, the global tourism industry has undergone profound transformations in recent years, shaped by emerging trends, persistent challenges, and evolving opportunities (Tso, 2017). Following the onset of the pandemic, tourism demand experienced significant shifts due to the restrictions imposed by various countries, which negatively impacted economic growth (Efthimiou, 2025). These global dynamics underscore the importance of understanding tourism demand not only as a general phenomenon but also as a context-dependent and evolving process.

Within this broader context, tourism demand is generally understood as a derived demand, as it depends on the consumption of tourism-related goods and services at the destination. The literature identifies income in the country of origin, relative prices, and substitute destination prices as the main determinants (i.e., Garín- Muñoz, 2007; Wang, 2009, or Song et al., 2010). Empirically, tourist arrivals are the most commonly used variable to measure demand, given both the availability of data and their relevance for tourism providers (Song et al., 2009; Sheldon, 1993; Zhou, Bonham & Gangnes, 2007)[1]. Understanding these determinants is essential for anticipating fluctuations in arrivals and for designing policies that support sustainable tourism development.

Accurately forecasting tourism demand is thus crucial for the entire tourism industry (Song et al., 2009). Such forecasts rely on a range of factors, including relative prices at the destination, exchange rates, potential consumers' incomes, as well as variables linked to geographic location, and individual tastes and preferences. This highlights the interconnected nature of global tourism markets, where shifts in one region can influence demand patterns elsewhere.

[1]There are other models that use the number of overnight stays at the destination, but this data is not available in Uruguay.

Although global analyses of international tourism provide valuable insights, a more precise approach involves disaggregating visitors by nationality. This distinction is justified by the significant differences observed in foreign tourists' behavior depending on their country of origin (Crouch, 1994; De Mello et al., 2002). In line with this perspective, numerous studies have estimated tourism demand using similar methodologies across different contexts. For instance, Brida et al. (2008) applied cointegration methods to assess U.S. tourism demand in Mexico, while Mervar and Payne (2007) used an ARDL model to examine foreign tourism demand in Croatia. Other examples include analyses of North American tourists in Ireland (Hanly & Wade, 2007), Singaporean travelers to Australia (Lim & McAleer, 2003), tourism in Turkey (Icoz et al., 1998), U.S. demand in Aruba (Vanegas & Croes, 2000), and tourism in Hong Kong (Song & Wong, 2003).

More recently, additional research has reinforced the importance of income and price factors in explaining tourist flows. For example, Kadir and Karim (2009) applied cointegration and error correction approaches to study the U.S. and the U.K. demand for Malaysia. They found that income elasticities exceeded one for both markets, while relative prices had a stronger effect on the U.K. visitors. Similarly, Vanegas (2013) analyzed international tourism demand in El Salvador and showed that income responsiveness varies by country. Taken together, these findings underscore the importance of nationality-specific analyses and offer a valuable framework for examining Uruguay as a case study.

Turning to the national context, studies of Uruguayan tourism have primarily focused on the sector's contribution to GDP growth (Brida et al., 2010) and on identifying the determinants of tourism demand (Robano, 2000; Altmark et al., 2013; Serviansky, 2011). These analyses generally explore the relationship between real tourism spending and the real income of source tourists, though with varying emphases. For example, Altmark et al. (2013) or Mordecki (2014) estimated a demand function using a Vector Error Correction Model (VECM) based on the Johansen methodology (Johansen 1988, 1991) incorporating the number of tourists, the real exchange rate, and the income of tourists' countries of origin. Such studies highlight how international demand patterns intersect with Uruguay's domestic tourism dynamics, reinforcing the relevance of combining global insights with local analysis.

3 DATA AND METHODOLOGY

This section outlines the methodology and data employed to fulfil the research objectives.

3.1. Methodology

The Vector Error Correction Model (VECM) represents short- and long-term interdependent relationships between variables. According to Sims (1980), the objective of these models is to determine these relationships, which requires all available information on the joint movements and interactions of the variables. This implies that economic series must be maintained at appropriate levels to avoid hiding cointegration relationships.

When applying the VECM estimation methodology, a cointegration analysis is also performed between the variables. If the variables are found to be cointegrated, it can be concluded that a long-term relationship exists between them. To this end, Johansen's cointegration analysis (Johansen, 1988) is employed, and the following VECM model is proposed:

$$\Delta X_t = \mu + A_1 \Delta X_{t-1} + \ldots + A_k \Delta X_{t-k-1} + \Pi X_{t-1} + \Gamma \Delta D_t + \varepsilon_t \tag{1}$$

This model is based on a vector of variables, X_i, which are initially considered to be endogenous. The errors follow a normal distribution $\varepsilon_t \sim N(0, \sigma^2)$, μ is a vector of constants, and D_t contain a set of deterministic variables, such as seasonal dummies, interventions that model outliers, and special effects. Finally, Π_{nxn} is a square matrix, where n is the number of variables in the model.

This interest matrix, defined as $\Pi = \alpha\beta'$, containing two matrices β and α, of dimensions nxr. The first matrix reflects long-term equilibrium relationships between variables, while the second matrix corresponds to error correction mechanisms, i.e., adjustments towards these relationships (Johansen, 1988; Johansen et al., 1991).

The rank of Π determines the number of equilibrium or cointegration relationships (it must be positive and less than n). Another statistic is based on estimating the trace (the sum of all the eigenvalues) of π. The results derived from both procedures are expected to be the same. If not, the criterion is always to choose the lowest rank obtained, to work with all existing trend dynamics.

Once cointegration has been verified and the corresponding VECM model estimated, the significance of the β (cointegration relationship coefficients) and the α (error correction mechanisms) must be tested. The first significance or exclusion test, performed on the β coefficients, determines which variables comprise the equilibrium relationships. The second test, performed on the α coefficients, determines which variables are exogenous in the long-term relationships, i.e., they neither react to nor adjust to changes in the variable of interest.

3.2. Data

To conduct the analysis, monthly data series from January 2005 to June 2025 were utilized. In examining tourism demand—considering that tourist arrivals are the most commonly used variable for this purpose due to their ease of data availability and their importance for providers of tourism products and services (Song et al., 2009; Sheldon, 1993)—this study relies principally on data for Argentine and Brazilian tourists entering Uruguay, but also in data regarding both Uruguayans living abroad and tourism from the rest of the world. The Uruguayan Ministry of Tourism provides this data. Additionally, the monthly economic activity indicator (EMAE in Spanish) for Argentina and the economic activity index (IBC-Br in Portuguese) for Brazil were included; both series were obtained from the National Institute of Statistics and Censuses of Argentina (INDEC) and the Central Bank of Brazil (BCB), respectively, serving as proxies for monthly GDP for each country. Other income variable such as the global imports as a proxy of global GDP was also used for this research.

Other endogenous variables incorporated into the analysis include the bilateral real exchange rate (RER), calculated from press data and official sources in Argentina, Brazil, Uruguay and for the rest of the world, and a measure of economic policy uncertainty, derived from the Economic Policy Uncertainty Index (EPU) (Baker et al., 2016) and data from the Central Bank of Uruguay (Lanzilotta et al., 2023)[2]. This Uruguayan uncertainty index was built through the Principal Component Analysis (PCA), considering the Global EPU, Brazilian EPU, and the standard deviation of the nominal exchange rate 12 months' forecast of the Uruguayan Central Bank (BCU) survey (Figure A.1).

The table below summarizes this information.

Table 1 - Variables used for the analysis

Variables	Description	Source	Frequency	Period
$tour_{ARG}$	Argentine tourists	Ministry of Tourism	Monthly	01/2005 - 06/2025
$tour_{BRA}$	Brazilian tourist	Ministry of Tourism	Monthly	01/2005 - 06/2025
$tour_{UY}$	Uruguayans living abroad	Ministry of Tourism	Monthly	01/2005 - 06/2025
$tour_{RW}$	Rest of the world tourists	Ministry of Tourism	Monthly	01/2005 - 06/2025
GDP_{ARG}	Argentine EMAE	INDEC	Monthly	01/2005 - 06/2025
GDP_{BRA}	Brazilian IBC-Br	BCB	Monthly	01/2005 - 06/2025
GDP_{RW}	Global imports	OECD	Monthly	01/2005 - 06/2025
RER_{ARG}	Real exchange rate	Own elaboration, from data of official agencies	Monthly	01/2005 - 06/2025
RER_{BRA}	Real exchange rate	Own elaboration, from data of official agencies	Monthly	01/2005 - 06/2025
RER_{RW}	Real exchange rate	Own elaboration, from data of official agencies	Monthly	01/2005 - 06/2025
uncertainty_uy	Economic policy uncertainty	Own elaboration, from data of BCU and poli-cyuncertainty.com	Monthly	01/2005 - 06/2025

Source: authors' own elaboration.

4 MAIN RESULTS

This section first describes how the series evolved and its statistical characteristics during the study period. It also presents the stylized facts observed in the data and their relationship with previous findings. Next, it presents and analyzes the results of the econometric analysis.

[2]The real exchange rate is defined as: e=E*xP*/ExP, therefore when it increases, it implies a depreciation, an improvement in the price ratio with the domestic country, in this case Uruguay.

4.1. Description and statistical characterization of the series

The empirical analysis covers the period from January 2005 to June 2025 and includes 246 monthly observations. This timeframe enables us to evaluate Uruguay's tourism performance in relation to the evolution of primary macroeconomic variables in Argentina and Brazil. The period includes times marked by health crises and changes in government, both of which significantly impacted those economies.

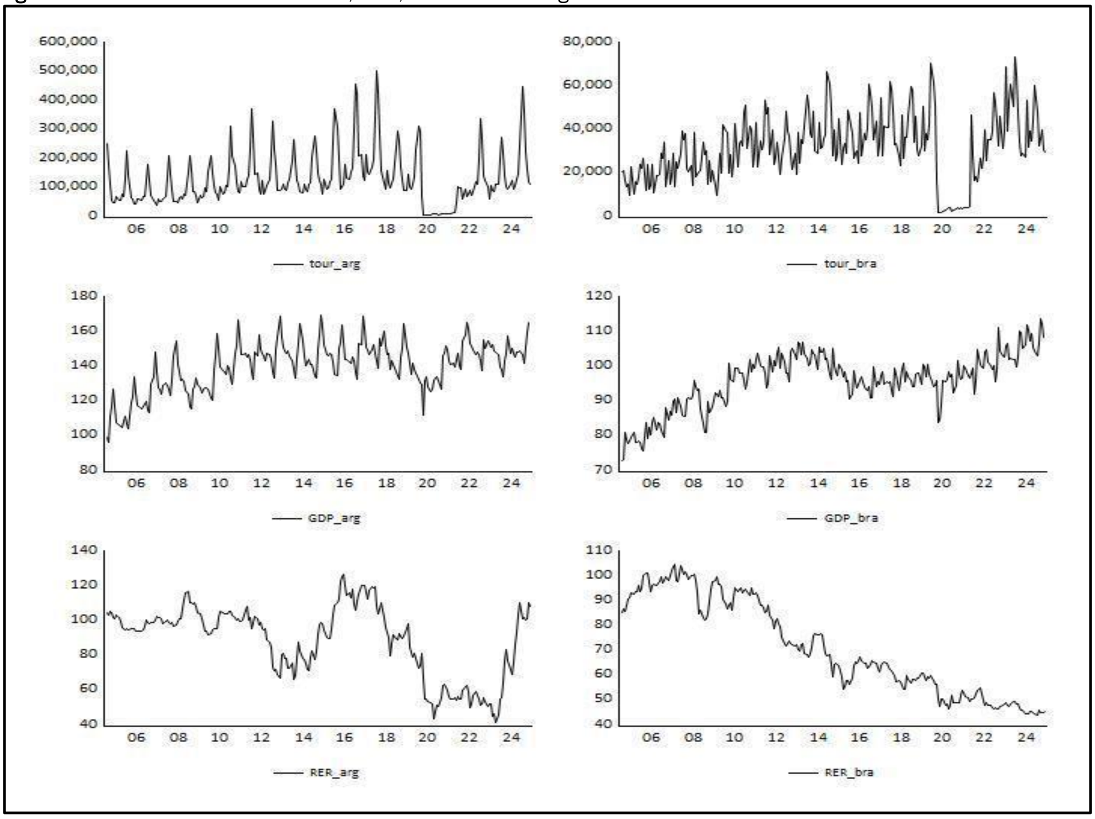
As Figure 2 shows, the series representing tourism demand in Argentina and Brazil, and each country's GDP, follow similar trends during this period. Both series showed moderate growth until early 2020, when the closure of borders due to measures taken by several countries to protect their populations from the novel coronavirus resulted in a sharp drop in tourist traffic.

On the other hand, the successive peaks and troughs observed in Argentine and Brazilian tourism demand reflect the seasonality of these series. This can be associated with the type of tourism promoted in Uruguay: sun and beach tourism during the summer months. Among the main attractions are the beaches on the east coast of the country (Altmark et al., 2013; Brida et al., 2012).

An analysis of the two countries' GDP reveals an upward trend throughout most of the period, except in 2020 and 2021. The decline in GDP during these years reflects the economic impact of the pandemic. Brazil's GDP also shows the impact of the 2008 international financial crisis. There was an economic contraction caused by a fall in industrial production due to reduced demand for manufactured goods from its main trading partners. There was also a decline in demand and job losses. Brazil then experienced its own crisis from 2014 to 2015 due to political issues that resulted in the impeachment of President Dilma Rousseff. Conversely, Argentina's GDP shows significant growth from the beginning of the analyzed period until 2011. After that, the economy stagnated until the end of the period, excluding the pandemic years.

Analyzing the real exchange rate (RER) between Argentina and Uruguay shows that Argentina's RER fluctuated due to different economic policies implemented by various governments during this period. The RER remained stable until 2012, when Argentina sharply devalued the peso. This resulted in a loss of competitiveness with Uruguay. The situation ended in 2015 when Mauricio Macri became president and changed the exchange rate policy. The bilateral RER with Uruguay then improved. However, halfway through Macri's term, a new crisis caused the Argentine peso to sharply devalue once again, worsening the price ratio with Uruguay. After the Coronavirus crisis, the RER dropped significantly during the second half of Alberto Fernández's presidency. Javier Milei was elected president by the end of 2023. Changes in exchange rate policy led to lower inflation and exchange rate stability once again. These changes improved the exchange rate relationship with Uruguay, resulting in an improvement in the bilateral real effective rate (RER). Meanwhile, Uruguay's RER with Brazil has trended downward since 2008. Despite Brazil's political crises and the pandemic, the real exchange rate with Brazil has fallen (appreciated) since 2008. Nevertheless, tourism demand from Brazil increased during this period.

Figure 2 - Evolution of tourism demand, GDP, and RER from Argentina and Brazil



Source: Ministry of Tourism, INDEC, BCB and RER was our own elaboration.

The series considered in these estimations are not stationary on average, as confirmed by the ADF unit root test, allowing the use of the proposed VECM methodology (see Table A.1).

The remaining variables used in the various estimates, along with their respective graphs, are included in the appendix (see Appendix, Figures A.1 and A.2). As with the variables already discussed, they were found to be non-stationary on average.

4.2. Empirical Evidence

4.2.1. Main empirical findings

Given that all variables are nonstationary (I(1)), we developed two models: one to estimate Argentine tourism demand and another to estimate Brazilian tourism demand. For each country, the models incorporated the monthly GDP estimator, bilateral real exchange rates (RERs), and the uncertainty measure.

To test for the existence of long-run equilibrium relationships among the variables, we applied the Johansen (1988) cointegration methodology. Both the trace test and the maximum eigenvalue test indicate the presence of one cointegrating vector, suggesting a long-run relationship among the variables in both models. These long-run relationships are reported in Table 3 (for further details on the cointegration tests, see Tables A.2 and A.3).

The exclusion tests performed on the β coefficients confirm that all variables contribute significantly to the cointegration vector for Argentina. In contrast, for Brazil, the real exchange rate (RER) is excluded from the long-run relationship, as its associated β coefficient is not statistically significant.

Table 3 - VEC Models for Argentina and Brazil Tourism demand as the dependent variable

Long-run relationship variables	**Argentina**		**Brazil**	
	Coefficient	**Estimator**	**Coefficient**	**Estimator**
GDP	β_{2arg}	3.98*	β_{2bra}	3.27*
RER	β_{3arg}	0.45*	β_{3bra}	0
Constant	β_{0arg}	-10.2*	β_{0bra}	-4.8*
Adjustment speed of:				
Argentine tourism demand	α_1	-0.32*		
Brazilian tourism demand			α_1	-0.08*
Model Specification				
Transformation of variables	Yes; logarithmic		Yes; logarithmic	
Lag structure	Lags 1 to 12		Lags 1, 2 and 4	
Uncertainty (control variable)	No		Yes; not lagged, negative and significant	
Seasonal treatment	Yes; seasonal dummies		Yes; seasonal dummies	
Easter effect (control variable)	Yes; Easter dummy		Yes; Easter dummy	
Outlier treatment	Yes; TC and LS		Yes; TC and LS	
Normality of residuals	Yes; Jarque-Bera p-value=0.5656		Yes; Jarque-Bera p-value=0.2427	

Notes: Tourism demand is the dependent variable in each model. The subscript *i* of the coefficients βi corresponds to the *i*th variable (*i*=0 for the constant, *i*=1 for tourism demand, *i*=2 GDP and *i*=3 for real exchange rate). * Significant at the 5% level. Outliers correspond either to transitory changes (TC) or level shifts (LS).

Source: authors' own elaboration.

Thus, the equilibrium relationships found are:

For the first model, Argentine tourism demand[3]:

$$Tour_{arg} = \underset{(9.96)}{3.98\, GDP_{arg}} + \underset{(3.04)}{0.45\, RER_{arg}} - 10.2 \tag{2}$$

As variables were considered in logarithms, the coefficients can be read as elasticities. Therefore, with a 1% increase in the real exchange rate considered through RER_{arg} , the number of tourists $Tour_{arg}$ increases by 0.45%. On the other hand, with the increase of one pp in activity GDP_{arg}, the number of tourists increases 3.98%. This confirms that tourism is a luxury activity, because its income-elasticity results greater than 1, and responds to both variables, income and relative prices.

The other variable considered was the uncertainty index, but in the case of Argentine tourism demand, it wasn't significant. We also introduced several dummy variables, seasonal dummy variables, Easter holidays, the COVID pandemic, and Argentine inflation acceleration in 2023, among others.

For the second model, Brazilian tourism demand:

$$Tour_{bra} = \underset{(2.08)}{3.27\, GDP_{bra}} - 4.8 \tag{3}$$

In this case, we can also see coefficients as elasticity, so 1% increase in Brazilian income (GDP_{bra}) implies that the number of Brazilian tourists increases 3.28%. And in this case, relative prices considered through RER_{bra} weren't significant in the model. So, for Brazilian tourists, in the period considered, from January 2005 to June 2025, the main driver is GDP, and prices did not matter for these tourists. In this case, Brazilian tourism can be seen as a luxury good, showing a Veblen effect of conspicuous consumption or status symbol (Gunter & Panosso Netto, 2016).

The adjustment coefficient (α) measures the speed at which deviations from the long-run equilibrium are corrected. For Argentina, the estimated coefficient indicates that approximately 32% of the disequilibrium is corrected each month, suggesting a relatively rapid adjustment process in which the system returns to its long-run equilibrium in roughly three months. In contrast, the adjustment process appears to be considerably slower for Brazil. The estimated coefficient implies that only about 8% of the disequilibrium is corrected each month, indicating a more gradual convergence toward the long-run equilibrium, which may take close to one year.

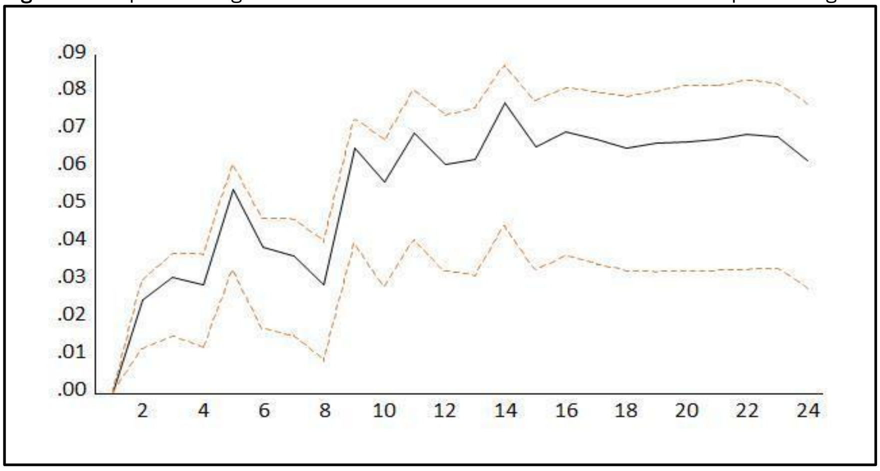
[3] *t*-statistics are included below each coefficient.

To further explore the short-run dynamics of the system, impulse response functions (IRFs) are analyzed. These functions trace the response of tourism demand to a one-time shock of one standard deviation in each of the explanatory variables over time. In the IRF graphs, the horizontal axis represents time measured in months, while the vertical axis shows the percentage of the response of tourism demand to the shock[4].

Analyzing the impulse response functions (IRFs), the response of the number of tourists to a shock in Argentina's GDP is positive, as expected, reaching approximately 7% during the first year (Figure 3). This result indicates that improvements in economic activity in Argentina lead to a significant increase in tourism demand for Uruguay.

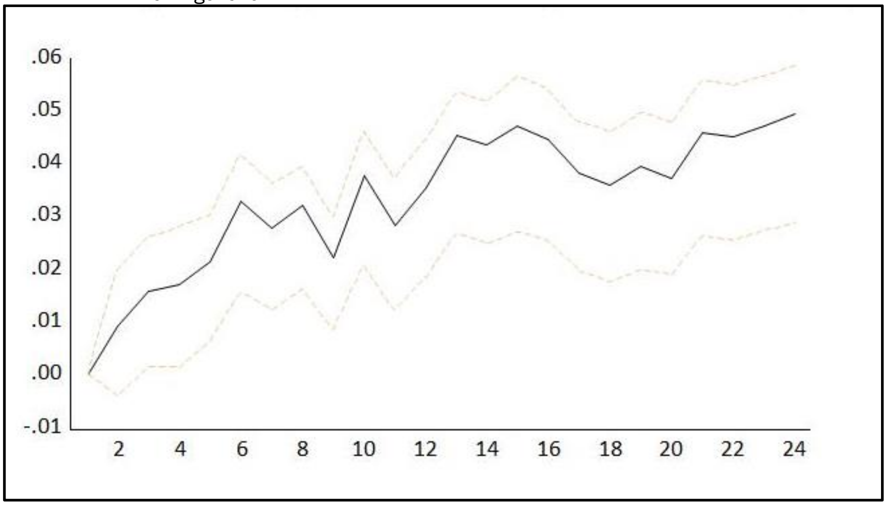
Similarly, in response to a shock in the real exchange rate (RER), tourism demand increases by about 5% during the first year (Figure 4). This suggests that a depreciation of the Argentine currency, which improves relative prices for Argentine tourists, tends to stimulate travel to Uruguay.

Figure 3 - Response of Argentine tourism demand to a one standard-deviation impulse in Argentine GDP



Source: authors' own elaboration.

Figure 4 - Response of Argentine tourism demand to a one standard-deviation impulse in the bilateral RER with Argentina

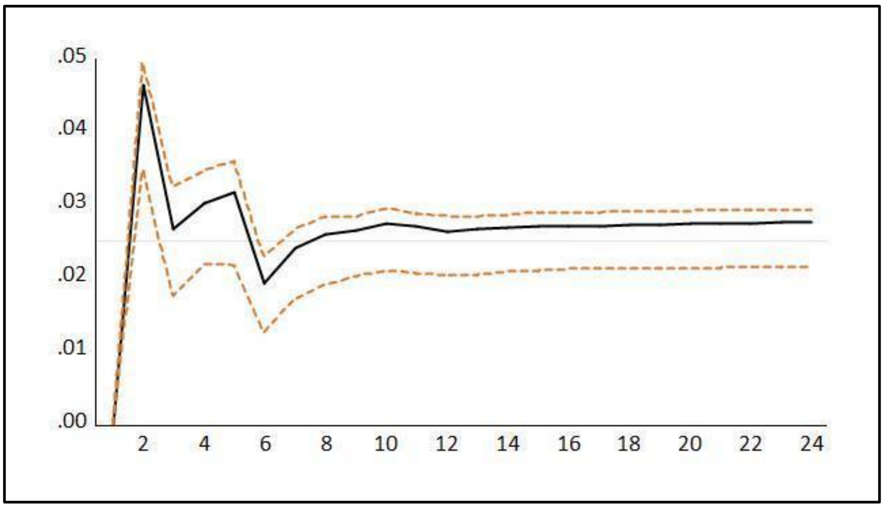


Source: authors' own elaboration.

In the case of Brazil, the response of tourism demand to a GDP shock is smaller than that observed for Argentina. Following a positive shock to GDP, the number of tourists increases by nearly 5% in the first month, after which the response gradually stabilizes at around 3% (Figure 5).

[4]The confidence intervals are constructed using the bootstrap method proposed by Peter Hall (1986), which corrects the percentile bootstrap by centering the interval around the original estimate using the bootstrap distribution of the estimation error.

Figure 5 - Response of Brazilian tourism demand to a one standard-deviation impulse in Brazilian GDP



Source: authors' own elaboration.

Finally, we ran a forecast of the models and obtained the expected growth of Argentine and Brazilian tourists visiting Uruguay in 2025 and 2026. The Argentine tourism sector is expected to grow by 8% in 2025 and by an additional 8.5% in 2026, according to forecasts. Brazil is projected to see a 12% increase in tourism in 2025 and a 9% increase in 2026.

In the Brazilian model, we considered the uncertainty index, which was significant as an exogenous variable for the RER series. Several dummy variables were introduced, including seasonal dummy variables, Easter holidays, the 2015 Brazilian recession, and the 2020-2021 global pandemic.

4.2.2. Other results of interest

As demand for tourism in Uruguay comes from several origins: regional tourists (from Argentina and Brazil), Uruguayans living abroad, and tourists from the rest of the world, it is interesting to analyse also the dynamics of the last two groups (Figures A.2 and A.3 in the Appendix). To this end, two VECM models were estimated, one for each group of tourists. After applying exclusion and exogeneity tests and making the necessary residual adjustments, equilibrium relationships were found between tourism demand and income.

In the case of Uruguayans living abroad, it was assumed that the majority reside in Argentina. Therefore, the income elasticity of tourism demand was estimated with respect to Argentina's GDP. The bilateral RER between the two countries was also included in the model, but was not significant in the long-term equation. The resulting equation is as follows:

$$Tour_{uy} = \underset{(-3.66)}{8.86}\, GDP_{arg} + 40.55 \qquad (4)$$

The long-term relationship shows high income elasticity at 8.86, indicating that tourism by Uruguayan residents in Argentina is highly sensitive to the economic situation in Argentina.

For its part, the tourism demand of rest of the world (which excludes Argentines, Brazilians, and Uruguayans living abroad) is related in the long term only to the global GDP, according to the following equation:

$$Tour_{int} = \underset{(-3.57)}{1.74} GDP_{rw} + 9.20 \qquad (5)$$

In this case, the estimated income elasticity of 1.74 shows a positive relationship between the tourism demand of the rest of the world and the global GDP, although its value close to unity and lower than the other income elasticities found would indicate that this type of tourism is not a luxury good. This could mean that European tourists, for example, base their decisions to travel to Uruguay heavily on their own economic situation.

For Uruguayans living abroad, the estimated adjustment coefficient is −0.080, indicating that approximately 8% of the disequilibrium is corrected each month. This suggests a gradual adjustment process, in which the system converges back to its long-run equilibrium in roughly one year. In the case of tourists from the rest of the world, the estimated coefficient is slightly higher, at −0.097. This implies that about 9.7% of the disequilibrium is corrected each month, indicating a somewhat faster adjustment process and a convergence toward the long-run equilibrium that may take around eleven months.

4.3. Robustness for main empirical findings

4.3.1. VEC models using seasonally adjusted series

For checking the robustness of the model, especially taking into account the importance of the seasonality of tourism series, we estimated new models for Argentina and Brazil tourism demand, seasonally adjusting tourism and GDP series in both models, but not RER, because it's not a variable that shows seasonality.

For the Argentine model, RER was not significant in the model for the long run, but it was included in the short-run adjustment.

In this case, the long-run equation was:

$$Tour_{arg} = \underset{(7.06)}{5.09}\, GDP_{arg} - 13.66 \tag{6}$$

In this model, the income elasticity of tourism demand was even higher than in the model with non-seasonally adjusted series, but the signs were in the expected direction.

In the short run, both variables, GDP and RER, were significant. In addition, in the short term, when shocks occur, tourism demand readjusts to its equilibrium relationship with GDP in approximately one year and one month.

For the Brazilian model, the RER was also not significant in the long-run relationship, and the income elasticity of Brazilian tourism demand was similar to the non-seasonal adjusted model.

The long-run equation was:

$$Tour_{bra} = \underset{(5.64)}{3.02}\, GDP_{bra} - 4.8 \tag{7}$$

In the short term, the real exchange rate was not significant, and it was found that tourism demand is the variable that makes the adjustment once a shock occurs and deviates from its equilibrium relationship with GDP. This adjustment occurs completely in approximately 4 months and 10 days.

4.3.2. ARDL Models

On the other hand, the original models were re-estimated using the Autoregressive Distributed Lags (ARDL) methodology, which also allows the identification of long-run relationships among the variables of interest. To do so, we rely on the results obtained from the previously estimated VECM models, in which tourism demand was found to be endogenous. This made it possible to treat this variable as the dependent variable in the new models.

For Argentina, the following long-run relationship was obtained:

$$Tour_{arg} = \underset{(3.40)}{3.81}\, GDP_{arg} + \underset{(2.59)}{1.03} RER_{arg} - 11.74 \tag{8}$$

Equation (6) shows that Argentina's tourism demand is linked in the long run to the country's GDP and to the bilateral real exchange rate between Argentina and Uruguay. The estimated coefficients in this equation represent the corresponding elasticities of tourism demand with respect to GDP and the RER, which are 3.81 and 1.03, respectively.

For Brazil, the long-run equation obtained was:

$$Tour_{bra} = \underset{(1.97)}{4.26}\, GDP_{bra} \tag{9}$$

In this case, the equilibrium relationship (equation 7) is established between Brazil's tourism demand and its GDP. As in the case of Argentina, the estimated elasticity is relatively high, at 4.26, indicating that tourism behaves as a luxury good.

In summary, the robustness analysis conducted through both the estimation of VEC models using seasonally adjusted series and the estimation of ARDL models suggests that tourism behaves as a luxury good for both Argentina and Brazil, as reflected in the high income elasticities obtained.

Regarding price elasticity, it is only statistically significant in the case of Argentina, except when the series are seasonally adjusted. In contrast, for Brazilian tourists visiting Uruguay, relative prices do not appear to play a significant role in travel decisions. According to Gunter & Panosso Netto (2016), this finding supports the idea that tourism from this country behaves as a luxury good and may exhibit a Veblen-type effect associated with conspicuous consumption.

4.4. Discussion

There is a large body of literature estimating tourism demand elasticities. Table 4 summarizes some of the main findings from several studies on this topic. Income elasticities reported in the literature vary widely, ranging from 1.32 to 13.44 depending on the methodology used, the period analyzed, and the country considered. In general, these results suggest that international tourism behaves as a luxury good, as income elasticities are typically greater than one. By contrast, price elasticities show a smaller range, from 0.10 to 2.07, indicating that relative prices may have a more moderate and heterogeneous effect on tourism demand.

Table 4 - Tourism Demand Elasticities

Authors	Year	Country	Methods	Period of analysis	Income elasticity (+)	Price elasticity (-)
Mervar & Payne	2007	Croatia	ARDL	1994.Q1-2004.Q4	3.36 to 5.01	Not significative
Garín- Muñoz	2007	Spain	GMM-Diff estimator	1991 - 2003	2.69	1.06
Wang	2009	Thailand	ARDL	1996.Q1 - 2006.Q2	3.35	Not significative
Ketenci	2010	Turkey	ARDL	1996.01 - 2000.12	1.55 to 13.44	0.45 to 2.07
Song et al.	2010	Hong Kong	ARDL	1985.Q1 - 2006.Q4	1.32	0.10
Altmark et al.	2013	Uruguay	VECM	1996.Q1–2011.Q2	1.90 to 2.68	0.6 to 1.17
Gunter & Panosso Netto	2016	Brazil	VECM	2003.Q1–2012.Q4	2.79 to 6.37	0.4
Mendieta-Aragón & Garín-Muñoz	2020	Spain	GMM-Diff estimator	2008 - 2018	2.48	1.65

Source: Authors' own elaboration.

In this paper, the estimated income elasticity for Argentina is 3.98, while for Brazil it is 3.27. These values fall within the range reported in the literature and confirm that tourism to Uruguay behaves as a luxury good for visitors from both countries. In comparative terms, the estimated elasticities are similar to those found in studies for destinations such as Croatia and Thailand (Mervar & Payne, 2007; Wang, 2009) and are somewhat lower than the upper bounds reported for Turkey or Brazil (Ketenci, 2010; Gunter & Panosso Netto, 2016). Given that there are very few empirical studies focusing on tourism demand for Uruguay, these results provide updated evidence that complements the findings of Altmark et al. (2013), who reported income elasticities between 1.90 and 2.68. The somewhat higher elasticities found in the present study may reflect structural changes in tourism demand over the last decade, as well as the extension of the sample period.

It is also important to note that the study period includes the COVID-19 pandemic, during which international mobility restrictions and border closures severely limited tourist arrivals. This exceptional shock may have affected the estimated elasticities and could partially explain differences with previous studies summarized in Table 4, which were conducted using periods without such disruptions.

Regarding prices, the estimated price elasticity is only statistically significant in the Argentine model, with a value of 0.45, which is also consistent with the range reported in the literature. This magnitude suggests that relative prices play a role in tourism decisions, although their effect appears to be smaller than that of income. In contrast, the price variable is not statistically significant in the Brazilian model. One possible interpretation is that travel to Uruguay—particularly to destinations such as Punta del Este—may represent a form of conspicuous consumption or a status symbol for Brazilian tourists, making demand less sensitive to relative price changes (Gunter & Panosso Netto, 2016).

Overall, these results are broadly consistent with the international evidence on tourism demand and contribute new empirical findings for Uruguay, a destination for which relatively little updated econometric evidence is available.

5 CONCLUSIONS

This paper analyzed the determinants of tourism demand in Uruguay, focusing on its two main source markets—Argentina and Brazil—over the period 2005–2025. Using Vector Error Correction Models (VECM) and complementary robustness checks, the study examined the long-run and short-run relationships between tourist arrivals, income in the countries of origin, relative prices, and uncertainty.

First, the results confirm the existence of stable long-run relationships between tourism demand and its main determinants. In both the Argentine and Brazilian models, income in the country of origin plays a central role in explaining tourism flows to Uruguay. The estimated income elasticities are high (3.98 for Argentina and 3.27 for Brazil), indicating that tourism behaves as a luxury good. This finding is consistent with the international literature and reflects the strong dependence of Uruguay's tourism sector on the economic performance of its neighboring countries.

Second, relative prices—captured through the bilateral real exchange rate—are relevant only for Argentine tourists. The estimated elasticity suggests that improvements in Uruguay's price competitiveness stimulate arrivals from Argentina, although the magnitude of this effect is smaller than that of income. In contrast, the real exchange rate is not statistically significant in the Brazilian model, suggesting that Brazilian tourism demand is driven primarily by income rather than relative prices. This result may reflect differences in travel motivations and spending patterns between the two groups of tourists, with Brazilian visitors potentially perceiving travel to Uruguay as a higher-end or status-related consumption activity.

Third, the adjustment dynamics differ significantly between the two markets. Argentine tourism demand adjusts relatively quickly to deviations from the long-run equilibrium, while Brazilian demand shows a slower adjustment process. These differences highlight the heterogeneous behavior of tourism demand depending on the origin of visitors and reinforce the importance of analyzing tourist flows by nationality.

The robustness checks conducted using seasonally adjusted VEC models and ARDL specifications confirm the main findings. In particular, they reinforce the conclusion that income is the dominant determinant of tourism demand for both countries, while price effects remain relevant mainly for Argentina.

In addition, the analysis of other visitor groups shows that tourism by Uruguayans living abroad is highly sensitive to Argentina's economic conditions, while tourism from the rest of the world is primarily related to global economic activity. These results highlight the strong regional dependence of Uruguay's tourism sector.

Overall, the findings provide updated empirical evidence on the determinants of tourism demand for Uruguay during a period characterized by significant economic fluctuations and the unprecedented disruption caused by the COVID-19 pandemic. Given that tourism represents an important share of Uruguay's economy—accounting for roughly 9% of GDP and more than 7% of employment in recent years—understanding these demand dynamics is crucial for both policymakers and private stakeholders.

From a policy perspective, the results suggest that maintaining macroeconomic stability and strengthening regional economic integration are key factors for sustaining tourism growth. At the same time, diversification of source markets may help reduce the country's strong dependence on Argentina and Brazil. Future research could further explore structural changes in tourism demand after the pandemic and assess how emerging trends—such as digitalization, sustainability concerns, and changing travel preferences—may reshape tourism flows to Uruguay in the coming years. The impact on tourism of second homes, especially those owned by Argentine tourists, could also be studied, as this could not be included in this study due to a lack of information.

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Data Availability Statement

Data must be requested from the author at gabriela.mordecki@fcea.edu.uy

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7. APPENDIX

7.1. Models' output

7.1.1. Argentina

Vector Error Correction Estimates			
Sample (adjusted): 2006M02 2025M05			
Included observations: 232 after adjustments			
Standard errors in ( ) & t-statistics in [ ]			
Cointegration Restrictions:			
B(1,1)=1, A(2,1)=0, A(3,1)=0			
Convergence achieved after 3 iterations.			
Restrictions identify all cointegrating vectors			
LR test for binding restrictions (rank = 1):			
Chi-square(2)	1.524389		
Probability	0.466641		
Cointegrating Eq:	CointEq1		
LOG(TOUR_ARG(-1))	1.000000		
LOG(GDP_ARG(-1))	-3.976379		
	(0.39923)		
	[-9.96004]		
LOG(RER_ARG(-1))	-0.448742		
	(0.14738)		
	[-3.04488]		
C	10.22083		
Error Correction:	D(LOG(TOUR_ARG))	D(LOG(GDP_ARG))	D(LOG(RER_ARG))
CointEq1	-0.328919	0.000000	0.000000
	(0.03973)	(0.00000)	(0.00000)
	[-8.27965]	[NA]	[NA]
R-squared	0.940177	0.895780	0.698996
Adj. R-squared	0.917744	0.856698	0.586120
Sum sq. resids	2.617839	0.063311	0.243273
S.E. equation	0.124829	0.019413	0.038053
F-statistic	41.90958	22.92028	6.192585
Log likelihood	190.9953	622.7523	466.6020
Akaike AIC	-1.094787	-4.816830	-3.470707
Schwarz SC	-0.143963	-3.866006	-2.519883
Mean dependent	-0.002731	0.001875	0.000613
S.D. dependent	0.435244	0.051281	0.059150
Determinant resid covariance (dof adj.)		8.50E-09	
Determinant resid covariance		3.23E-09	
Log likelihood		1279.702	
Akaike information criterion		-9.350880	
Schwarz criterion		-6.453838	
Number of coefficients		195	

7.1.2. Brazil

Vector Error Correction Estimates			
Sample (adjusted): 2005M06 2025M05			
Included observations: 240 after adjustments			
Standard errors in ( ) & t-statistics in [ ]			
Cointegration Restrictions:			
B(1,1)=1, A(3,1)=0, A(2,1)=0, B(1,3)=0			
Convergence achieved after 4 iterations.			
Restrictions identify all cointegrating vectors			
LR test for binding restrictions (rank = 1):			
Chi-square(3)	2.468567		
Probability	0.480998		
Cointegrating Eq:	CointEq1		
LOG(TOUR_BRA(-1))	1.000000		
LOG(GDP_BRA(-1))	-3.268685		
	(1.56806)		
	[-2.08454]		
LOG(RER_BRA(-1))	0.000000		
C	4.751396		
Error Correction:	D(LOG(TOUR_BRA))	D(LOG(GDP_BRA))	D(LOG(RER_BRA))
CointEq1	-0.081653	0.000000	0.000000
	(0.01666)	(0.00000)	(0.00000)
	[-4.89978]	[NA]	[NA]
R-squared	0.895470	0.844185	0.406286
Adj. R-squared	0.875709	0.814728	0.294042
Sum sq. resids	4.831842	0.049510	0.126679
S.E. equation	0.155045	0.015695	0.025105
F-statistic	45.31317	28.65771	3.619659
Log likelihood	128.1041	677.8015	565.0634
Akaike AIC	-0.742534	-5.323346	-4.383861
Schwarz SC	-0.176930	-4.757742	-3.818257
Mean dependent	0.003109	0.001370	-0.002917
S.D. dependent	0.439782	0.036462	0.029879
Determinant resid covariance (dof adj.)		3.55E-09	
Determinant resid covariance		2.09E-09	
Log likelihood		1376.297	
Akaike information criterion		-10.46914	
Schwarz criterion		-8.728819	
Number of coefficients		120	

7.2. Unit roots, cointegration, and residual tests

Table A.1 - ADF unit root tests

	Levels(1)			First Differences(1)		
Series(2)	Statistic	Specification	Reject Ho at 95%	Statistic	Specification	Reject Ho at 95%
$tour_{ARG}$	-2.276574 (0.4446)	Constant Trend	no	-4.546181 (0.0001)	Constant	yes
$tour_{BRA}$	-3.001426 (0.1341)	Constant Trend	no	-4.125612 (0.0011)	Constant	yes
GDP_{ARG}	-2.962946 (0.1451)	Constant Trend	no	-3.968148 (0.0019)	Constant	yes
GDP_{BRA}	-2.308465 (0.4272)	Constant Trend	no	-3.927828 (0.0022)	Constant	yes
RER_{ARG}	-1.807602 (0.3763)	Constant	no	-11.53311 (0.0000)	None	yes
RER_{BRA}	-1.267301 (0.1887)	None	no	-7.004578 (0.0000)	Constant	yes
Uncertainty_uy	-2.644402 (0.0855)	Constant	no	-14.29397 (0.0000)	Constant	yes

Source: Authors' own elaboration.

Table A.2 - Cointegration test for the Argentine tourism demand model

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Trace 0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.360447	1191235	2979707	0.0000
At most 1	0.042580	1.274.099	1.549.471	0.1247
At most 2	0.009971	2.384.923	3.841.465	0.1225
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized	Max-Eigen 0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.360447	1.063.825	2.113.162	0.0000
At most 1	0.042580	1.035.607	1.426.460	0.1896
At most 2	0.009971	2.384.923	3.841.465	0.1225
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Table A.3 - Cointegration test for the Brazilian tourism demand model

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Trace 0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.115025	39.15474	29.79707	0.0032
At most 1	0.038365	9.827615	15.49471	0.2942
At most 2	0.001826	0.438617	3.841465	0.5078
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized	Max-Eigen 0.05			
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.115025	29.32713	21.13162	0.0028
At most 1	0.038365	9.388998	14.26460	0.2552
At most 2	0.001826	0.438617	3.841465	0.5078
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Table A.4 - Normality test for Argentina VECM

Component	Jarque-Bera	df	Prob.
$Tour_{ARG}$	1.455563	2	0.4830
GDP_{ARG}	0.126172	2	0.9389
RER_{ARG}	3.249864	2	0.1969
Joint	4.831599	6	0.5656
*Approximate p-values do not account for coefficient estimation			

Table A.5 - Normality test for Brazil VECM

Component	Jarque-Bera	df	Prob.
$tour_{BRA}$	2.574165	2	0.2761
GDP_{BRA}	4.691798	2	0.0958
RER_{BRA}	0.672270	2	0.7145
Joint	7.938233	6	0.2427
*Approximate p-values do not account for coefficient estimation			

7.3. Outliers

Table A.6 - Outliers Argentine model

Date	Type	Variable affected	Possible reason
2008.09	IO	uncertainty_uy	Lehman Brothers crisis
2013.06	IO	rer_arg	A rise in the parallel exchange rate due to strong distrust
2018.02	IO	uncertainty_uy	Major bank strike
2018.04	IO	GDP_arg	The mega-devaluation begins
2018.10	IO	rer_arg	Resignation of the president of the Central Bank
2019.08	IO	rer_arg	Mandatory primary elections (PASO)
2020.03	IO	GDP_arg	Beginning of the Covid-19 pandemic
2020.04	IO	Tourist_arg, GDP_arg, rer_arg	Beginning of the Covid-19 pandemic
2021.01	IO	Toursit_arg (-)	Border closures for tourism at the start of the season
2022.01	IO	Toursit_arg (-)	New outbreak of Covid-19
2022.07	IO	Tourist_arg, rer_arg, uncertainty_uy	A sharp exchange rate gap is hindering Argentine tourism
2023.08	IO	rer_arg	Mandatory primary elections (PASO)
2023.11	IO	rer_arg	Volatility after elections
2023.12	IO	GDP_arg, rer_arg	New government takes power: Javier Milei
2025.04	IO	uncertainty_uy	US Announcements about tariffs: "Liberation day"
easter	TC	Tourist_arg, GDP_arg	Easter holidays: days in March and April
pandemic	TC	Toursit_arg	From 2020.03 to 2021.10

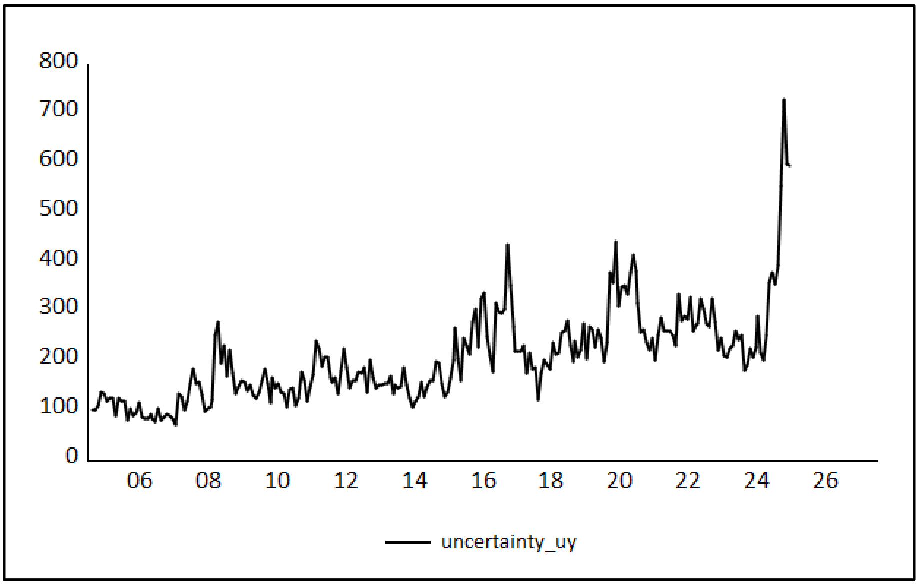
Source: authors' own elaboration.

Table A.7 - Outliers Brazilian model

Date	Type	Variable affected	Possible reason
2007.11	IO	rer_bra	The beginning of the impact of the "Great Recession" in Brazil
2008.10	LS	rer_bra	Lehman Brothers crisis
2009.07	LS	Tour_bra	Global financial crisis and fear of H1N1 flu
2009.10	IO	Tour_bra	Beginning of the recovery after the international crisis
2012.09	LS	Tour_bra	Record domestic tourism
2015.03	IO	rer_bra	Start of protests in favor of the president's impeachment
2018.10	LS	rer_bra	Brazilian real appreciation due to Bolsonaro's lead in the runoff
2019.03	IO	Tour_bra	Expectations regarding the pension reform of Bolsonaro's government
2020.03	IO	Tour_bra	Beginning of the Covid-19 pandemic
2020.04	LS	Tour_bra, GDP_bra	Beginning of the Covid-19 pandemic
2020.06	IO	Tour_bra	Impacts of the Covid-19 pandemic
2020.12	LS	Tour_bra	Impacts of the Covid-19 pandemic
2021.07	LS	Tour_bra	Impacts of the Covid-19 pandemic
2022.01	LS	Tour_bra	New outbreak of Covid-19
2025.04	IO	GDP_bra	Positive outlook for first quarter growth
easter	TC	Tour_bra, GDP_bra	Easter holidays: days in March and April
pandemic	TC	Tour_bra	From 2020.03 to 2021.10

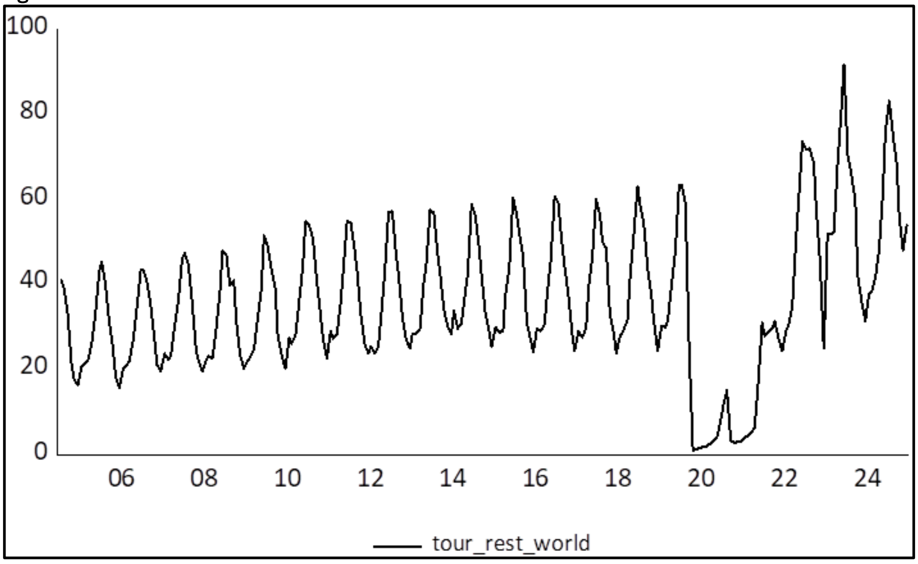
Source: authors' own elaboration.

Figure A.1 - Uruguayan uncertainty index



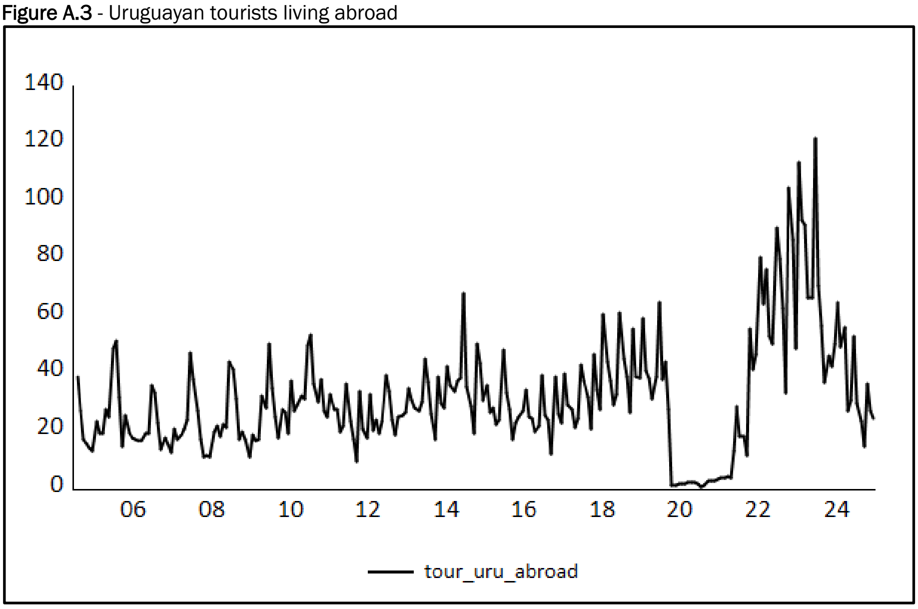
Source: authors' own elaboration based on Lanzilotta, B., Merlo, G., Mordecki, G., Umpiérrez, V. (2023).

Figure A.2 - Tourists from the rest of the world



Source: Ministry of Tourism, Uruguay.

Figure A.3 - Uruguayan tourists living abroad



Source: Ministry of Tourism, Uruguay.