



Political Risk and Development

Measuring the microeconomic impact of political instability on tourism enterprise growth

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I. INTRODUCTION

Political risk analysis has an exciting future. With political instability escalating and waning without notice, sometimes simmering in small localities or spreading across continents, the ability to analyze the microeconomic impact of unfavorable political conditions has increasingly become embraced as a strategic instrument to mitigate risks and vulnerabilities. The political revolutions and oil embargoes of the 1970s served as the wake-up call that revenues, assets, and operations can quickly be rendered obsolete in the face of political turmoil.¹ Although embraced predominantly by financial and energy corporations at first, the strategic value of political risk analysis has made waves in the private sector, with the realization that political risk can affect any business indiscriminately, not just the large multinationals. Despite the evolution of significantly more sophisticated political risk analysis tools over the last 50 years, accurate measurements of political risks haven't yet been perfected, in addition to the contentious debates over what truly constitutes political risk.² Regardless, the field has a lot of promise in delivering actionable evidence, with an increasing wealth of pertinent data and sophisticated statistical tools for research. Large multinationals are happy bear the cost of this research given its strategic value; it's long overdue to provide smaller private sector actors, who might not be able to afford sophisticated data analytics on their own, with relevant insights on how political instability affects their business.

The Madagascar Context

The fourth largest island in the world, Madagascar has harbored the perfect storm for geopolitical risk. With trade winds blowing westward from the Indian Ocean, Madagascar's three mountain ranges that run all along the East coast effectively create a rainshadow for the South-West of the island, dividing the country into different geographies that exacerbate socioeconomic divides.³ While the North and East coasts are covered in rainforests and receive daily precipitation, the SW is arid and bereft of sufficient arable land. Cattle-rearing is therefore a major economic activity for the SW population. Just like its geography, Madagascar's demographics are divided along the same SW/NE lines. The NE coast and central highlands are the drivers of economic activity, while poverty and hunger is far more severe in the SW. Furthermore, the NE population is ethnically Polynesian — descended from the Polynesian sailors who first landed on the island over 7,000 years ago. The SW population, however, is

¹ Rice, Condoleezza, and Amy Zegart. 2018. "Political Risk: Facing the Threat of Global Insecurity in the Twenty-first century." London: Weidenfeld & Nicolson.

² Althaus, Catherine. 2008. "Calculating Political Risk." New York: Earthscan from Routledge.

³ Symonds, Theo. 2018. "The 21st Wild West: Cattle-Rustling Gangs in Western Madagascar." *CULP 045*, Georgetown University, Professor Dr. Elzbieta Gozdzia.

ethnically East Africa — descended from East Africans who came to populate the West of the Island around the same time, hailing from modern-day Mozambique. The majority of the population is ethnically Polynesian, and therefore has more representation in the national government. The majority of those living in the SW are poorer and ethnically East-African. Due to worsening socio-economic divides, Malagasy politics have been volatile over the last decade. A coup-d'état rocked the country when the opposition movement, backed by the military, ousted the incumbent President in 2009. Before this political crisis, foreign aid accounted for 40% of the Malagasy state budget and 75% of investments; after the unconstitutional transfer of power, the African Union subsequently sanctioned Madagascar and slashed its foreign aid payments.⁴ It wasn't until 2013 that Madagascar was able to follow through on its long-delayed national elections. By this point, 92% of the Madagascar lived on less than USD\$2 per day, and almost a decade later the economic situation has not recovered.

Despite renewed national elections in 2018, the political climate still remains volatile. Due to the value of zebu cattle in the SW, Dahalo cattle-rustling gangs have been on the rise, conducting lethal raids in villages with impunity, given the Malagasy state is weak and unable to enforce security in these geographically-challenging *Zones Rouges*. Many young men who leave their national conscripted service with the army — skilled with weapons and without any other job prospects — end up joining these Dahalo cattle-rustling gangs. Without an ameliorating political climate, crime and poverty can only be reduced through alternative sources of income.

In an effort to generate employment and revenues for the state, Madagascar has promoted tourism development as a national economic strategy. Although many beach resorts in the NE have existed for decades, the government has recently encouraged destination development in the SW, which still holds untapped natural destinations. A growing tourism industry could serve as an unmatched opportunity to generate new employment, and contribute to a long road of economic recovery. However, the unfavorable political climate in Madagascar still has the potential to derail tourism development if the political situation devolves further.

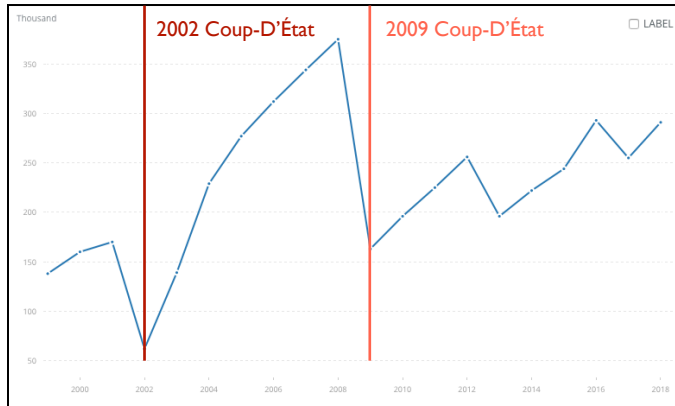
Tourism & Political Risk

Tourism is one of the world's largest employers — last year, one in ten jobs around the world was in tourism.⁵ In Madagascar alone, the tourism industry grew almost 8%, and 25% of all new Malagasy jobs created were in tourism. It seems that as Madagascar has slowly improved from

⁴ Ross, Aaron, and Rijasolo. "Madagascar: When the Aid Dries Up." *Pulitzer Center*. 19 December 2013.

⁵ 2019 Economic Impact Report. World Travel & Tourism Council

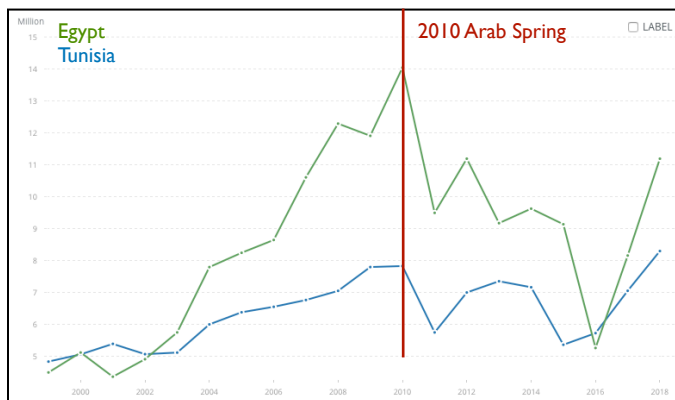
its 2009-2013 political strife, and its tourism industry has followed suit. But a sudden political catastrophe has the potential to cripple the industry.



Madagascar Tourism Arrivals (thousands)

- In the year of the 2002 coup-d'état, there were 62,000 tourism arrivals; a 63.5% decrease from 2001.
- In the year of the 2009 coup-d'état, there were 163,000 tourism arrivals; a 56.5% decrease from 2008.

Source: World Bank



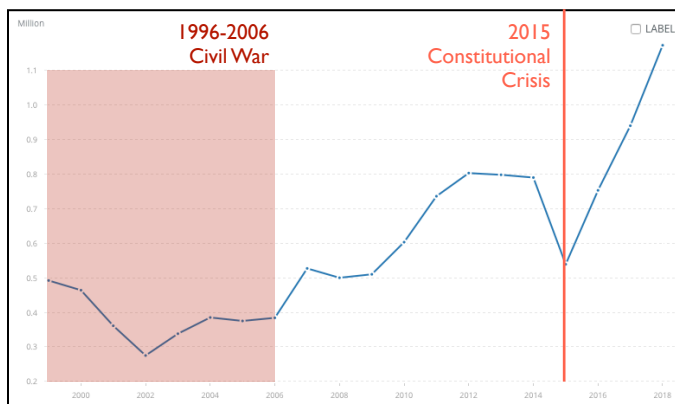
Egypt Tourism Arrivals (millions)

- In the six years that followed the Arab Spring, tourism arrivals dropped by 62.6%.

Tunisia Tourism Arrivals (millions)

- In the year following the 2010 Arab Spring, tourism arrivals dropped by 26.6%.

Source: World Bank



Nepal Tourism Arrivals (millions)

- Tourism arrivals stagnated during the 1996-2006 Civil War.
- Between 2006-2007, tourism arrivals increased by 37.2%. In 2012, tourism arrivals had increased by 109.1%.
- In the year of the 2015 Constitutional Crisis, tourism arrivals dropped by 31.8%.

Source: World Bank

There is a discernible trend that during years of extreme political instability, the numbers for tourism arrivals plunge. If we consider arrivals to be an important driver of the tourism industry, and that an adverse political climate results in less arrivals, we can assume that political instability does indeed have an affect on tourism growth. Despite the appearance of correlation, this assumption remains unproven. Ultimately, statistical tests will reveal more significant conclusions on the relationship between political climate and tourism firm growth.

Research Objective

For countries like Madagascar that present an unfavorable political climate while also pushing to develop its tourism industry, it would be beneficial to understand the microeconomic impacts of political instability on tourism firm growth. With statistically significant evidence, volatile countries and international tourism organizations can collaborate to direct national and local policies aimed at protecting tourism firms from political risk-induced contractions.

As countries like Madagascar venture to build thriving tourism industries, what can policymakers learn from tourism enterprises facing politically volatile conditions around the world?

Research Thesis

How do unfavorable political conditions affect the employment growth of tourism firms versus non-tourism firms?

Econometric results could go either way — while we can reasonably assume that firms will struggle to grow in politically volatile climates, it's also possible that some elements of political instability could alleviate burdens of state bureaucracy that in turn yields higher growth. Statistical tests will either corroborate or dismiss these assumptions; but more importantly, they will provide evidence to measure whether tourism firms are more adversely impacted by unfavorable political climates than non-tourism firms. The hypothesis can therefore be set as:

H₀: in unfavorable political climates, tourism firms generally experience the same employment growth as non-tourism firms.

H₁: in unfavorable political climates, tourism firms generally experience better or worse employment growth than non-tourism firms.

To prove that unfavorable political conditions have more of an effect on tourism firms than on non-tourism firms, the evidence should reject the null hypothesis that political volatility affects employment growth in all industries at about the same percentage.

II. LITERATURE REVIEW

There is a wide availability of literature that relates to the measurement and effects of political risk on the private sector. Since the 1970s, this field of analysis has gained prominence as a strategic tool, but one common theme across the literature is the apprehension with defining the nuances of political volatility. Due to wide-ranging definitions and conditions present in academic literature on political risk, this paper utilizes a litany of sources to generate a holistic conception of political volatility (Ake, 1975; Althaus, 2008), and how political volatility affects the private sector (Aisen and Jose Vega, 2011; Rice and Zegart, 2018).

When identifying variables in the WBES that fall under the Political Climate umbrella, the most important source for this paper comes from Condoleezza Rice's groundbreaking work on identifying the categories of political risks faced by the private sector (Rice and Zegart, 2018), as she wields decades of experience in the field of political risk.

There also exists a large number of empirics and academic studies on employment growth, which provide the empirical foundations of the regression models in this paper (Aterido, Hallward-Driemeier, and Pagés, 2011; Davis and Haltiwanger, 1992). The employment growth calculation by Davis and Haltiwanger (1992) serves as our main dependent variable with which we are measuring the impact of political volatility on tourism firms. Since the Aterido, Hallward-Driemeier, and Pagés (2011) model measured employment growth as it relates to investment climate, it served as a strong baseline with which to design the analysis between employment growth and Political Climate.

We also utilize Hou and Ma's (2012) reasoning to include industry, year, and city fixed effects in our regressions.

However, the disconnect in the literature is the rarity of finding work that encompasses the intersection of all three. The only body of research that measures the effect of political instability on tourism was done by Matta (2016), in which the regressions showed a strong relationship of tourism firms' sales revenues being more adversely by political instability. However, my paper aims to expand the scope, from 'political instability' to 'Political Climate'. With Aterido, Hallward-Driemeier, and Pagés, (2011) and Matta (2016) as the baselines, this paper was effectively able to properly encompass political risk and it relates to employment growth, for tourism firms specifically.

III. DATA

Data Source

This study relies on firm-level micro data from the World Bank Enterprise Survey (WBES), updated as of March 2020. The WBES project was devised with the aim of collecting information to better understand firm performance according to a plethora of variables with which to make statistical inferences. Each survey is conducted at the country level for a specified year period, where randomly selected firms respond to surveys designed and conducted according to the standardized WBES survey methodology.¹ The full dataset contains 158,781 total observations, collected from firm responses in countrywide enterprise surveys since 2006. The median sample size for a country survey is 729 firms. Each firm sample for a given country is stratified according to size, sector, and location type. For many countries, there are multiple surveys from different years, but these do not serve as panel data, unless otherwise noted under *stra_sector*.

While there are many types of variables collected through the WBES, there are two types that are especially of interest to this paper. The first type is firm performance data; specifically employment growth and sales growth. The second type are ordinal ratings, where firms make a self-assessment on the degree to which certain conditions affect their business operations. The degrees range from No Obstacle, Minor Obstacle, Moderate Obstacle, Major Obstacle, and Very Severe Obstacle.

Dependent Variable

As stated in the hypothesis, the dependent variable of interest is a valid measure of enterprise growth: employment growth. For this variable, we follow the measurement of employment growth as calculated by Davis and Haltiwanger (1992, 1999) in their research on job creation, gross job destruction, and employment reallocation.² This calculated employment growth is denoted as *empGRW*.

EmpGRW for a firm is calculated as the change in number of permanent employees recorded between the survey time *t* and three years prior to the survey, divided by the firm's average of permanent employment during the *t-3* period. *EmpGRW* provides a meaningful employment growth rate calculation, because its measure is symmetric approaching zero and bound between

¹ See <https://www.enterprisesurveys.org/Methodology/>

² Davis, Steven J., and John Haltiwanger. 1992. "Gross Job Creation, Gross Job Destruction, and Employment Reallocation." *Quarterly Journal of Economics* Vol 107, no. 3:819–63.

the values of -2 and +2, while monotonically tied to the growth rate and approximation of the logarithmic difference; meaning that we can avoid arbitrary treatment of outliers and better analyze dramatic growth and contractions. This approach is important considering that small, young firms appear to have employment grow at blistering rates due to their initially small size, or old firms close to exit appearing to have drastic contractions. EmpGRW accounts for these dramatic growth differences by referring employment growth to different t periods for different firms (as seen in the empirical specifications in section IV).

The decision on whether to use empGRW or sales growth (salesGRW) was not an easy one. Both are appropriate measures of firm growth, and both provided strong results in preliminary t -tests with tourism firms and political instability. However, after putting forward the Madagascar Context, it's clear that empGRW is the more meaningful dependent variable with which to measure tourism firm growth. Given the security and macroeconomic benefits derived from increased employment in the tourism industry, empGRW is therefore the most appropriate and economically-relevant dependent variable with which to measure the impact of the Political Climate on tourism firms.

Independent variables - Unstable political environment conditions

Perhaps the most challenging aspect of an accurate measurement for this research, is defining the principle independent variable — the Political Climate. On a basic level, the Political Climate is binomially characterized by the presence or absence of a set conditions that reflect the degree to which of a state's governance capacities are strong or weak; in other words, an indication of volatility in the political system. Whether states are blatantly cracking down on protestors or fighting rebel factions and coup-d'états, or there is a more benign systematic fault like bribery and corruption, these Political Climate conditions signal that the political system is volatile, because there are no legitimate guarantees of procedures, security, or rule-of-law. Political Climate is the overarching variable to measure the impact that any instance of a varied list of political volatility has on enterprises.

Along these lines, an unfavorable Political Climate is one where there are politically-induced conditions that firms may see as an obstacle to their operations. In other words, Political Climate refers to the existence of a unstable political environment, relative to each firm. With the obstacle variables provided in the WBES, we can construct the parameters of the Political Climate independent variable, with a set of obstacle variables that fall under the purview of Political Climate.

To identify the politically-induced microeconomic conditions that characterize Political Climate, this paper relies on the political risk expertise of Rice and Zegart (2018), and evidence from Matta's (2016) regressions on political instability for tourism firms in Tunisia.^{3 4}

When Matta (2016) investigated the relationship between political instability and tourism revenue growth in Tunisia, the ordered probit model of political instability regressed on firm characteristics revealed statistically significant results indicating that political instability was most likely to be an obstacle for tourism firms, food firms, exporters, and firms who have lost revenue to crime. The variable 'how much of an obstacle is political instability' is an obvious condition that should be included in Political Climate. With Matta's (2016) findings, we can also add the variable 'how much of an obstacle is crime/theft/disorder' (i30) to the Political Climate conditions, given that firms who lose more of their sales to crime, are also more likely to see political instability as an obstacle. This is a reasonable inclusion make for Political Climate, because a rise in crime and disorder is indicative of a weakening government, and therefore can be considered a factor in fostering an unfavorable Political Climate.

However, with the many more obstacle variables at our disposal in the WBES, the Political Climate independent variable can be appended to better reflect the relevant parameters of political volatility. Rice and Zeggart (2018) propose ten key types of political risks to firms, many of which are related to obstacle variables in the WBES. They include geopolitical power shifts, internal political strife, laws, breaches of contract, corruption, extrajudicial reach, natural resource manipulation, social activism, terrorism, and cyber threats.

We immediately notice that internal political strife denotes the same conditions as political instability (j30e), as does corruption (j30f). In addition Matta's (2016) evidence on the relationship between crime and political instability, the political strife risk also accounts for the rise in crime that results from political volatility, so we can add also crime/disorder (i30) as a condition for PC. There are also many important risk types that denote an unsteady legal system: laws, breaches of contract, and extrajudicial reach. Without clear procedures or rule-of-law, businesses can be burdened by informal systematic bribery (*bribe*) and ineffective courts.

³ Rice, Condoleeza, and Amy Zegart. 2018. "Political Risk: Facing the Threat of Global Insecurity in the Twenty-first century." London: Weidenfeld & Nicolson.

⁴ Matta, Samer. 2016. "The Microeconomic Impact of Political Instability: Firm-Level Evidence from Tunisia." PhD Dissertation, University of Nottingham.

Even worse, without working courts or legal protections, businesses are at risk of losing assets suddenly and irreversibly.

Below are all the variables that constitute Political Climate:

Variable	How much of an obstacle is...
j30e	Political Instability
j30f	Corruption
i30	Crime, Theft, and Disorder
h30	Courts
bribe	Paid bribe? (Y=1/N=0)

Now we are finally ready to state the conditions of our Political Climate independent variable. A firm operates in an unfavorable Political Climate ($\text{political_climate}==1$), when the firm sees either political instability, corruption, crime/disorder, or courts, as a Major or Very Severe obstacle, or has paid a bribe. A firm operates in an favorable Political Climate ($\text{political_climate}==0$), when the firm doesn't see political instability, corruption, crime/disorder, or courts as an obstacle, and has never paid a bribe.

$$PC_i = 0 \text{ if } ((j30e==0) \text{ or } (j30e==1) \text{ or } (j30e==2)), \text{ and } ((j30f==0) \text{ or } (j30f==1) \text{ or } (j30f==2)), \text{ and } ((i30==0) \text{ or } (i30==1) \text{ and } (i30==2)), \text{ and } ((h30==0) \text{ or } (h30==1) \text{ or } (h30==2)), \text{ and } (bribe==0);$$

$$PC_i = 1 \text{ if } (j30e==3); \text{ or } (j30e==4); \text{ or } (j30f==4); \text{ or } (j30f==4); \text{ or } (i30==3); \text{ or } (i30==4); \text{ or } (h30==3); \text{ or } (h30==4); \text{ or } (bribe==1);$$

Independent Variables - Firm Characteristics

The remaining independent variables are for firm characteristics to be utilized as controls in regressions. The most important firm characteristics for the purposes of this paper, is Tourism. The tourism independent dummy variable is equal to 1, when the firm's stratification sector is either "Hospitality & Tourism" or "Hotels and Restaurants". This will be our most important variable in regressions, to determine the empGRW difference between tourism versus non-tourism firms. The remaining independent variables for regression controls include firm size, firm age, industry size, exporter status, and foreign-owned.

Biggest Obstacle for Tourism Firms

Question m1a on the WBES asked firms to select what they viewed as being the biggest obstacle to business operations. Figure 1 below shows the number and proportion of tourism firms that selected one of our Political Climate variables as their biggest obstacle:

Figure 1

Biggest Political Climate Obstacles on Tourism Firm Operations

variables	n	% of all tourism firms
Political Instability	341	19.13
Corruption	145	8.13
Crime, Theft and Disorder	52	2.92
Courts	13	0.73

Looking at tourism firms' responses for the biggest obstacle facing their business operations, the plurality of tourism firms seem to view political instability as a problem. Almost 1 in 5 tourism firms indicated that political instability was the biggest obstacle to their operations. The second-most picked obstacle was electricity, with 13.24% of tourism firms viewing it as the biggest obstacle, followed by tax rates, access to finance, and competitors, each being the biggest obstacle for 12.68%, 10.66%, and 10.32% of tourism firms, respectively.

Employment Growth and Political Climate

For a proper analysis, we need to compare empGRW by Tourism and Political Climate. Figure 2 below shows the mean employment growths for both tourism and non-tourism firms, depending on the Political Climate:

Figure 2

Non-Tourism Firm empGRW				Tourism Firm empGRW			
Political Climate	n	mean	sd	Political Climate	n	mean	sd
Favorable PC	58921	4.777	15.971	Favorable PC	770	5.032	14.774
Unfavorable PC	81951	4.361	17.030	Unfavorable PC	893	2.206	17.596
Total	140872	4.535	16.597	Difference	1663	3.515	16.406

When cross-tabulating the mean employment growths of tourism and non-tourism firms by the Political Climate they face, it appears that an unfavorable Political Climate constrains tourism firms' growth. For non-tourism firms, the mean employment growth appears to remain unchanged no matter the Political Climate. Although our hypothesis is measuring employment growth in politically volatile conditions, the Favorable PC row is still of interest; it appears to show that when facing a favorable Political Climate, tourism firms grow faster than non-tourism firms.

To test whether the difference in mean empGRW between tourism versus non-tourism firms in unfavorable Political Climates, and reject our null hypothesis, we run the following t-test in Figure 3:

Figure 3

Difference in mean Employment Growth with an Unfavorable Political Climate

Two-sample t-test with equal variances

Groups	n	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]
Non-Tourism firms	81951	4.360	0.059	17.030	4.244 - 4.477
Tourism firms	893	2.206	0.588	17.596	1.050 - 3.362
Difference		2.154			1.031 - 3.277

p-value: 0.0002

Based on the results from our t-test, when in an unfavorable political climate, the difference in mean employment growth for tourism firms is over 2 percentage lower than the mean employment growth for non-tourism firms. This result is statistically significant at the 1% level, so we reject the null hypothesis that tourism and non-tourism firms have undifferentiated employment growths when facing political instability. We therefore accept H_1 with a preliminary conclusion that tourism firms have slower employment growth than non-tourism firms, in the face of political volatility.

To further measure the significant relationship, a series of regression tests are needed.

IV. ANALYSIS

Methodology to Measure the Impact of Unfavorable Political Climate Conditions

To estimate of the Political Climate (PC) conditions on employment growth, our regressions will use the following empiric specification. This specification was modeled from the Aterido, Hallward-Driemeier and Pagés (2011) empiric specification which measured the effect of Investment Climate on employment growth, and provided statistically significant results. To incorporate Political Climate in the place of Investment Climate, and firms being tourism/non-tourism, we have amended the Aterido, Hallward-Driemeier, and Pagés (2011) model to use for our regressions:

$$\begin{aligned} \text{EmpGRW}_{ict,t-s} = & (\beta_0 \text{Tourism}_{ict,t-s}) + \beta_1 \text{Medium}_{ict,t-3} + \beta_2 \text{Large}_{ict,t-3} + \sum_k \beta_{3k} PC_{ikct} + \\ & (\beta_4 \text{Medium}_{ict,t-3} \times \text{Tourism}_{ict,t-s}) + (\beta_5 \text{Large}_{ict,t-3} \times \text{Tourism}_{ict,t-s}) + (\sum_k \beta_{6k} \text{Medium}_{ict,t-3} \times \\ & PC_{ikct}) + (\sum_k \beta_{7k} \text{Large}_{ict,t-3} \times PC_{ikct}) + \beta_8 \text{Exporter}_{ict} + \beta_9 \text{Foreign}_{ict} + (\lambda_j \times \lambda_s) + \varepsilon_{ict} \end{aligned}$$

Here, EmpGRW is our dependent variable; the growth of permanent employment of firm i in country c during the time period t between $t-s$. The Political Climate faced by firm i in country c is noted along four conditions (k): political instability, corruption, crime/disorder, courts, and bribery. The Matta (2016) study only focused on political instability, but the concern with using solely this variable is the risk of omitted variable bias. According to Ake's (1975) work on defining political instability, and the economic ramifications detailed by Aisen and Jose Veiga (2011), we come to understand that the effects of political instability can be insidious. Therefore, we can't expect a firm manager responding to the WBES questionnaire to be able to always discern every politically-induced risk to their firm. If the manager doesn't feel that political instability is an obstacle, yet the firm is paying bribes to succeed, that firm is still facing an unfavorable Political Climate no matter what the response to j30e was. So, we want to use other indicators that embody the conditions of Political Climate — political instability, corruption, crime/disorder, and bribery — that Rice and Zegart (2018) have proposed, to accurately identify when a firm is facing an unfavorable Political Climate, and minimize the risk of omitted variables tainting our results.

Our specification controls for firm size between small (omitted initial characteristic), medium, and large firms. Small firms are characterized by having 5-19 employees; medium firms are those with 20-99 employees, and large firms are those with over 100 employees. In addition to the firm size control, our specification also controls for firm age between the omitted variable characteristic of young (firms between 1 to 5 years old), midage (firms between 5 to 15 years old), and old (firms over 15 years old). The last two controls of Export and Foreign, account for differences between (non)exporting firms and domestic/foreign-owned firms, respectively. The reason for including these controls, is so that we can establish the closest semblance of *ceteris paribus* when measuring employment growth across different firm characteristics. For example, if x-sized firm has a very high employment growth, and y-sized firm has a slower growth, these both need to be taken into account to measure the effects of independent variables on employment growth rate. Rather than comparing growth across all firm sizes, we can generate more insightful results when comparing growth between x-sized firms and all other sized firms, and separately comparing growth between y-sized firms and all other sized firms.

As a preliminary analysis, we conduct two regressions on employment growth and tourism firms, controlling for firm size, firm age, exporters, and foreign-owned firms. The first (1) regression measures employment growth for tourism firms in a favorable Political Climate, and the second (2) regression measures employment growth for tourism firms in an unfavorable Political Climate:

VARIABLES	(1) Favorable PC empGRW	(2) Unfavorable PC empGRW
tourism	0.716 (0.514)	-1.802*** (0.640)
imedium	-4.051*** (0.148)	-5.243*** (0.134)
ilarge	-5.367*** (0.180)	-6.665*** (0.170)
midage	-4.444*** (0.319)	-4.247*** (0.276)
old	-7.378*** (0.298)	-7.667*** (0.254)
export	1.591*** (0.179)	2.520*** (0.159)
foreign	0.874*** (0.230)	1.290*** (0.205)
Observations	57,911	80,065
Adjusted R-squared	0.046	0.056
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		

In Table 1, we see that when in an unfavorable Political Climate, tourism firms have significantly lower employment growths than non-tourism firms in an unfavorable Political Climate. However, when in a favorable Political Climate, the employment growth of tourism firms is likely to be similar to the employment growth of non-tourism firms. It should also be noted that regardless of the Political Climate, larger and older firms have slower employment growth, although this was expected. Also, regardless of Political Climate, Exporters and foreign-owned firms have greater employment growths.

Specifically, when tourism and non-tourism firms are both facing an unfavorable Political Climate, the employment growth of tourism firms is 1.8 percentage points lower than non-tourism firms. This is statistically significant at the 1% level. When tourism and non-tourism firms are both facing a favorable Political Climate, the employment growth of tourism firms is 0.72 percentage points lower than non-tourism firms; however, this difference is statistically insignificant. Without fixed effects, at a statistical significance level of 1%, we reject the null hypothesis. We can definitively conclude that an unfavorable Political Climate adversely affects the employment growth rate of tourism firms more than non-tourism firms, of large firms more than small firms, and of older firms more than young firms.

The following five regressions in Table 2 measures the effects of each Political Climate condition independently, controlling for firm size, firm age, (non)export firms, and domestic/foreign-owned firms:

TABLE 2					
Employment Growth with Political Climate Conditions					
VARIABLES	(1) Political Instability empGRW	(2) Bribe empGRW	(3) Corruption empGRW	(4) Crime/Disorder empGRW	(5) Courts empGRW
tourism	-3.093*** (0.818)	-0.558 (1.037)	-2.214*** (0.749)	-4.499*** (1.302)	-2.320 (1.556)
imedium	-5.429*** (0.185)	-5.816*** (0.238)	-5.250*** (0.176)	-5.419*** (0.244)	-5.340*** (0.281)
ilarge	-6.393*** (0.238)	-7.816*** (0.317)	-6.637*** (0.231)	-6.737*** (0.328)	-6.715*** (0.353)
midage	-4.701*** (0.326)	-4.411*** (0.373)	-4.112*** (0.307)	-4.419*** (0.410)	-4.043*** (0.523)
old	-8.331*** (0.292)	-7.734*** (0.341)	-7.465*** (0.277)	-8.073*** (0.370)	-7.040*** (0.471)
export	2.872*** (0.218)	2.999*** (0.293)	2.673*** (0.215)	2.533*** (0.307)	2.461*** (0.318)
foreign	0.866*** (0.281)	1.173*** (0.338)	1.237*** (0.266)	1.276*** (0.353)	1.785*** (0.400)
Observations	43,358	27,502	46,166	24,906	18,502
Adjusted R-squared	0.057	0.064	0.054	0.059	0.050

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

While not important for our final regression, Table 2 still provides insight on how every condition that constitutes Political Climate individually affects a firm characteristic of interest. When firms see political instability as a major or severe obstacle, the employment growth of tourism firms is 3 percentage points less than the employment growth of non-tourism firms. This is statistically significant at the 1% level, meaning we can conclude that the mean employment growth is indeed different between tourism and non-tourism firms when political instability is a major or severe obstacle.

When firms have paid a bribe, the employment growth of bribe-paying tourism firms is half a percentage points less than non-tourism firms; however, this result is statistically insignificant, so we accept that bribe-paying tourism firms and bribe-paying non-tourism firms have indistinguishable employment growths.

When firms see corruption as a major or severe obstacle, the employment growth of tourism firms is 2.21 percentage points less than the employment growth of non-tourism firms. This is statistically significant at the 1% level, meaning we can conclude that the mean employment growth is indeed different between tourism and non-tourism firms when corruption is a major or severe obstacle.

When firms see crime, theft, and disorder as a major or severe obstacle, the employment growth of tourism firms is 4.5 percentage points less than the employment growth of non-tourism firms. This is statistically significant at the 1% level, meaning we can conclude that the mean employment growth is indeed different between tourism and non-tourism firms when crime, theft, and disorder is a major or severe obstacle.

When firms see courts as a major or severe obstacle, the employment growth of tourism firms is 2.32 percentage points less than the employment growth of non-tourism firms; however, this result is statistically insignificant, so we accept that corruption does not have a significant affect on the employment growth between tourism firms and non-tourism firms.

Without fixed effects, at a statistical significance level of 1%, we can definitively conclude that the major or severe obstacle of political instability, the major or severe obstacle of corruption, the major or severe obstacle of crime, theft, and disorder, and the major or severe obstacle of courts, all significantly and adversely affect the employment growth of firms of all types. We can also conclude that bribes and corruption don't affect tourism firms more than non-tourism firms, as these are likely to be challenging conditions for all types of firms.

The following two regressions in Table 3 show the employment growths for tourism firms only, and the employment growth for all firms facing an unfavorable Political Climate:

TABLE 3
empGRW for Tourism Firms only // empGRW for all Firms in Unfavorable PC

	(1)	(2)
VARIABLES	Tourism=1 empGRW	PC=1 empGRW
political_climate	-3.120*** (0.819)	
imedium	-5.181*** (0.910)	-5.243*** (0.134)
ilarge	-5.925*** (1.352)	-6.665*** (0.170)
midage	-0.157 (1.787)	-4.247*** (0.276)
old	-3.571** (1.604)	-7.667*** (0.254)
export	4.915*** (1.900)	2.520*** (0.159)
foreign	-0.132 (1.500)	1.290*** (0.205)
tourism		-1.802*** (0.640)
Observations	1,527	80,065
Adjusted R-squared	0.052	0.056

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Unsurprisingly, we see that tourism firms have a significantly lower employment growth rate when facing an unfavorable Political Climate than when facing a favorable Political Climate. We also see that when both facing an unfavorable Political Climate, tourism firms have worse employment growth than non-tourism firms.

When tourism firms face an unfavorable Political Climate, their employment growth is 3.12 percentage points lower than the employment growth of tourism firms in a favorable Political Climate. This is statistically significant at the 1% level, meaning we can conclude that the mean employment growth is indeed different between tourism in unfavorable and favorable Political Climates.

When firms face an unfavorable Political Climate, the employment growth rate of tourism firms is 1.8 percentage points lower than the employment growth of non-tourism firms. This is statistically significant at the 1% level, meaning we can conclude that the mean employment growth is indeed different between tourism and non-tourism firms in an unfavorable Political Climate.

Our control variables also provide us with insights on tourism firms. All significant at the one percent level, we see that employment growth rate is smaller as the size of the firm increases by one category; we also see that employment growth rate is much higher when a tourism firm is an exporter. We also gain insights on how an unfavorable Political Climate affects all firms. Statistically significant at the 1% level, we see that employment growth rate is smaller as the size of the firm increases by one category; that employment growth rate is smaller as the age of the firm increases by one category; and that employment growth rate is much higher when a tourism firm is an exporter and is foreign-owned.

Without fixed effects, at a statistical significance level of 1%, we reject the null hypothesis. We can definitively conclude that an unfavorable Political Climate adversely affects the employment growth rate of all firms, but has more of an adverse affect on tourism firms, larger firms, and older, firms.

Fixed Effects Regression

In an effort to mitigate Omitted Variable Bias, the final regression will need to include fixed effects (Hou and Ma, 2012). This consists of a set of dummy variables for industry (*i.isic2*), year of survey (*i.fyear*), and city (*i.citycode*). The aim of the fixed effects is to bring the model as close to *ceteris paribus* as possible, by putting each firm observation on the comparable grounds with other firms in the same industry type, fiscal year, and location. Still controlling for firm size, firm age, exporter status, and foreign-ownership, we run the following regressions to examine how Political Climate as a whole affects the employment growth of tourism versus non-tourism firms.

TABLE 4
Fixed Effects: Industry, Fiscal Year, and City

VARIABLES	(1) no FE empGRW	(2) Industry FE empGRW	(3) Industry/Year FE empGRW	(4) Industry/Year/City FE empGRW
tourism	-0.571 (0.416)	1.158** (0.462)	1.215*** (0.463)	0.006 (0.472)
political_climate	-0.483*** (0.087)	-0.497*** (0.087)	-0.663*** (0.089)	-0.495*** (0.097)
imedium	-4.749*** (0.100)	-4.785*** (0.101)	-4.781*** (0.101)	-4.737*** (0.102)
ilarge	-6.114*** (0.124)	-6.184*** (0.127)	-6.148*** (0.128)	-6.122*** (0.131)
midage	-4.333*** (0.209)	-4.351*** (0.209)	-4.351*** (0.209)	-4.382*** (0.206)
old	-7.551*** (0.193)	-7.513*** (0.194)	-7.362*** (0.193)	-6.913*** (0.193)
export	2.127*** (0.119)	2.204*** (0.122)	2.247*** (0.122)	2.369*** (0.125)
foreign	1.117*** (0.153)	1.029*** (0.154)	1.039*** (0.155)	1.131*** (0.158) (6.569)
Observations	137,976	137,976	137,976	137,976
Adjusted R-squared	0.052	0.055	0.059	0.090
Indsutry FE	No	Yes	Yes	Yes
Year FE	No	No	Yes	Yes
City FE	No	No	No	Yes
Robust standard errors in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

Column (1) is the regression model without any fixed effects, and Column (4) presents the regression model with all three fixed effects. However, we see that our result of interest on row 1 is not statistically significant in Column 4 due to over-specification. This is likely due to i.citycode being a stringent geographic disaggregation, where each city contains smaller samples of tourism firms than the already small sample of global tourism firms. We can't draw meaningful insights from such small-scaled comparisons. Therefore, for our analysis we will use Column 3, which still uses fixed effects for industry and fiscal year.

From the outset, we see that there is a significant difference between the growth rates of tourism versus non tourism firms. Controlling for all other variables, tourism firms in general have a growth rate that is 1.215 percentage points higher than non-tourism firms, which is statistically significant at the 1% level. This is an important finding, because it tells us that tourism firms tend to grow faster than non-tourism firms, with everything else being equal. When we conduct our next regression to include the interaction terms between (Tourism) X (Political Climate), it is crucial to know that under *ceteris paribus* tourism firms grow faster; it means that we can be confident in our conclusion that an unfavorable climate adversely impacts tourism firms more than non-tourism firms, given the dramatic shift to the negative for tourism employment growth rates compared to non-tourism firms in an unfavorable Political Climate.

Interaction Terms

With the (Tourism) X (Political Climate) interaction term now being the most important coefficient for us to assess, our empiric specification has been updated for the regression:

$$\text{EmpGRW}_{ict,t-s} = (\beta_0 \text{Tourism}_{ict,t-s}) + \beta_1 \text{Medium}_{ict,t-3} + \beta_2 \text{Large}_{ict,t-3} + \sum_k \beta_{3k} \text{PC}_{ikct} + (\sum_k \beta_{4k} \text{Tourism}_{ict,t-s} \times \text{PC}_{ikct}) + (\sum_k \beta_{5k} \text{Medium}_{ict,t-3} \times \text{PC}_{ikct}) + (\sum_k \beta_{6k} \text{Large}_{ict,t-3} \times \text{PC}_{ikct}) + \beta_7 \text{Exporter}_{ict} + \beta_8 \text{Foreign}_{ict} + \beta_9 \text{Industry}_{ic} + \beta_{10} \text{Year}_{ic} + \beta_{11} \text{City}_{ic} + (\lambda_j \times \lambda_s) + \varepsilon_{ict}$$

When we run this interaction term regression in Table 5, we also control for firm size, firm age, exporter status, and foreign-ownership:

TABLE 5
(Tourism)X(Political Climate), with FE

VARIABLES	(1) no FE empGRW	(2) Industry FE empGRW	(3) Industry/Year FE empGRW	(4) Industry/Year/City FE empGRW
tourism_politicalclimate	-2.667*** (0.820)	-2.683*** (0.820)	-2.018** (0.815)	-0.355 (0.806)
tourism	0.814 (0.513)	2.549*** (0.549)	2.262*** (0.549)	0.190 (0.556)
political_climate	-0.452*** (0.087)	-0.466*** (0.088)	-0.640*** (0.090)	-0.491*** (0.097)
imedium	-4.750*** (0.100)	-4.787*** (0.101)	-4.782*** (0.101)	-4.737*** (0.102)
ilarge	-6.114*** (0.124)	-6.184*** (0.127)	-6.148*** (0.128)	-6.122*** (0.131)
midage	-4.334*** (0.209)	-4.353*** (0.209)	-4.352*** (0.209)	-4.382*** (0.206)
old	-7.553*** (0.193)	-7.514*** (0.194)	-7.363*** (0.193)	-6.913*** (0.193)
export	2.129*** (0.119)	2.206*** (0.122)	2.247*** (0.122)	2.369*** (0.125)
foreign	1.117*** (0.153)	1.029*** (0.154)	1.039*** (0.155)	1.131*** (0.158)
Observations	137,976	137,976	137,976	137,976
Adjusted R-squared	0.052	0.055	0.059	0.090
Indsutry FE	No	Yes	Yes	Yes
Year FE	No	No	Yes	Yes
City FE	No	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Just like Table 4, due to the over-specification issue with the city fixed effect, we will use the coefficient from Column 3, Row 1. This is where we can compare the effect that Political Climate has on tourism firms versus non-tourism firms, controlling for size, age, exporting, and foreign-ownership, with fixed effects of industry and fiscal year.

Here, the results are compiling to make a definitive conclusion. The coefficient of Column 3, Row 1, indicates the difference in employment growth between tourism and non-tourism firms who are marred by political volatility. Statistically significant at the 1% level, we find that tourism firms facing an unfavorable Political Climate have an employment growth rate that is over 2 percentage points lower than for non-tourism firms. We can confidently conclude that the Political Climate has a more adverse affect on tourism firm growth than non-tourism firm growth.

However, in Tables 4 and 5 we run into an issue of collinearity. Although the Stata program did not indicate omissions due to collinearity, we still want to be conservative and mitigate that risk. Since the tourism variable is derived from the industry list, there is collinearity present when including the *i.isic2* fixed effect. Therefore, we need to remove the *i.isic* fixed-effect from our regression, and replace it with another fixed effect of interest. We will also remove *i.citycode*, because the samples of tourism firms within each city is too small to make any significant conclusions. As seen in the amended empirical specification below, we have added fixed effects for firm size, firm age, and fiscal year:

$$\text{EmpGRW}_{ict,t-s} = (\beta_0 \text{Tourism}_{ict,t-s}) + \sum_k \beta_{1k} PC_{ikct} + (\sum_k \beta_{2k} \text{Tourism}_{ict,t-s} \times PC_{ikct}) + \beta_3 \text{Exporter}_{ict} + \beta_4 \text{Foreign}_{ict} + \beta_5 \text{Size}_{ic} + \beta_6 \text{Age}_{ic} + \beta_7 \text{Year}_{ic} + (\lambda_j \times \lambda_s) + \varepsilon_{ict}$$

Our resulting regression with the alternative fixed effects can be found in Table 6.

TABLE 6
(Tourism) X (Political Climate), with FE

	(1)	(2)	(3)	(4)
VARIABLES	no FE empGRW	Size FE empGRW	Size/Age FE empGRW	Size/Age/Year FE empGRW
tourism_politicalclimate	-2.409*** (0.798)	-2.669*** (0.819)	-2.658*** (0.820)	-1.995** (0.816)
tourism	0.255 (0.536)	1.053** (0.517)	0.702 (0.514)	0.822 (0.513)
political_climate	-0.417*** (0.089)	-0.464*** (0.088)	-0.417*** (0.087)	-0.637*** (0.090)
export		1.813*** (0.120)	2.231*** (0.119)	2.232*** (0.120)
foreign		1.561*** (0.154)	1.035*** (0.153)	1.030*** (0.154)
Observations	142,535	139,186	137,976	137,976
Adjusted R-squared	0.000	0.032	0.056	0.061
Size FE	No	Yes	Yes	Yes
Age FE	No	No	Yes	Yes
Year FE	No	No	No	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Even with alternative fixed effects, our conclusion remains the same: Political Climate does have a more adverse affect on tourism firm growth than non-tourism firms growth. But now we can see that the results are significant in all four fixed effect regressions. The coefficient of Column 4, Row 1, indicates the difference in employment growth between tourism and non-tourism firms who are marred by political volatility. Statistically significant at the 1% level, we find that tourism firms facing an unfavorable Political Climate have an employment growth rate that is 1.995 percentage points lower than for non-tourism firms.

Policy Conclusion

The final regression worth running can help provide insights on developing policies that could help alleviate the adverse affect that political volatility has on tourism firms. For the following regression, the only firm observations included are tourism firms who are also facing an unfavorable Political Climate.

In Table 2, we noticed that crime was a significant driver of constraining employment growth. So what would happen if tourism firms hired contracted security for their operations? Would their employment growth improved, given that vital assets are under protection? Table 7 shows the effect that paying for security has when tourism firms are facing an unfavorable Political Climate:

VARIABLES	(1) no FE empGRW	(2) Size FE empGRW	(3) Size/Age FE empGRW	(4) Size/Age/Year FE empGRW
paid_security	2.332* (1.389)	3.383** (1.372)	2.650* (1.497)	2.555* (1.548)
crime_and_disorder_obst	-3.299** (1.563)	-3.281** (1.529)	-2.454 (1.681)	-2.383 (1.819)
bribe	1.688 (1.428)	2.018 (1.414)	2.055 (1.470)	1.566 (1.551)
taxadmin_obst	-0.226 (1.519)	-0.520 (1.490)	-0.573 (1.655)	-0.374 (1.658)
Observations	785	785	778	778
Adjusted R-squared	0.008	0.038	0.018	0.026
Size FE	No	Yes	Yes	Yes
Age FE	No	No	Yes	Yes
Year FE	No	No	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In an unfavorable Political Climate (Column 4, Row 1), it is evident that tourism firms who pay for security experience employment growth that is 2.55 percentage points higher than the employment growth of tourism firms that don't pay for security, statistically significant at the 10% level. If countries like Madagascar want to develop their tourism industries despite the presence of political volatility, a reasonable set of policies ought to incentivize the hiring of security contracts for tourism firms. If the government were to subsidize security purchases for tourism firms unable to afford security, and also create national training and hiring schemes for security jobs, the benefits would be two-fold: the growth of tourism firms will be less constrained, and the hiring of security personnel will help reduce unemployment among youth who have left their mandatory military conscriptions.

V. CONCLUSION

To conclude, we revisit our hypothesis and assess if we have sufficient evidence to reject the null hypothesis. We ran multiple regression tests controlling for firm size, firm age, exporter status and foreign-ownership, and also mitigated OVB by adding the fixed effects of industry, fiscal year, location, size, and age. Our regressions also corrected for heteroskedasticity with the regression option of Robust Standard Errors. We have taken every measure to ensure *ceteris paribus*.

Therefore, with statistically significant results indicating slower employment growth rates for tourism firms than non-tourism firms, we can make the final conclusion that an unfavorable Political Climate has a more adverse affect on tourism firms.

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