Tourism and Political Stability: Exploring the Moderating Role of Disposable Income

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Abstract

This paper investigates the relationship between political stability and international tourism revenue, with a specific focus on how household income moderates this relationship. Using a panel dataset of 266 countries from 1996 to 2020 compiled from World Bank indicators, the study tests whether political stability significantly increases tourism receipts and whether its effectiveness depends on a country's level of household consumption. The key independent variable is political stability, measured by the Worldwide Governance Indicators. Household consumption expenditure, adjusted for purchasing power parity (PPP), is used as a proxy for disposable income. The dependent variables include international tourism receipts and, in robustness checks, tourism arrivals.

To examine the proposed interaction, the study employs pooled OLS, fixed effects, and random effects models, controlling for macroeconomic factors such as GDP per capita (PPP), inflation, exchange rate, unemployment, and foreign direct investment. The main results show that political stability on its own does not always predict higher tourism revenue, but when interacted with household income, it has a strong positive effect. This indicates that political stability enhances a country's ability to translate rising domestic consumer capacity into tourism demand. Robustness checks using tourism arrivals confirm this interactive effect.

These findings contribute to the literature by modeling political stability as the main driver of tourism revenue, while explicitly testing how this relationship is influenced by levels of household income. The study suggests that good governance and stable institutions are especially important for translating household-level economic strength into tourism performance. Policymakers and investors should consider not only political stability in isolation but also how it interacts with household-level economic conditions when evaluating tourism potential.

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I. Introduction

Tourism plays a crucial role in global economic growth, contributing significantly to employment, foreign exchange earnings, and infrastructure development. In many developing and middle-income countries, tourism serves as a major source of export revenue and foreign investment, boosting national income and supporting long-term economic resilience. According to the World Travel and Tourism Council (2024), tourism accounts for over 10% of global GDP, underscoring its macroeconomic importance. Given its scale and reach, understanding the determinants of tourism revenue is essential for informing public policy and supporting investment decisions in tourism-related infrastructure and services.

Tourism demand is influenced by a variety of economic and institutional factors. While conventional models emphasize the role of disposable income and relative prices in shaping consumer behavior (often classifying tourism as a luxury good due to its high income elasticity), this paper instead focuses on political stability as the primary determinant of tourism revenue. Political conditions, including safety, institutional quality, and absence of violence, shape international perceptions of risk and heavily influence destination choices. Even in countries with strong economic fundamentals and growing household income, tensions of political unrest, terrorism, or weak governance can deter tourism by raising safety concerns and damaging a country's global reputation. This study investigates whether improvements in political stability significantly increase tourism revenue, and whether this effect is stronger in countries with higher levels of household income.

This framework reflects the idea that political stability is the primary driver of tourism demand, with its effectiveness conditional on a country’s level of household economic capacity. For example, a politically unstable middle-income country may fail to attract tourists despite rising household wealth, whereas a stable country with similar income levels may convert that economic strength into higher tourism revenue. In this context, household income acts as a moderator rather than a primary driver, shaping the extent to which political conditions translate into economic benefits. This hypothesis is supported by prior research showing that tourists are rational agents who consider both affordability and safety when selecting destinations (Crouch, 1994; Neumayer, 2004; Lee et al., 2020). Political stability functions as an institutional condition that can influence how effectively income translates into tourism demand, particularly in high-risk destinations.

This study contributes to the existing literature by explicitly modeling the interaction between political stability and disposable household income, using a panel dataset of 266 countries from 1996 to 2020 compiled from World Bank Data. Most prior studies consider either disposable income or political risk independently. In contrast, this study tests whether household income amplifies or dampens the effect of political stability on tourism revenue, providing insight into how domestic economic capacity shapes the transmission of governance improvements into tourism outcomes. To address data limitations, household consumption expenditure (adjusted for purchasing power parity) is used as a proxy for disposable income. Although distinct from income in theory, consumption is accepted as a more stable and observable indicator of household economic well-being.

The empirical strategy begins with a Pooled Ordinary Least Squares (OLS) regression to establish a baseline relationship between political stability and tourism revenue. This benchmark

model allows for easy interpretation and comparison. The analysis then proceeds to more robust panel data models, specifically Fixed Effects (FE) and Random Effects (RE) regressions, to account for unobserved country-specific heterogeneity. A Hausman test is conducted to determine the appropriate model. To capture the conditional relationship between political stability and household income, the model includes an interaction term between political stability and household consumption (used as a proxy for disposable income). This term allows for testing whether the effect of political stability on tourism revenue depends on a country's level of household income. The models also control for other macroeconomic variables that influence tourism, including GDP per capita (PPP-adjusted), inflation, exchange rate, unemployment, and foreign direct investment (FDI). As a robustness check, the analysis is also replicated using international tourism arrivals as an alternative dependent variable to verify that the results are not sensitive to the specific measure of tourism performance.

Finally, this paper ensures robustness by dealing carefully with missing observations, checking for multicollinearity between predictors, and analyzing a restricted 1996–2020 sample to account for the availability of political stability data and tourism arrival data. The remainder of this paper is structured as follows. Section II reviews key literature on the economic and political determinants of tourism demand. Section III introduces the dataset, describes the main variables, and presents summary statistics. Section IV outlines the econometric models, including the regression equation, fixed and random effects specifications, and the interaction term. Section V presents the main results and interprets their significance. Section VI concludes with a discussion of policy implications, study limitations, and extensions for further future research.

II. Literature Review

Political stability plays a critical role in shaping tourism flows, especially in regions affected by violence, terrorism, or governance breakdowns. Neumayer (2004) investigates the impact of political instability on international tourist arrivals using a panel of 134 countries from 1970 to 2000. He finds that civil unrest, terrorism, and violations of human rights significantly and persistently reduce tourism demand, with effects lasting years beyond the immediate crisis. His fixed-effects and Generalized Method of Moments (GMM) models reveal that even countries with strong economic fundamentals struggle to attract visitors if their political environment is perceived as unsafe. While Neumayer's analysis centers on the direct deterrent effects of instability, it does not test whether such conditions alter how economic capacity—such as household income—translates into tourism demand. This study builds on his findings by considering political stability not just as a direct predictor, but as a moderating force that conditions the effectiveness of income in driving tourism revenue.

Similarly, Asongu et al. (2022) emphasize the broader role of governance quality in enabling tourism-led development in Sub-Saharan Africa. Their panel analysis of 1996–2018 data shows that political stability, rule of law, and government effectiveness are consistently linked with higher tourism receipts. Moreover, their study underscores that tourism fosters long-term development only when governance is strong. FDI is also shown to support tourism infrastructure and overall attractiveness, though their models do not test for interaction effects between governance and economic variables. This paper extends their work by testing whether governance, specifically political stability, amplifies the effect of disposable income on tourism revenue. In contrast to their regional scope, my study adopts a global dataset spanning 266 countries over a slightly longer period (1996–2020), providing a more generalized test of the

conditional role of stability.

While political conditions shape tourism viability, economic drivers—particularly disposable income—are foundational to travel demand. Crouch (1994) reviews 85 empirical studies and finds that income elasticity of tourism demand generally falls between 1.0 and 2.0, classifying tourism as a luxury good. He emphasizes that household income and GDP per capita are among the most influential factors in predicting international tourism flows, especially in emerging economies. However, Crouch also highlights that estimates of income elasticity vary significantly depending on model design and country context. He argues that non-economic variables such as safety and governance are often ignored or assumed constant, potentially biasing results. This paper takes up by explicitly modeling political stability as a moderator of the income–tourism relationship rather than treating it as a static or background factor.

Lee et al. (2020) further support the importance of household income in tourism demand, especially in developing countries where discretionary spending rises with even modest income gains. Their panel analysis shows that income, exchange rates, and inflation all significantly affect tourism flows, with income being the most robust predictor. However, their model does not include institutional variables such as political stability, leaving a gap in understanding how governance might shape the translation of income into travel. This study introduces this omitted factor by testing whether political stability interacts with household consumption (a proxy for disposable income) and assessing whether income is more effective at generating tourism in politically stable environments.

Beyond governance and income, macroeconomic controls such as inflation, unemployment, and currency strength also affect international travel patterns. As Lee et al. (2020) note, high inflation or currency appreciation can raise travel costs and deter visitors, while high unemployment may signal instability or underinvestment in tourism infrastructure. These factors are included as controls in the model of this paper, but the paper's key contribution is its focus on how political stability shapes the broader income–tourism link. That is, rather than viewing income and stability as separate or competing influences, the model evaluates whether they are interdependent.

In summary, past literature affirms that both economic and political conditions affect tourism demand. However, few studies explicitly examine whether political stability moderates the effect of income on tourism outcomes. Neumayer (2004) and Asongu et al. (2022) emphasize the importance of governance but do not test for interaction effects. Meanwhile, Crouch (1994) and Lee et al. (2020) model income effects without institutional variables. This paper bridges these literatures by testing whether political stability not only influences tourism directly but also strengthens the capacity of rising household income to generate tourism revenue.

III. Data and Descriptive Statistics

The dataset used in this study consists of a balanced panel compiled from publicly available World Bank Open Data, covering 266 countries from 1996 to 2020. After merging all variables and excluding observations with missing values for the main analytical variables, the final sample comprises 2,258 observations. This dataset was constructed by individually preprocessing and combining time-series data on international tourism receipts, political stability, household consumption, GDP per capita (PPP), inflation, exchange rates, unemployment, and foreign direct investment (FDI). The raw data files were structured in wide format and first reshaped into long format to facilitate country-year merging. All non-numeric

metadata rows were dropped, and year variables were destringed and dropped to match the format of samples from 1996–2020.

Following the merging process, data cleaning procedures were conducted to ensure internal consistency and interpretability. Several variables with large numerical values were rescaled: GDP and household consumption were divided by 1 trillion, while tourism receipts were divided by 1 billion. International tourism arrivals, our robustness check variable, were divided by 1 million. This alternative dependent variable provides a distinct yet complementary measure of tourism activity, allowing the analysis to verify whether results hold when tourism is quantified by the number of visitors rather than total receipts. Next, a numeric panel ID variable was generated to identify each country uniquely. Then panel structure was declared, which is necessary to account for the time-series cross-sectional structure of the data and enable the use of fixed effects and random effects models. To ensure consistency in regression estimation, all observations with missing values in the key variables were dropped prior to running descriptive and inferential statistics.

To ensure both international comparability, several variables were transformed into standardized units. Household consumption and GDP per capita are adjusted for purchasing power parity (PPP) and expressed in constant 2021 international dollars. The PPP adjustment accounts for differences in price levels across countries, ensuring that monetary values reflect equivalent purchasing power rather than nominal exchange rates. Expressing values in constant 2021 dollars removes the effects of inflation over time, allowing for meaningful comparisons across years without distortion from changing price levels. These adjustments are essential when conducting cross-country panel analyses, as they isolate real economic trends from nominal fluctuations and exchange rate distortions.

The dependent variable in this study is international tourism receipts, measured in current U.S. dollars. This indicator captures the total expenditure of inbound tourists, making it a direct and meaningful measure of tourism performance. The key independent variable is political stability, sourced from the Worldwide Governance Indicators and available annually from 1996 onward. As the study focuses on whether political stability enhances tourism revenue, either directly or in interaction with household-level economic factors, Household consumption—adjusted for purchasing power parity and expressed in constant 2021 international dollars—is used as a moderator. Due to data limitations, household consumption is used in place of household disposable income. Although these two indicators differ conceptually (disposable income being gross income after taxes and transfers) household consumption is a widely accepted proxy due to its greater data availability and stability. In fact, consumption tends to be less volatile than income over time, owing to households' ability to smooth spending through savings and borrowing. This substitution allows for cross-national comparability while preserving the economic relevance of household spending behavior in shaping the tourism response to political conditions.

Several control variables are included to account for broader macroeconomic conditions that may influence both governance quality and tourism. GDP per capita, PPP adjusted, serves as a proxy for overall economic prosperity. Inflation, measured as the annual percentage change in consumer prices, captures domestic price stability and its implications for travel costs. The exchange rate variable reflects the average official exchange rate in local currency units per U.S. dollar, affecting international tourists' purchasing power. Unemployment is included as a percentage of the labor force, indicating domestic labor market health. Foreign direct investment, measured as a percentage of GDP, reflects long-term economic attractiveness and investment in

key sectors including tourism. Each of these control variables is chosen for its theoretical and empirical relevance to international tourism flows.

A distinctive contribution of this study is the explicit modeling of political stability as the main explanatory variable rather than a background control. This index ranges from -2.5 (lowest stability) to +2.5 (highest stability), and it reflects perceptions of the likelihood of political unrest, terrorism, or government collapse. Table 1 in appendix A contains descriptions of variables used in the study. Since this variable is only available from 1996 onward, observations from earlier years lack corresponding values. To accommodate this limitation while preserving analytical rigor, political stability is incorporated into a restricted-sample model spanning from 1996 to 2020. This model is used to assess whether more stable countries generate more tourism revenue, and whether this effect depends in part on domestic consumption conditions. For graphical exploration and robustness purposes, a quartile-based indicator of political stability is generated to split the data into four equal groups, ranging from the least to the most stable regimes.

To further illustrate how political stability may relate to economic outcomes relevant to tourism, two box plots were generated (see appendix). Figure 1 presents the distribution of household consumption across political stability quartiles. The results show a generally increasing trend in median household consumption as stability improves, although quartile 3 exhibits unusually high outliers. This pattern suggests that countries with higher political stability may exhibit greater economic activity and consumption. Figure 2 displays the distribution of international tourism receipts across the same quartiles. While variability is high across all groups, the third and fourth quartiles show a visibly higher concentration of countries with large tourism revenues, especially in the upper range. Together, these visualizations support the idea that political conditions may be linked not only to income and consumption levels but also to tourism performance, reinforcing the motivation for treating political stability as a core explanatory variable in the empirical model.

IV. Econometric Model

This study evaluates the relationship between household consumption and tourism revenue using a panel data framework. The primary model specification is a fixed effects (FE) estimator, which is well-suited for longitudinal data where unobserved heterogeneity across countries may bias results. The equation estimated in the interaction model is as follows:

$$TourismRecipts_{it} = \beta_0 + \beta_1 \cdot Stability_{it} + \beta_2 \cdot Consumption_{it} + \beta_3 \cdot (Stability_{it} \times Consumption_{it}) + \beta_4 \cdot X_{it} + u_{it}$$

In this equation, $TourismRecipts_{it}$ represents international tourism receipts in billions of U.S. dollars for country i in year t. $Stability_{it}$ is the political stability index ranging from -2.5 (least stable) to +2.5 (most stable), and $Consumption_{it}$ is household consumption in trillions of PPP-adjusted 2021 international dollars. X_{it} includes control variables such as GDP per capita (PPP), inflation, exchange rate, unemployment, and FDI. The term u_{it} captures the unsystematic error.

The parameters of interest in this model are β_1, β_2 , and β_3. The coefficient β_1 captures the direct effect of political stability on tourism revenue, holding household consumption constant. β_2 measures the marginal effect of consumption when political stability is zero. Most

importantly, β_3 represents the moderating effect: how the relationship between political stability and tourism revenue changes depending on a country's level of household consumption. A positive β_3 implies that political stability is more effective in promoting tourism in higher-consumption economies, while a negative value would suggest that the impact of stability weakens as consumption increases.

The first set includes pooled OLS, FE, and RE regressions with political stability as the main independent variable but without the interaction term and household consumption, using the set of available data from 1996 to 2020. The second set includes political stability, household consumption and the interaction of political stability with household consumption. This strategy ensures comprehensive use of the cleaned panel and valid testing of the central hypothesis regarding the conditional role of household consumption. The six resulting models are presented in Table 4 of the appendix.

The FE model is the preferred model due to its ability to control for unobserved, time-invariant country characteristics such as geography, cultural tourism assets, or long-standing institutions that are likely correlated with both political stability and tourism revenue. These fixed characteristics are absorbed into country-specific intercepts α_i, thereby eliminating potential omitted variable bias from invariant sources. Technically, the FE estimator implemented in Stata through the xtreg, fe command uses the entity-demeaned transformation, subtracting country means from each variable to eliminate unobserved heterogeneity. In contrast, the RE model assumes that the unobserved country effects are uncorrelated with the regressors, which is a strong and often unrealistic assumption in panel data. To evaluate the validity of this assumption, a Hausman test is conducted after each RE and FE estimation. If the test shows that the country-specific effects are correlated with the explanatory variables, the FE model is preferred for providing consistent estimates. Pooled OLS is also included for comparison, although it is expected to suffer from omitted variable bias since it ignores unobserved heterogeneity entirely.

Because panel data models with repeated observations per country are prone to serial correlation, and because macroeconomic variables often exhibit heteroskedasticity, all regressions use robust standard errors clustered at the country level. This approach ensures reliable inference even when the classical assumptions of homoscedasticity and no autocorrelation are violated.

An interaction term between political stability and household consumption is included to test the conditional hypothesis that the effectiveness of political stability in promoting tourism depends on a country's level of economic capacity. The interaction is generated directly in the dataset and included in the restricted period regressions. No log transformations or nonlinear terms are used in the current specification because the key variables are already expressed in economically interpretable units (tourism in billions, consumption in trillions, etc.) following unit rescaling during the data cleaning phase. In support of the interactive hypothesis, box plots of household consumption and tourism receipts by political stability quartile (Figures 1 and 2) reveal that both variables exhibit higher means and wider dispersion in politically stable environments. These visual patterns motivated the use of interaction terms to allow the marginal effect of political stability to vary by consumption levels.

Several diagnostic and specification checks are conducted to ensure model robustness. First, a joint F-test is used to assess whether political stability and the interaction term are jointly significant in explaining tourism revenue. This test evaluates whether the moderating effect of household consumption is meaningful in the context of the full model. The results of joint F-tests

and Hausman test can be found in Table 5 of appendix A. Second, the possibility of multicollinearity is acknowledged, particularly because interaction terms can increase correlation between regressors. While no formal tests are performed due to the focus on fixed effects estimation, preliminary observations of standard errors and signs across models suggest that multicollinearity does not misrepresent inference. Third, the potential for endogeneity is acknowledged; particularly the possibility that tourism revenue could affect GDP or household consumption. While addressing such endogeneity would require instrumental variable techniques or dynamic panel methods, such analysis is beyond the scope of this paper and is left for extended future research.

As an additional robustness check, the main regressions are re-estimated using international tourism arrivals as an alternative dependent variable to tourism receipts. This provides a complementary measure of tourism performance that focuses on physical inflows rather than monetary expenditures. The corresponding models follow the same fixed effects, random effects, and pooled OLS specifications used in the main analysis. The goal is to assess whether the observed relationships hold across different dimensions of tourism activity. These robustness regressions are presented in Table 4b of the appendix, and their results are interpreted in the results section (Section V).

V. Results

This section presents the main empirical findings from the regression models displayed in Table 4, the robustness checks in Table 4b, and diagnostic tests in Table 5. The analysis focuses on three core explanatory variables: political stability (main independent variable), household consumption (moderator), and their interaction term. All models also control for macroeconomic variables including GDP (PPP-adjusted), inflation, exchange rate, unemployment, and FDI. Each coefficient is interpreted using its original units, and the discussion highlights statistical and economic significance across multiple model specifications.

V.1. Main Estimates: Political Stability, Household Consumption, and Interaction

In the baseline OLS model without the interaction term (Model 1, Table 4), political stability has a strong positive association with international tourism receipts. The coefficient of 2.477 ($p < 0.01$) implies that a one-unit increase in the political stability index is associated with an increase of approximately $2.48 billion in tourism revenue, all else equal. However, this model does not account for unobserved country-level characteristics—such as geography, cultural heritage, or long-standing institutional factors—so the estimated effect is likely biased due to omitted variables. This concern is confirmed in Models 2 and 3, where the effect becomes statistically insignificant or negligible, indicating that country-specific heterogeneity may confound the relationship.

When household consumption and its interaction with political stability are included (Models 4–6, Table 4), the results provide stronger evidence for a conditional effect. In the fixed effects interaction model (Model 5), the main coefficient on political stability becomes significantly negative (−2.812, $p < 0.01$), but this is not interpreted directly. Instead, the interaction term is the focus: the coefficient of 7.193 ($p < 0.01$) indicates that for each additional trillion USD in household consumption, the marginal effect of political stability on tourism receipts increases by $7.19 billion. This finding supports the paper's core hypothesis that

political stability translates into greater tourism revenue primarily when household consumption levels are higher, suggesting that governance quality enhances the economic capacity for tourism, not merely the supply side or tourist safety perceptions.

This pattern also aligns with prior studies. Neumayer (2004) found that civil unrest deters tourism persistently, while Asongu et al. (2022) emphasized the role of political institutions in tourism-led development. However, these works did not model income–stability interactions explicitly. In contrast, the current study shows that political stability alone is insufficient; it must operate within a context of household purchasing power. Household consumption itself also shows a positive and significant association with tourism revenue in the interaction model, with a coefficient of 8.803 ($p < 0.01$), reinforcing its role as an enabling economic force.

V.2. Model Comparison and Fixed Effects Justification

The Hausman tests reported in Table 5 provide compelling statistical evidence favoring the fixed effects (FE) estimator over the random effects (RE) model. In the baseline specification without interaction (Model 2 vs. Model 3), the test yields a chi-square statistic of $\chi^2(6) = 72.40$ with a p-value of 0.0000, leading to rejection of the null hypothesis that the unobserved country effects are uncorrelated with the explanatory variables. Similarly, in the interaction model (Model 5 vs. Model 6), the test statistic is $\chi^2(7) = 255.26$ ($p = 0.0000$), again strongly rejecting the null. These results suggest that the RE model violates a key assumption: country-specific characteristics (e.g., historical institutions, geographic factors, or long-term governance quality) are likely correlated with key regressors such as political stability and household consumption. In such cases, the FE model provides consistent and unbiased estimates, while RE does not.

Additionally, two joint F-tests reported in Table 5 validate the appropriateness of the FE framework over pooled OLS. In both the no-interaction and interaction versions, the F-statistics for testing whether all country-specific fixed effects are jointly zero are $F(144, 2303) = 32.28$ and $F(144, 2301) = 35.08$, respectively, both with p-values of 0.0000. This confirms that unobserved heterogeneity across countries is significant and should be accounted for, ruling out the pooled OLS model that assumes identical intercepts across all countries.

Model 5, the fixed effects regression including the political stability × consumption interaction, emerges as the preferred specification on both statistical and theoretical grounds. Not only does it control for unobserved time-invariant characteristics, but it also captures the hypothesized conditional relationship between governance and economic capacity. The R-squared of 0.472 in this model indicates that nearly 47% of within-country variation in tourism receipts is explained by the included predictors. Given the simplicity of the model and the large cross-national panel, this is a reasonably high level of explanatory power.

Together, the Hausman and F-tests justify the choice of fixed effects over alternative specifications and reinforce the robustness of the interaction model. By accounting for both time-invariant confounders and key economic-political interactions, Model 5 provides the clearest window into how governance conditions influence tourism outcomes.

V.3. Robustness Check Using Tourism Arrivals

To test robustness, the models are re-estimated using international tourism arrivals (in millions) as the dependent variable. Results are reported in Table 4b. Despite using a different

measure of tourism activity, the interaction effect remains strong and positive across all models. In the fixed effects arrival model (Model B), the interaction coefficient is 7.921 ($p < 0.01$), closely mirroring the receipts-based model. This consistency suggests that the moderating effect of household consumption on political stability is not merely an artifact of how tourism is measured.

However, some differences emerge. The main effect of political stability is again negative (−2.801, $p < 0.01$), and the direct effect of household consumption is positive in the fixed effects model (11.781, $p < 0.01$), but negative in pooled OLS (−20.075, $p < 0.01$). This inconsistency may reflect omitted variable bias in OLS, or heterogeneity in how different levels of income affect visitor volume versus spending. Still, the robust interaction effect confirms that politically stable countries with higher household consumption attract more tourists—both in number and value.

V.4. Control Variables: Mixed Evidence

Among the control variables, GDP (PPP-adjusted) emerges as a consistently strong and statistically significant predictor of tourism receipts. The coefficients are large and positive across all specifications, ranging from 7.586 in Model 1 to 10.394 in the fixed effects model without interaction (Model 2), and 6.879 in the preferred fixed effects model with interaction (Model 5), all significant at the 1% level. These results indicate that, all else equal, a one-trillion-dollar increase in PPP-adjusted GDP is associated with an increase of approximately \$6.9–\$10.4 billion in international tourism receipts, depending on the model. This supports the interpretation that economic development contributes meaningfully to tourism by improving infrastructure, services, and global visibility.

Unemployment also shows a consistently negative and significant association with tourism receipts in the fixed and random effects models (e.g., −0.150 in Model 5, $p < 0.01$), suggesting that weaker labor markets may signal economic instability or reduced service capacity, thereby deterring international visitors.

Other macroeconomic controls yield more variable results. Inflation appears statistically insignificant across most models, with small and inconsistent coefficients (e.g., −0.004 in Model 5, $p > 0.10$), implying limited direct influence on tourism receipts once other factors are controlled. Exchange rate effects are also small and insignificant in fixed and random effects models, but are negative and statistically significant in OLS models (e.g., −0.000*** in Model 1), potentially reflecting affordability effects—countries with weaker currencies may attract more tourists due to lower relative prices. However, this result weakens once country-specific heterogeneity is accounted for.

Finally, foreign direct investment (FDI) as a percentage of GDP is not statistically significant in any specification. This may suggest that FDI's influence on tourism (if present) manifests through longer-term structural channels not captured in annual panel variation, such as infrastructure development or brand establishment by multinational hospitality firms.

V.5. T-Test Validation of Political Stability Findings

Descriptive comparisons in Table 3 offer valuable preliminary validation of the regression findings by comparing average macroeconomic conditions between countries in the lowest (Q1) and highest (Q4) quartiles of political stability. Most notably, the mean level of

tourism receipts in Q4 countries is $10.198 billion, compared to only $4.263 billion in Q1 countries—a difference of $5.935 billion that is statistically significant at the 1% level (p = 0.0000). This large and highly significant difference supports the main econometric result: more politically stable countries attract significantly higher tourism revenue. It also shows that the effect of political stability holds even in simple descriptive comparisons.

Interestingly, household consumption is slightly higher in the least stable countries (Q1 mean = 0.420 trillion USD) than in the most stable (Q4 mean = 0.359 trillion USD), though the difference is not statistically significant (p = 0.2312). This supports the interpretation that household consumption alone does not drive tourism outcomes. Instead, political stability appears to be a necessary condition for countries to convert household purchasing power into meaningful gains in tourism receipts.

V.6. Summary

Overall, the results support the conclusion that political stability is an essential enabling condition for translating household consumption capacity into tourism success. The interaction term between political stability and consumption is statistically robust across model types and dependent variables. Fixed effects models are strongly favored by diagnostic tests and reveal that the benefits of stability emerge primarily in economically empowered contexts. The robustness of these results, confirmed using both receipts and arrivals data, highlights the importance of modeling institutional quality as a moderator rather than a mere control. These findings contribute to the literature by showing not only that governance matters, but that it magnifies the impact of economic conditions on international tourism outcomes.

VI. Conclusion

This study examines the relationship between political stability and tourism revenue, with a focus on whether this relationship is moderated by household income. Using a balanced panel dataset of 266 countries from 1996 to 2020, the analysis tests whether more politically stable countries attract significantly higher tourism revenue, especially when domestic economic conditions (as proxied by household consumption) are favorable.

The results show that political stability has a significant and positive effect on tourism revenue, but this effect is conditional on household consumption levels. The interaction term between political stability and consumption is consistently positive and statistically significant across both fixed effects and random effects models, indicating that political stability is especially effective at boosting tourism revenue in countries where households have higher purchasing power. These findings suggest that stability alone is not sufficient and that it must be matched by economic capacity to generate meaningful gains in tourism. The implication is that governance quality amplifies the economic returns to household-level prosperity, enabling countries to better convert domestic spending power into external tourism demand.

However, the study has several limitations. First, due to data availability, household consumption is used as a proxy for disposable income, which may not fully capture the nuances of household financial capacity. Second, the analysis is based on observational panel data, meaning causality cannot be firmly established. Political stability and tourism revenue may be jointly influenced by other unobserved factors, such as institutional reforms or regional shocks. Third, while the study controls for key macroeconomic variables, other relevant determinants

such as infrastructure quality, visa policy, or marketing strategies are not included due to data limitations.

Potential extensions to this research could address these limitations in several ways. Future work could incorporate instrumental variable approaches or difference-in-differences designs to strengthen causal inference. Researchers could also use survey-based microdata to examine how individual travel decisions respond to perceptions of political safety in different economic contexts. Another valuable extension would be to analyze whether these findings hold across different regions or income groups, exploring whether the moderating role of consumption varies by development stage. Finally, future studies might assess how the interaction between political stability and other institutional indicators—such as corruption control or rule of law—affects tourism dynamics.

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Appendix A: Tables

Table 1: Description of Variables

Variable	Definition
tourism_receipts	International tourism revenue
tourism_arrivals	Number of international tourist arrivals
political_stability	Political Stability Index (-2.5 = lowest, 2.5 = highest)
household_consumption	Household consumption expenditure (PPP-adjusted)
gdp_ppp	GDP per capita, PPP-adjusted
inflation	Annual % change in consumer prices
exchange_rate	Local currency per USD
unemployment	% of total labor force unemployed
fdi	Foreign Direct Investment as % of GDP

Table 2: Summary Statistics for Main Variables

VARIABLES	(1) N	(2) mean	(3) sd	(4) min	(5) max
GDP (PPP, Trillions USD)	2,258	0.763	2.129	0.000585	22.82
Household Consumption (Trillions USD)	2,258	0.422	1.343	0.000404	15.20
Tourism Receipts (Billions USD)	2,258	7.656	19.13	0.000100	242.0
inflation	2,258	5.504	14.52	-4.448	557.2
exchange_rate	2,258	688.7	2,742	0.0877	40,864
unemployment	2,258	7.531	5.724	0.119	38.80
fdi	2,258	5.845	20.91	-40.26	450.0
political_stability	2,258	-0.0153	0.909	-2.810	1.759
Tourism Arrivals (Millions)	2,258	11.41	26.32	0.00440	217.9

Table 3: Descriptive Statistics according to Political Stability Quartiles Q1 and Q4

Variable Name	Q1 Mean	Q4 Mean	Difference (Q1 − Q4)	p-value
Tourism Receipts	4.263	10.198	-5.935	0.0000
Household Consumption	0.420	0.359	+0.061	0.2312
GDP	0.734	0.727	+0.007	0.9352
Inflation	8.961	2.560	+6.401	0.0000
Exchange Rate	1210.06	47.59	+1162.47	0.0000
Unemployment	7.073	7.000	+0.073	0.8011
FDI (% of GDP)	2.620	9.584	-6.964	0.0000

Figure 1: Household Consumption by Political Stability Quartile

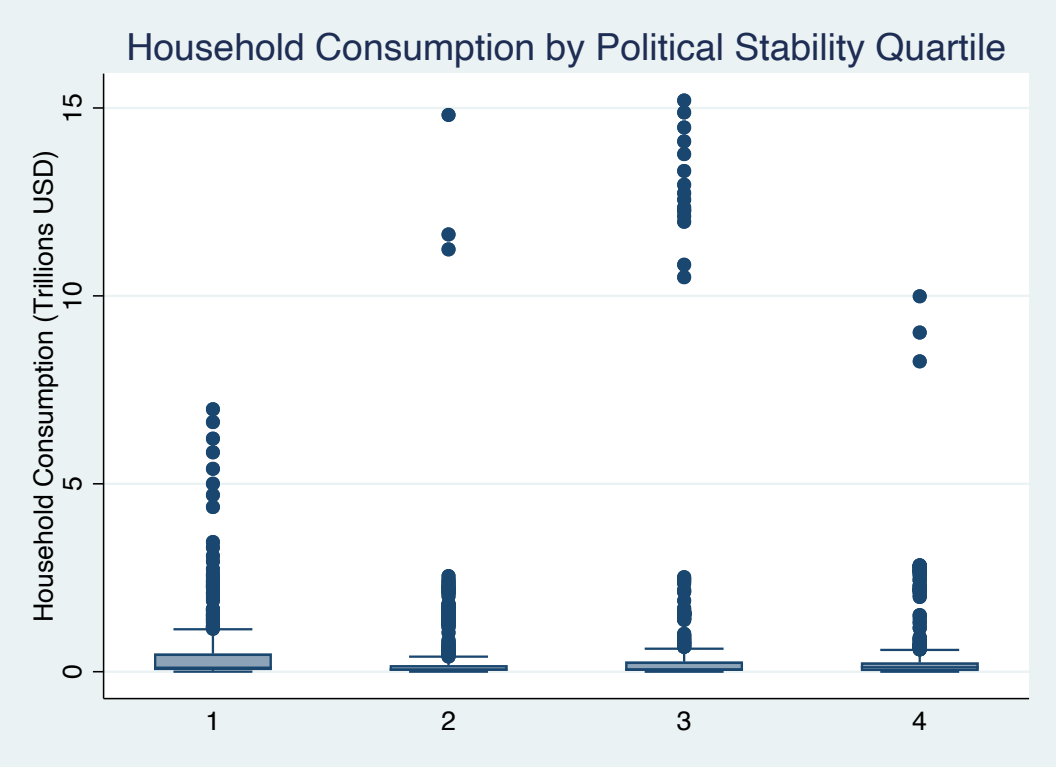

Figure 2: Tourism Receipt by Political Stability Quartile

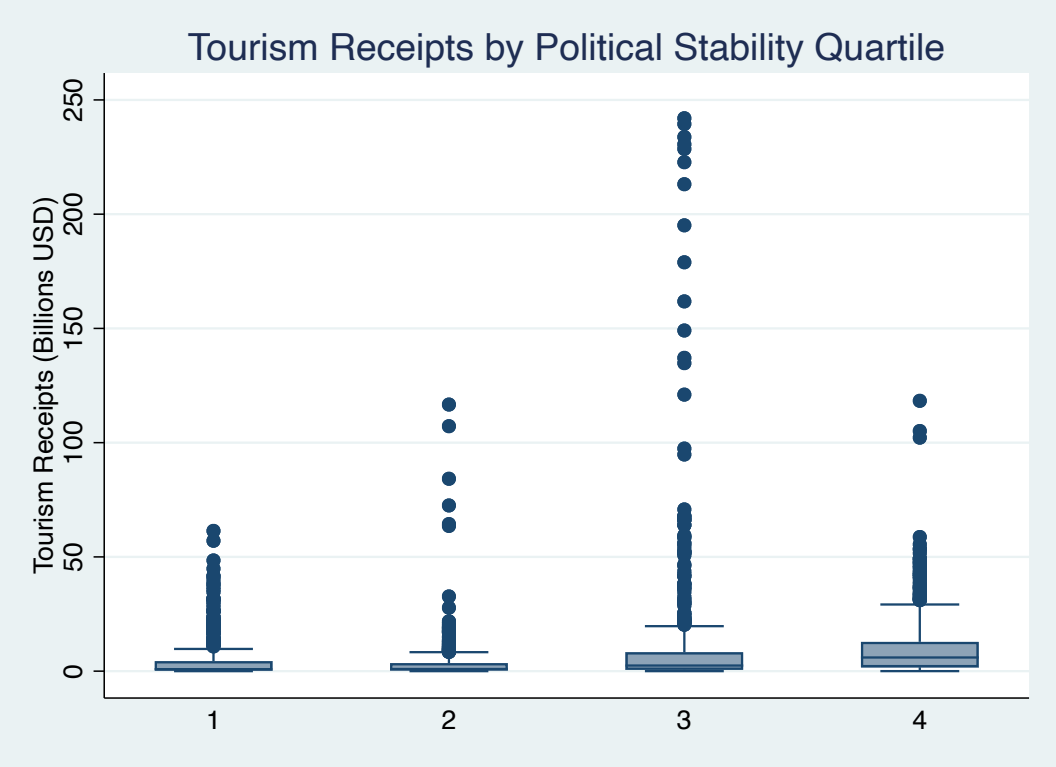

Table 4: Regression Models

VARIABLES	(1) Model 1: OLS	(2) Model 2: FE	(3) Model 3: RE	(4) Model 4: OLS+Int	(5) Model 5: FE+Int	(6) Model 6: RE+Int
political_stability	2.477***	-0.602	0.060	0.971***	-2.812***	-1.729***
	(0.213)	(0.367)	(0.332)	(0.215)	(0.340)	(0.317)
Household Consumption (Trillions USD)				5.639***	8.803***	9.989***
				(1.001)	(2.581)	(1.987)
interaction				4.856***	7.193***	5.882***
				(0.244)	(0.294)	(0.279)
GDP (PPP, Trillions USD)	7.586***	10.394***	8.993***	3.290***	6.879***	3.247***
	(0.092)	(0.312)	(0.231)	(0.628)	(1.670)	(1.260)
inflation	-0.022	-0.003	-0.005	-0.025**	-0.004	-0.009
	(0.014)	(0.016)	(0.012)	(0.012)	(0.014)	(0.011)
exchange_rate	-0.000***	-0.000	-0.000	-0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
unemployment	-0.049	-0.160***	-0.127**	-0.058*	-0.150***	-0.135***
	(0.033)	(0.055)	(0.050)	(0.030)	(0.050)	(0.046)
fdi	0.008	0.008	0.009	0.010	0.006	0.008
	(0.009)	(0.007)	(0.007)	(0.009)	(0.006)	(0.007)
Constant	2.398***	0.900*	1.692**	3.236***	-0.251	1.915***
	(0.343)	(0.512)	(0.780)	(0.321)	(0.504)	(0.724)
Observations	2,454	2,454	2,454	2,454	2,454	2,454
R-squared	0.742	0.334		0.784	0.472	
Number of country_id		145	145		145	145

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4b: Robustness Check Regression with Tourism Arrival

VARIABLES	(1) Model A: OLS Arrivals	(2) Model B: FE Arrivals	(3) Model C: RE Arrivals
political_stability	1.845***	-2.801***	-2.534***
	(0.540)	(0.410)	(0.404)
Household Consumption (Trillions USD)	-20.075***	11.781***	7.095**
	(2.423)	(3.031)	(2.845)
interaction	3.135***	7.921***	7.594***
	(0.602)	(0.340)	(0.336)
GDP (PPP, Trillions USD)	19.337***	2.304	4.855***
	(1.518)	(1.963)	(1.831)
inflation	-0.027	-0.007	-0.009
	(0.030)	(0.017)	(0.015)
exchange_rate	-0.000***	0.000	0.000
	(0.000)	(0.000)	(0.000)
unemployment	0.140*	-0.222***	-0.192***
	(0.076)	(0.062)	(0.061)
fdi	-0.004	0.006	0.006
	(0.021)	(0.008)	(0.008)
Constant	4.565***	6.161***	6.246***
	(0.797)	(0.623)	(1.690)
Observations	2,258	2,258	2,258
R-squared	0.394	0.346	
Number of country_id		143	143

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.

Table 5: Hausman Test and Joint F-test

Test Type	Model Comparison	Test Statistic	Degrees of Freedom	p-value	Conclusion
Hausman Test	FE vs. RE (No Interaction)	$\chi^2(6) = 72.40$	6	0.0000	Reject $H_0 \rightarrow$ FE preferred
Hausman Test	FE vs. RE (With Interaction)	$\chi^2(7) = 255.26$	7	0.0000	Reject $H_0 \rightarrow$ FE preferred
Joint F-Test	Political Stability & Interaction (FE)	$F(2, 2301) = 301.35$	2	0.0000	Jointly significant
Joint F-Test	All $u_i = 0$ (FE, No Interaction)	$F(144, 2303) = 32.28$	144	0.0000	Reject $H_0 \rightarrow$ Use FE over Pooled OLS
Joint F-Test	All $u_i = 0$ (FE, With Interaction)	$F(144, 2301) = 35.08$	144	0.0000	Reject $H_0 \rightarrow$ Use FE over Pooled OLS

Appendix B: Stata Do-File

```
clear all
set more off

* Define path
global path "/Users/soheelim/Desktop/Projects/Tourism_Stability_Project/Datasets (Raw)/"

*********************************************************************************
* 1. Import and preprocess datasets
*********************************************************************************
import delimited "$path/GDP, PPP (constant 2021 international $).csv", clear varnames(4)
stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v gdp_ppp
save gdp.dta, replace

import delimited "$path/Households and NPISHs Final consumption expenditure, PPP (constant
2021 international $).csv", clear varnames(4) stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v household_consumption
save consumption.dta, replace

import delimited "$path/International tourism, receipts (current US$).csv", clear varnames(4)
stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v tourism_receipts
save tourism.dta, replace

import delimited "$path/Inflation, consumer prices (annual %).csv", clear varnames(4)
stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
```

```
replace year = year + 1955
rename v inflation
save inflation.dta, replace

import delimited "$path/Official exchange rate (LCU per US$, period average).csv", clear
varnames(4) stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v exchange_rate
save exchange_rate.dta, replace

import delimited "$path/Unemployment, total (% of total labor force) (modeled ILO
estimate).csv", clear varnames(4) stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v unemployment
save unemployment.dta, replace

import delimited "$path/Foreign direct investment, net inflows (% of GDP).csv", clear
varnames(4) stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v fdi
save fdi.dta, replace

import delimited "$path/Political Stability and Absence of Violence, Terrorism.csv", clear
varnames(4) stringcols(1)
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v political_stability
save political_stability.dta, replace

import delimited "$path/International tourism, number of arrivals.csv", clear varnames(4)
stringcols(1)
```

```
drop indicatorname indicatorcode countrycode
keep countryname v5-v68
reshape long v, i(countryname) j(year)
destring year, replace
replace year = year + 1955
rename v tourism_arrivals
save arrivals.dta, replace

*******************************************************************************
* Merge datasets and clean
*******************************************************************************
use gdp.dta, clear
merge 1:1 countryname year using consumption.dta, nogenerate
merge 1:1 countryname year using tourism.dta, nogenerate
merge 1:1 countryname year using inflation.dta, nogenerate
merge 1:1 countryname year using exchange_rate.dta, nogenerate
merge 1:1 countryname year using unemployment.dta, nogenerate
merge 1:1 countryname year using fdi.dta, nogenerate
merge 1:1 countryname year using political_stability.dta, nogenerate
merge 1:1 countryname year using arrivals.dta, nogenerate

replace gdp_ppp = gdp_ppp / 1e12
replace household_consumption = household_consumption / 1e12
replace tourism_receipts = tourism_receipts / 1e9
replace tourism_arrivals = tourism_arrivals / 1e6

label variable gdp_ppp "GDP (PPP, Trillions USD)"
label variable household_consumption "Household Consumption (Trillions USD)"
label variable tourism_receipts "Tourism Receipts (Billions USD)"
label variable tourism_arrivals "Tourism Arrivals (Millions)"

drop if year > 2020
drop if year < 1996

egen country_id = group(countryname)
xtset country_id year

* Keep only complete cases for ALL variables used
gen restrict_flag = !missing(tourism_receipts, political_stability, gdp_ppp, inflation,
exchange_rate, unemployment, fdi, household_consumption, tourism_arrivals)
keep if restrict_flag == 1

*******************************************************************************
* Summary statistics for main variables (full-case sample)
*******************************************************************************
```

```
summarize tourism_receipts political_stability household_consumption gdp_ppp inflation
exchange_rate unemployment fdi tourism_arrivals year country_id restrict_flag
outreg2 using summary_stats.doc, replace sum(log) label word

*******************************************************************************
* Create interaction term
*******************************************************************************
gen interaction = political_stability * household_consumption

*******************************************************************************
* Export each regression model individually and append to the same table (Table 4)
*******************************************************************************

* Model 1: Pooled OLS (no interaction)
reg tourism_receipts political_stability gdp_ppp inflation exchange_rate unemployment fdi
outreg2 using reg_results.doc, replace dec(3) label ctitle("Model 1: OLS") word

* Model 2: Fixed Effects (no interaction)
xtreg tourism_receipts political_stability gdp_ppp inflation exchange_rate unemployment fdi, fe
estimates store fe1
outreg2 using reg_results.doc, append dec(3) label ctitle("Model 2: FE") word

* Model 3: Random Effects (no interaction)
xtreg tourism_receipts political_stability gdp_ppp inflation exchange_rate unemployment fdi, re
estimates store re1
outreg2 using reg_results.doc, append dec(3) label ctitle("Model 3: RE") word

hausman fe1 re1

* Model 4: Pooled OLS with interaction
reg tourism_receipts political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi
outreg2 using reg_results.doc, append dec(3) label ctitle("Model 4: OLS+Int") word

* Model 5: Fixed Effects with interaction
xtreg tourism_receipts political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi, fe
estimates store fe2
outreg2 using reg_results.doc, append dec(3) label ctitle("Model 5: FE+Int") word

* Model 6: Random Effects with interaction
xtreg tourism_receipts political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi, re
estimates store re2
outreg2 using reg_results.doc, append dec(3) label ctitle("Model 6: RE+Int") word
```

```
hausman fe2 re2

*******************************************************************************
* Joint F-test on interaction
*******************************************************************************
xtreg tourism_receipts political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi, fe
test political_stability interaction

*******************************************************************************
* Robustness: use arrivals instead of receipts (Table 4b)
*******************************************************************************

* Model A: Pooled OLS with interaction, arrivals as DV
reg tourism_arrivals political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi
outreg2 using reg_results_arrivals.doc, replace dec(3) label ctitle("Model A: OLS Arrivals")
word

* Model B: Fixed Effects
xtreg tourism_arrivals political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi, fe
outreg2 using reg_results_arrivals.doc, append dec(3) label ctitle("Model B: FE Arrivals") word

* Model C: Random Effects
xtreg tourism_arrivals political_stability household_consumption interaction gdp_ppp inflation
exchange_rate unemployment fdi, re
outreg2 using reg_results_arrivals.doc, append dec(3) label ctitle("Model C: RE Arrivals") word

*******************************************************************************
* Descriptive t-tests by political stability quartile
*******************************************************************************
xtile stability_quartile = political_stability, nq(4)
gen stability_q1_or_q4 = .

graph box tourism_receipts, over(stability_quartile, label(angle(0))) title("Tourism Receipts by
Political Stability Quartile")
graph box household_consumption, over(stability_quartile, label(angle(0))) title("Household
Consumption by Political Stability Quartile")

replace stability_q1_or_q4 = 1 if stability_quartile == 1
replace stability_q1_or_q4 = 2 if stability_quartile == 4
keep if inlist(stability_q1_or_q4, 1, 2)

ttest tourism_receipts, by(stability_q1_or_q4)
ttest household_consumption, by(stability_q1_or_q4)
```

```
ttest gdp_ppp, by(stability_q1_or_q4)
ttest inflation, by(stability_q1_or_q4)
ttest exchange_rate, by(stability_q1_or_q4)
ttest unemployment, by(stability_q1_or_q4)
ttest fdi, by(stability_q1_or_q4)

*************************************************************************
* Save final dataset
*************************************************************************
save final_data.dta, replace
```