# Does Immigration Policy Externalization Work? Examination of US Externalization Efforts in Central


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# 1 Abstract

Governments allocate significant resources to control and deter illegal migration. While many such efforts occur at domestic policy levels, several initiatives involve migration policy externalization—or states pursuing policies designed to incentivize upstream neighbors to control and limit migration flows. In this paper we evaluate the efficacy of such externalization efforts by analyzing migration flows at two key corridors in the Western Hemisphere: through the Panamanian Dari´en Gap and across the US southern border. Specifically, we investigate how changes in visa policies shape the flow of migrants through these routes. Our empirical analysis leverages a series of panel regression count models and time-series ARIMA models. The results show that rather than stopping migration, these policies simply alter the routes that migrants take as they navigate toward their intended destinations. We complement these empirical findings with a qualitative analysis of US efforts to externalize migration policy aimed at curtailing migration from Cuba and Venezuela. We conclude with a discussion on how these efforts contribute to the emergence of migration routes in Central America and the Caribbean.

# 1 Introduction

When Donald Trump descended the escalator in Trump tower in June of 2015 to announce his candidacy for the presidency, he famously declared his intention to "build a great, great wall on our southern border." His goal was to deter and prevent entry from those with "lots of problems [who are] bringing those problems to us." Trump was successful in politicizing immigration and making border security a core element of not only his presidential campaign but also his presidency.

Despite a change in presidents and presidential parties, the salience of immigration across the southern border has remained high. In fact, the Biden administration is going one step further and moving border protection far down to the southern tip of Central America. As recently as September 2023, the administration announced that it would provide $10 million in foreign aid to Panama to conduct deportations, supporting the implementation of a recent announcement from the Panamanian government that it would be cracking down on migration and ramping up deportations (Kight, 2023).

In addition to providing funding, the United States also reported that it would help Panama develop its own deportation program, which the United States claims is at the behest of the Panamanian government. Six months prior, the Biden administration had led the development of a trilateral agreement with Panama and Colombia (US Mission Panama, 2023), aimed at "(ending) the illicit movement of people and goods through the Dari´en," a sparsely inhabited region in southern Panama. This effort indicates US policy interest in the externalization of border enforcement measures from the US-Mexico border to the border of the Southern and Northern American continents in a bid to deter migration.

The enforcement effort with Panama is not an isolated example. In April of 2023, the Biden Administration requested that Ottawa consider reimposing visa restrictions for Mexican nationals visiting Canada to mitigate the sharp increase in illegal crossings from Canada into the United States (Ling, 2023).[1]

Efforts to secure a nation's border are not surprising given the complex motivations behind migration. Individuals migrate for a wide variety of reasons: to seek out new opportunities, to escape conflict, to reunite with friends and family, and to avoid natural disasters. These movements inevitably affect domestic economies and local politics, sparking intense debates. Politicians—especially those attempting to ride a populist wave—have been able to harness ethnic resentment or economic fear to catalyze their constituencies (Dancygier, 2010; Ru¨egger, 2019). In leveraging these grievances, policymakers have used immigration—or the threat of unwanted immigration—to drive various policies (Tobin, Schneider and Leblang, 2022). These include expanding foreign economic assistance (Bermeo and Leblang, 2015), constructing border walls (Schon and Leblang, 2021), using military intervention (Greenhill, 2010), and changing citizenship policies (Helbling and Leblang, 2019).

Another set of policies designed to control immigration focus not on the destination country's entry and citizenship policies but rather on its neighbors. These policies—broadly bundled as "externalization policies," focus on outsourcing border enforcement to neighboring and/or transit

1 In 2016, the Trudeau government lifted its previously imposed visa restriction on Mexican nationals after several bilateral meetings in which officials reached consensus on the lift's economic and trade-related benefits. Despite pleas from the Biden administration to reinstate visa restrictions on Mexican nationals, Prime Minister Trudeau recently announced that Canada will not change the visa-free status for Mexican visitors. Whether countries individually enact border control policies, such as visa restrictions, or call upon the financial or political support of others, methods of externalization are often considered when attempting to manage or deter entry.

countries. While the United States only announced the Remain in Mexico policy in 2018, countries such as Australia along with the European Union (EU) had been outsourcing migration control for decades (FitzGerald, 2019). These policies may include security assistance measures or may be more directly focused on interdicting in-transit migrants (Frelick, Kysel and Podkul, 2016).

The Trump administration devised several different policies to decrease the number of arrivals at the US southern border. In addition to the Remain in Mexico policy, which required asylum seekers to wait in Mexico while their asylum applications were being processed, the United States pursued deals with Guatemala, El Salvador, Panama, and other countries in the Western Hemisphere to assist in developing a regionally coordinated response to migration flows (Miroff, 2019). The Biden administration has continued and expanded upon these efforts. It maintained the explicit visa ban across a dozen countries along with efforts at deterrence—zero-tolerance family separation and the Migrant Protection Protocol/Remain in Mexico—and third country agreements with Honduras, El Salvador, and Guatemala. Furthermore, the Biden administration replaced Title 42 with Title 8 restrictions, increased deportations as a deterrent, and intensified efforts to persuade Mexico and other countries in the Western Hemisphere to restrict migrant entry.

In this paper, we explore the effectiveness of recent US immigration policies, specifically their ability to decrease immigration. Our analysis does not address whether these policies build political coalitions or help politicians win elections. Instead, we focus on the United States and its efforts over the last five years—during and after COVID-19 restrictions—to restrict immigration via externalization policies. We evaluate these externalization efforts by examining how visa policy changes influence migration at the US southern border and through the Dari´en Gap in Panama.

We explore US externalization efforts both quantitatively and qualitatively. First, we fit a series of panel regression and time-series models to evaluate the effect of visa policy changes on migration. Our data for these models consist of the total number of irregular migrants encountered crossing the Dari`en Gap in Panama and across the US southern border. The results demonstrate that, rather than deter migrants, visa policy changes instead alter the route migrants take toward their final destinations. Our qualitative analysis explores US externalization efforts in greater detail to demonstrate how these policies emerged, the motivations underpinning these policies, and consequences on migration.

The rest of the paper proceeds as follows. In Section 2 we briefly review US efforts to decrease the demand for migrant entry at the southern border and introduce our approach to measuring externalization. Section 3 provides an overview of our data sources and empirical strategy, while Section 4 presents the empirical results. In Section 5 we provide evidence of a few general instances of externalization in practice and a more specific analysis of US externalization efforts to manage migration from Cuba and Venezuela. Section 6 concludes.

# 2 Background and Theory

Immigration has become one of the most salient political issues across Western Democracies. Politicians and political candidates weaponize the issue in an effort to mobilize their constituents, draw in new supporters, or highlight stark comparisons with their opponents. This strategy has proven effective: by 2017, anti-immigrant political parties in Western Europe averaged 11 percent of votes cast (Breznau, 2018). Similarly, in the United States, Donald Trump's candidacy for the presidency in 2016 put immigration squarely on the public's radar. Using immigration as a campaign

issue makes sense politically as it resonates differently depending on voters' occupation, nativity, and economic and cultural (in)security. Invoking language and images of migrants tends to be effective (Tobin, Schneider and Leblang, 2022; Verkuyten, 2021). Across industrial democracies, candidates and policymakers have successfully leveraged public concerns over immigration, whether the framing is in material/economic or identity/cultural terms (Scheve and Slaughter, 2001; Hainmueller and Hiscox, 2010; Sides and Citrin, 2007).

In an effort to decrease the likelihood that immigration shocks will have adverse political effects, policymakers across western democracies have used various policy tools (Bernhard, Leblang and Post, 2017). Internally, countries have increased residency requirements, added language tests, and raised educational requirements as barriers to legal migration (e.g., Helbling and Leblang 2019). Likewise, destination countries have developed and deployed a wide range of policies to combat undocumented migration. The construction and fortification of border walls and fences has become an increasingly popular strategy of politicians across the world, despite limited evidence showing that these physical barriers deter would-be immigrants (Avdan and Gelpi, 2017; Linebarger and Braithwaite, 2020; Schon and Leblang, 2021).

Even before Donald Trump announced his intention to build a "big, beautiful wall" to keep out undocumented migrants, the United States had been using myriad policies to deter those seeking to enter without documentation. The strategy of "Prevention through Deterrence" began in the 1990s with policies such as Operation Blockade, which attempted to shift migrant entry away from cities on the US southern border to areas with topography and weather that would put migrants' safety at risk. These policies were paired with increased deportations; the underlying premise was that making the journey more hazardous and increasing the risk of deportation would alter the cost-benefit calculation for those contemplating unauthorized migration, which in turn would discourage them from attempting entry (Hiemstra, 2019; Goodman and Schimmelfennig, 2020). So ingrained was the emphasis on deportation that President Bill Clinton implemented a policy known as Prevention through Deterrence and Deterrence through Deportation (Spotts, 2001), and President Barack Obama was referred to as the "Deporter-in-Chief." What was especially significant about Obama's policies is that he emphasized the deportation of those with criminal convictions.

A review of the evidence suggests that the effectiveness of deportations and border securitization is, at best, mixed. Since 1994, as resources allocated to border enforcement have continued to grow, US Customs and Border Protection (CBP) has claimed that increasing border enforcement reduce unauthorized migration. In particular, it asserts that border enforcement reduces unauthorized migration by deterring it (Simanski and Sapp, 2012). The effects of increasing border enforcement on levels of unauthorized migration have been characterized in various ways, with government officials, journalists, activists, and researchers arguing that the increases either amplify, reduce, or have no effect on unauthorized migration (Jones, 2016; Massey, Pren and Durand, 2016; Schon and Leblang, 2021; Rosenblum, 2012). Yet, a close examination of the research reveals no findings that dispute the assertion that increasing border enforcement leads to fewer crossings. The dispute is over the number of people who enter the United States, not the number of crossings.

Massey, Pren and Durand (2016) make this nuance especially clear. In contrast to the CBP assertion that increasing border enforcement reduce crossings and thereby reduce the number of people entering the United States, the authors find that increases in border enforcement did not reduce the number of people entering the country but instead disrupted circular migration by deterring return. Rather than pursuing seasonal migration into the United States, Mexican migrants shifted

to long-term permanent immigration. Indeed, increased enforcement leads migrants to undertake longer migration routes with the ultimate intention of permanently staying in their destination (Angelucci, 2012; Reyes, 2004). Therefore, while the number of crossings may have fallen, once people entered, they were more likely to stay, ultimately leading to an overall population increase. They did not enter, return, and then enter again.

## 2.1 Externalization

The process of externalizing immigration control can take numerous shapes and forms. For example, Australia has agreements with nearby islands, Manus and Nauru, to hold migrants attempting to enter their country (Boucher and Davidson, 2019). In addition, for decades the EU has used overseas development assistance in the hopes of improving economic conditions in migrant-sending countries (Bermeo and Leblang, 2015). More recently, the EU paid Libya and Turkey almost three-quarters of e1 billion between 2014 and 2020 to "encourage" these countries to stop migrants in transit to EU territorial borders. The EU has also more directly coordinated with Libya and Tunisia security forces to interdict migrants who are moving north (Pacciardi and Berndtsson, 2022).

US presidents of both political parties have used various externalization policies. Setting aside Obama's efforts to deter southern border entry through increasing and publicizing the deportation of unauthorized migrants who had committed felonies, the administration worked closely with Mexico to help increase inspections along its southern border. That plan, the Merida Initiative, was designed to stop the flow of illegal weapons and drugs and to crack down on individuals primarily from the Northern Triangle (El Salvador, Guatemala, and Honduras) from traveling through Mexico to the US southern border.

The Trump administration, following in the steps of the Clinton administration, attempted to use foreign trade—specifically renegotiating the NAFTA agreements—as a mechanism to force Mexico to decrease transit migration. Given the complications arising from economic and border policy changes due to COVID-19, it is too soon to tell if the new US-Mexico-Canada (USMCA) deal will have any measurable effect on Mexican or transit migration (Welch, 2018). Additionally, while the Trump administration was negotiating the new USMCA agreement, it was pulling back from providing any foreign economic assistance to the Northern Triangle, cutting off development assistance to those countries in 2019.

The most significant efforts at externalization by the Trump administration included the set of policies starting with the Remain in Mexico policy, which required asylum seekers to wait in Mexico until their asylum applications were processed. The US, as noted above, began pursuing similar deals with Guatemala, El Salvador, and other countries that were either countries of origin for those attempting to enter the United States or countries of transit.

These efforts continue through the present with the Biden administration asking/directing other countries in the region to change their visa policies. The United States has long implemented visa restrictions on most of the world, meaning that to enter the country through a legal port of entry (most notably including by air), most individuals would be required to go through an often expensive and cumbersome visa application process aimed at preventing visa overstays. Other countries also implement such policies, but one of the greatest innovations of deterrence policy in recent years has been the externalization of US visa restrictions by the Biden administration, where countries of transit en route to the United States also restrict visa access.

The Biden administration has urged leaders in neighboring countries to impose visa restrictions on countries whose citizens frequently arrive to the US-Mexico border, aiming to deter these individuals from making the trek. The most emblematic case is that of Venezuelans, who, just a decade ago, could fly visa-free to all but nine of the contiguous countries between their country and the United States (the exception being El Salvador). Visa restrictions were introduced by Nicaragua (2016), Panama (2017), and Guatemala (2018) in the following years, but none of the restrictions impacted the short visa-free flight path from Venezuela to Mexico en route to the United States.

However, in just a two-month period in early 2022, the remaining countries in Central America and Mexico introduced visa restrictions for Venezuelans, starting with Mexico in January 2022, followed by Belize (January 2022), Costa Rica (February 2022), and Honduras (February 2022). This regional shift was influenced by the Biden administration, per Reuters reporting, which revealed that US "efforts to lobby Mexico to tighten entry requirements from OPEC member Venezuela had increased since Venezuelan arrivals jumped" during the summer of 2021 (Ulmer, Graham and Spetalnick, 2021). Additionally, as noted by Human Rights Watch (2022):

> In a May 2022 US Senate hearing, a State Department official said that, when the US sees an increase in people of a certain nationality arriving at the southern border, it communicates that information to governments in the region to 'look for areas of partnership.' Countries may then decide 'through their own sovereign decision-making process . . . to impose visas on those nationalities to make sure that those who are arriving by air are not intending . . . [to immigrate] to the United States,' the official said. The Biden administration then continues 'working in partnership' with other countries 'to ensure that route is not diverted' through another country, she said.

Visa restrictions have been a clear way to introduce obstacles to the migration journey en route to the US-Mexico border, and they have been introduced for a host of nationalities, whether at the behest of the United States or not. In addition to the aforementioned examples, countries such as Haiti, Nicaragua, and Cuba have also faced visa restrictions erected in recent years to deter flights and easy migration routes (see Amaral, 2023). And this has had a notable impact on migration routes. Cubans must present visas to travel to all but two countries in the contiguous Americas (Nicaragua and Guyana) and have thus used the former as a frequent entry point to Central America before embarking on foot to the US-Mexico border. Given the frosty relationship between the United States and Nicaragua, the Biden administration has little chance of successfully convincing Nicaragua to adopt visa restrictions for Cubans, effectively halting the externalized border there. But for many other nationalities across the globe, the US border reaches as far south as Panama.

# 3 Data and Methods

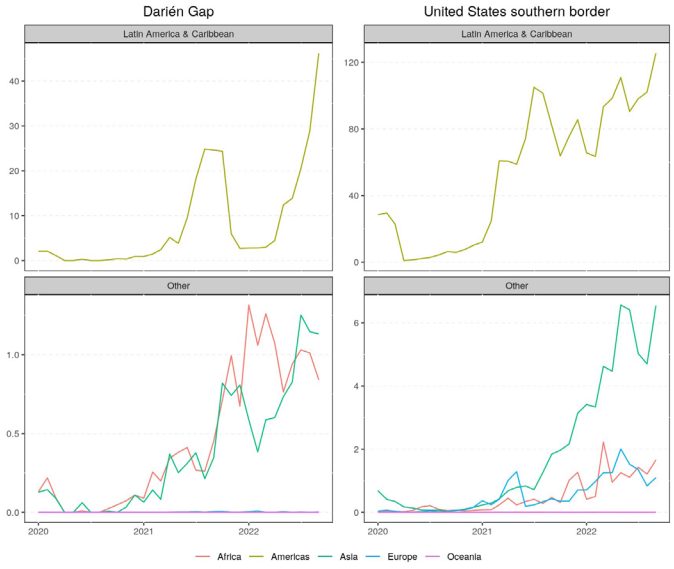
To demonstrate these externalization processes at work, we fit a series of panel and aggregate time-series empirical models of monthly encounters in both the Dari´en Gap and at the US southern border. Our sample consists of monthly crossing counts through the Dari´en Gap and across the US southern border for 93 countries at a monthly interval from January 2020 to September 2022.

## 3.1 Data

**Irregular migration.** We use two sources of irregular migration data to explore similarities and differences in the drivers of migration through the Dari´en Gap and across the US southern border and to investigate how Dari´en Gap crossings may help to predict future US southern border crossings. Dari´en Gap crossing reports come from UNICEF's Office of Monitoring and Evaluation and report the total count of monthly encounters[2] disaggregated by migrant country of origin[3] as well as demographic characteristics including age and gender. Within our sample, migrants originate from 93 countries in the Americas, Europe, Asia, and Africa. To this sample of Dari´en crossing data, we add US encounter and apprehension reports to facilitate consistent comparisons of migration drivers across the same set of cases between the two regions.

US southern border sector crossing data come from the Department of Homeland Security's CBP office and report total monthly encounters, disaggregated by migrant country of origin reported by CBP agents across the US southern border sector over a month.[4] We also leverage data on US migrant encounters in the Miami, Tampa, and New Orleans border sectors to account for substitution effects of migration routes for migrants originating in the Caribbean. Figure 1 presents our migration data for both the Dari´en and US southern border over the full range of our study period broken down by the total reported migrants by region.

Figure 1. Irregular Migration Crossings




2 During our study period, Panamanian border authorities did not detain and deport migrants encountered crossing through the Dari´en. Therefore, as migrants had little incentive to evade border authorities, our Dar`ıen measure provides a reliable indicator of the total volume of migrants passing through the Dari´en Gap.

3 Both our US and Dari´en encounter data report migrant country of origin, which is the migrant's birth country. Indeed, many migrants travel to their intended destinations over time and sometimes make their trip in stages. Ideally, the data would also report the country in which a migrant most recently resided, but to our knowledge, such data does not exist. However, migrant country of origin does provide a valid measure of demand for entry for migrants from similar geographic regions and backgrounds.

4 Unlike our Dari´en measure, US encounters include both successful migrant apprehensions by US border personnel as well as encounters and unsuccessful apprehensions. Unlike Panamanian authorities during this period, US personnel would attempt apprehensions on contact, thereby incentivizing migrants to evade US personnel if possible, likely leading to undercounts of total crossings in a month. However, as we have no theoretical expectation that our primary variable of interest—visa policy changes—effects the efficacy of US border personnel to encounter and detain migrants at the US southern border, any such undercounts should not induce bias on the estimated effect of visa policy changes on monthly migration flows.

**Visa restrictions.** Data on visa restrictions come from the Passport Index Dataset, which records monthly changes in dyadic entry requirements for residents of all countries to all other potential destination countries (Passport Index, 2023; Ilyankou, 2023). The data provide monthly snapshots of passport travel power beginning in 2019 through to the end of our analysis in September 2022. Additionally, they record requirements for entry of foreign nationals into a destination country, including whether visa-free access is allowed, the number of visa-free days a foreign national may legally reside within a destination country, or whether residents from a foreign country are banned from entry.

To facilitate comparisons of the various visa requirements across all countries, we operationalize visa entry requirements into four ordinal levels corresponding to the ease of entry for a foreigner into a destination country: travel ban or COVID ban (0), travel with preauthorization (1), streamlined travel (e.g., visas on arrival) (2), and visa-free travel (3). Higher values of our operationalization therefore correspond to easier travel access, while lower values correspond to more restricted access. These values capture the ease of legal entry for foreigners of a particular origin into destination countries.

Since our outcome of interest concerns migration routes through the Dari´en or across the US southern border, we average these visa entry scores for each origin country-month in our panel across four relevant regions: North, South, and Central America, and the Caribbean. For each country in the panel, these regional averages reflect the ease of legal access a resident would have to countries in the region relative to others. This provides a means to investigate how immigration access restrictions deter or deflect foreigners to other regions and routes in pursuit of their final destinations.

**Control variables.** In addition to these regional passport travel values, we include several control variables to account for alternative explanations of variation in migrant flows through both the Dari´en and the US southern border, including alternative routes, armed conflict, natural disasters, extreme weather anomalies, population structure, and policy changes related to COVID lockdown restrictions. For all models, we include a lagged measure of US encounters of migrants in the Miami, Tampa, and New Orleans border sectors to account for migrants attempting entry into the United States through a Caribbean route. By including this measure, we intend to account for the possibility of migrants treating routes into the United States as substitutes.[5]

Since violence related to civil war, sectarian conflict, or cartel violence serves as a powerful driver for migration flows, we include a population-normalized measure of conflict fatalities in a migrant's origin country from the ACLED Armed Conflict Database (Raleigh et al., 2010).

Similar to armed conflict, natural disasters or climate change may also help to account for migration flows as shock events because disasters can incentivize relocation and climate change can undermine adaptive capacity within a region, leading to variation in migrant flows. The EM-DAT international disasters database provides estimates of the total fatalities attributable to man-made (e.g., industrial disasters), climate (e.g., flood or extreme storms), or other natural (e.g., earthquakes or landslides)

5 Overall encounters of migrants from the Caribbean represent a relatively rare event compared to US southern border or Dari´en crossings. Indeed, on average this sector reports approximately one encounter per origin country per month, in contrast to the US southern border (944) and Dari´en (247). See Table 1 for descriptive statistics. The US Coast Guard will often deflect migrants at sea rather than apprehend, resulting in lower counts than would otherwise be reported. Additionally, the Caribbean route introduces far greater risks due to the maritime crossing and, therefore the logic that motivates migrants to cross through the Caribbean likely significantly deviates from the process motivating land-based migration through the Dari´en and US southern border. Therefore, we do not attempt to model Caribbean encounters here and instead control for encounters in this sector to account for demand substitution among migrants for routes into the United States.

disasters (EM-DAT, 2023). We classify high-fatality disasters as a binary measure for any country that experienced an above-average number of disaster-related fatalities relative to all countries experiencing a disaster during a particular month. While this disaster measure may capture migration potential due to acute climate-related disaster events such as fatalities attributable to intense storms, more gradual climate variation can also influence migration. Therefore, we also include an extreme weather indicator to account for temperature and precipitation anomalies that cause extreme drought (wet) conditions in locations with typically wetter (drier) climates.

To construct this measure, we employ the Terraclimate Palmer Drought Severity Index (PDSI), which reports variation in drought or wet conditions relative to a region's typical climate (Abatzoglou et al., 2018). PDSI values exceeding 5 correspond to situations of extreme precipitation, while values less than –5 correspond to situations of extreme drought (0 reflects normal conditions). To account for migration potential attributable to extreme climate deviations due to drought or wet conditions, we classify countries as experiencing extreme weather if the absolute value of the PDSI for that country-month exceeds 5.[6]

We also include a measure of the population dependency structure in a migrant's country of origin as well as a binary indicator to account for changes in migration due to COVIDrelated travel lockdowns. Data from the US Census Bureau's International Database (2023) provide estimates of population dependency ratios that reflect the total nonlabor force population (children under 15 and elderly over 64) relative to those typically in the labor force (individuals aged 15–64). This value reflects economic opportunities for migrants remaining in their home countries but also serves as a coarse measure for variation in family structures, which could account for variation in migration patterns due to some countries having larger elderly populations that preclude younger individuals from pursuing migration. To account for changes in migration flows due to COVID-related policies such as lockdowns, we include a post-COVID binary indicator that codes as 1 any month after November 2020 and 0 for months January 2020 to October 2020. In November 2020, travel restrictions implemented at the beginning of the pandemic, including those coordinated among the United States, Canada, and Mexico, began to ease (US DHS, 2020).

Table 1. Descriptive Statistics

| | Mean | Std. Dev. |
|---|---|---|
| Dari´en Gap crossings | 247.46 | 1790.16 |
| US southern border crossings | 944.41 | 3338.71 |
| US Caribbean encounters | 0.99 | 4.42 |
| Post-COVID | 0.91 | 0.29 |
| Passport: Central America | 1.51 | 0.68 |
| Passport: Caribbean | 1.93 | 0.42 |
| Passport: North America | 0.82 | 0.33 |
| Passport: South America | 1.66 | 0.55 |
| Pop. depend. | 63.84 | 15.88 |
| Conflict | 0.51 | 1.04 |
| High-fatality disaster | 0.04 | 0.19 |
| Extreme weather | 0.13 | 0.33 |

6 Of course, the relationship between migration and climate change is complex. Here, we use this binary measure to account for potential of changes to migration flow in response to climate variability and leave for future work more detailed analysis of the functional relationship between climate variability and Dari´en/US southern border crossings.

## 3.2 Methods

Since both migration measures report monthly counts of migrants passing through the Dari´en Gap or across the US southern border disaggregated by migrant origin country we model the relationship between irregular migration and passport visa restrictions using a series of negative binomial panel regression count models.[7] All models include country and time (year-month) fixed effects to account for heterogeneity in migration totals as well as to guard against omitted confounding variables. We also include lagged measures of the dependent variable to account for persistence in migration over time across origin countries through each route.

To accurately assess estimated relationships, we employ panel-corrected robust standard errors (Beck and Katz, 1995), clustered at the migrant origin country level in all models. Additionally, we lag all independent variables by one month since we have no expectations of contemporaneous relationships whereby changes in conditions within origin countries result in instantaneous changes in reported migration encounters in the same country-month.[8]Additionally, lagging independent variables by one month further helps to guard against concerns of endogeneity between migrant flows and downstream responses to those flows, such as policymakers enacting visa policy changes.

The models also introduce interaction terms between our post-COVID binary indicator and passport travel variables. These interactions allow the models to account for conditionality in the effect of passport travel restrictions on reported encounters both during and after the easing of COVID-related travel lockdowns. Therefore, by including these interactions, we can evaluate whether changes in visa policy had a greater effect on irregular migration in the post-COVID period, whether they had less effect, or whether the estimated relationship remained unchanged.

We also account for conditionality in the relationship between population dependency and conflict on migration counts by including squared terms for these variables and thereby modeling these relationships as quadratic in nature across the models. For example, the effect of conflict on irregular migration encounter counts may matter more at lower levels of violence than higher levels since at higher levels, most civilians who intend to flee violence would have already done so, and those who remain lack the opportunity. Essentially, the effect of conflict (population dependency) on migration depends on the overall value of conflict (population dependency) in a migrant's origin country.

In addition to these panel regression models, we also fit a series of time-series ARIMA models using aggregated monthly US southern border encounter totals. These models complement the panel data models by illustrating how our Dari´en Gap indicators produce consistent estimates when used to predict US southern border crossings in both disaggregated panel data and aggregate time-series data.

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7 Our outcome measures are counts with small numbers of large values (long right-hand tails). This suggests that negative binomial models that do not assume that the conditional mean of the count equals the conditional variance represent the ideal modeling choice. The modeled dispersion parameter from our negative binomial models is significant across all models supporting this choice, and likelihood ratio tests compared to a Poisson model always support the negative binomial specifications.

8 Among the countries in our sample, the average distance from the Dari´en Gap is approximately 8,900 kilometers. Therefore, contemporaneous changes in conflict, disasters, or visa policy access would be unreasonable once accounting for travel times.

# 4 Results

We first turn to evaluating the negative binomial panel regression estimates reported in Table 2. Looking first at the Dari´en crossing results (models 1 and 2), the relationship between visa travel restrictions and irregular migration through the Dari´en align well with our expectations: as a country's ease of travel access into regions north of the Dari´en Gap increases—that is, as the passport measures increase—the number of migrants from that country crossing through the Dari´en significantly decrease. Conversely, as a country's ease of travel access into areas south of the Dari´en (South America) increases, we observe a significant increase in migrants from that country passing through the Dari´en. These results provide evidence of migrants navigating in response to visa policy changes where, rather than stopping their migration plans outright, they simply change routes based on the easiest initial entry points.

Looking at the US southern border crossing results reveals different patterns in migration behavior, which also align well with our expectations of migrant routing. For example, in contrast to the Dari´en Gap results that indicate that easier visa access to Central America corresponds to fewer Dari´en crossings, as a country's access to Central American countries increases, we observe an increased count of migrants from that country at the US southern border. Again, this is suggestive of routing behaviors on the part of migrants choosing starting locations for their migration travels based on flexible visa entry conditions.

Table 2. Panel Models

| | Darién | | US Southern Border | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Passport: Central America | −3.2509** | −5.4397*** | 1.1324* | 0.8554 | 2.1697* |
| | (1.1693) | (1.0663) | (0.4409) | (0.8290) | (0.8497) |
| Passport: Caribbean | −6.9860*** | −5.9263*** | −4.1344*** | −3.8327*** | −3.7198*** |
| | (1.8782) | (1.1499) | (1.1129) | (0.8106) | (0.8136) |
| Passport: North America | −4.6059*** | −1.6702** | −1.9419 | −0.0603 | 0.1193 |
| | (0.3112) | (0.6090) | (1.1457) | (0.6102) | (0.6556) |
| Passport: South America | 1.8356*** | 3.8990*** | 0.7075** | 0.8716 | 0.7752 |
| | (0.3703) | (0.8234) | (0.2467) | (0.6997) | (0.6598) |
| US Caribbean, FD | −0.0022 | −0.0019 | −0.0017 | −0.0018 | 0.0005 |
| | (0.0174) | (0.0078) | (0.0050) | (0.0051) | (0.0052) |
| Post-COVID | 1.0331*** | 3.2909*** | 1.7916*** | 4.6108*** | 4.5992*** |
| | (0.2567) | (0.8141) | (0.3728) | (0.9497) | (0.9760) |
| Pop. Depend. | −0.5739*** | −0.3396* | 0.6625** | 0.7907* | 0.7688* |
| | (0.1606) | (0.1533) | (0.2218) | (0.3103) | (0.3091) |
| Pop. Depend.2 | 0.0040*** | 0.0023 | −0.0068** | −0.0074** | −0.0071* |
| | (0.0008) | (0.0012) | (0.0025) | (0.0029) | (0.0029) |
| Conflict | −0.1250 | −0.1819 | 0.4347** | 0.4217** | 0.4684** |
| | (0.1449) | (0.0989) | (0.1324) | (0.1476) | (0.1488) |
| Conflict2 | 0.0285 | 0.0394* | −0.0882*** | −0.0852*** | −0.0917*** |
| | (0.0271) | (0.0199) | (0.0197) | (0.0210) | (0.0214) |
| High-fatality disaster | −0.4986*** | −0.4612*** | −0.2252 | −0.1974 | −0.1947 |
| | (0.0966) | (0.0840) | (0.2601) | (0.2676) | (0.2833) |
| Extreme weather | −0.5055*** | −0.4177*** | 0.0392 | 0.0528 | 0.0596 |
| | (0.0908) | (0.0892) | (0.0769) | (0.0790) | (0.0772) |
| Lag DV | 0.0001*** | 0.0001*** | 0.0001*** | 0.0001*** | 0.0001*** |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Intercept | 27.1424*** | 14.6250* | −17.6377** | −24.9547** | −26.1019** |
| | (6.9992) | (6.0767) | (6.4952) | (8.7420) | (8.5955) |
| Post-COVID x Passport: Central America | | 3.1073*** | | 0.4641 | 0.4754 |
| | | (0.8584) | | (0.7769) | (0.7760) |
| Post-COVID x Passport: Caribbean | | −0.4573*** | | −0.6226 | −0.6087 |
| | | (0.1376) | | (0.3958) | (0.4197) |
| Post-COVID x Passport: North America | | −3.0956*** | | −2.2405*** | −2.3331*** |
| | | (0.5158) | | (0.4884) | (0.5348) |
| Post-COVID x Passport: South America | | −1.5335 | | 0.0817 | 0.1630 |
| | | (0.9507) | | (0.6371) | (0.6147) |
| Dari´en, FD | | | | | 0.0001*** |
| | | | | | (0.0000) |
| Dari´en, FD (L1) | | | | | −0.0000 |
| | | | | | (0.0001) |
| Dari´en, FD (L3) | | | | | 0.0001** |
| | | | | | (0.0000) |
| Dari´en, level (L1) | | | | | 0.0001 |
| | | | | | (0.0000) |
| Dari´en, level (L3) | | | | | −0.0000 |
| | | | | | (0.0000) |
| $\theta$ | 1.6018*** | 1.6794*** | 2.0557*** | 2.0902*** | 2.1363*** |
| | (0.0717) | (0.0759) | (0.1021) | (0.1041) | (0.1071) |
| FE: Unit | Yes | Yes | Yes | Yes | Yes |
| FE: Time | Yes | Yes | Yes | Yes | Yes |
| Obs. | 1,113 | 1,113 | 1,113 | 1,113 | 1,113 |
| Log likelihood | −4402.0080 | −4377.2284 | −5028.9548 | −5021.9029 | −5013.2862 |
| AIC | 9074.0159 | 9032.4568 | 10327.9096 | 10321.8057 | 10314.5724 |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Panel-corrected robust standard errors are reported in parentheses.

Table 3 summarizes the estimated marginal effects and statistical significance of a one standard deviation change in the passport index measures on changes in migration counts both during and after COVID. Unsurprisingly, the effects of visa travel restrictions on irregular migration mattered more in the post-COVID period than they did in the initial COVID period for both Dari´en and US crossing models. The effect of the North American (NA) visa access variable in the US model perhaps best illustrates the change in visa restrictions as a more effective tool for migration control during and after COVID. During the COVID period, changes in a country's access to NA had no significant effect on irregular migration, likely owing to strict lockdown policies put in place at the southern US border. In contrast, once restrictions lifted, the effect of NA visa changes became significant and substantively important: a one standard deviation increase in the openness of the NA visa index corresponds to approximately –1,311 (95 percent CI: –1,815, –809) fewer estimated crossings at the southern US border per month.

Table 3. Marginal Effects: Passport Restrictions

| | Darién | | US Southern Border | |
|---|---|---|---|---|
| | COVID | Post-COVID | COVID | Post-COVID |
| CA | −196.69*** | −1016.08** | 54.85 | 1531.86* |
| | (50.25) | (373.07) | (51.69) | (691.53) |
| CR | −133.83*** | −1736.77*** | −153.48*** | −3230.38*** |
| | (25.59) | (411.10) | (36.75) | (737.72) |
| NA | −29.66** | −1019.67*** | −1.90 | −1311.91*** |
| | (10.80) | (242.50) | (18.98) | (256.51) |
| SA | 115.38*** | 843.41*** | 45.74 | 905.80*** |
| | (29.72) | (176.21) | (39.40) | (270.47) |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Panel-corrected robust standard errors are in parentheses.

This estimate illustrates the consequences of travel lockdowns on migration with strict border policies in place. It also reveals how the flow of irregular migration to an intended destination shifts based on visa policies. Specifically, visa restrictions have less impact on the flow of migration and more on the preferred migration route: as legal access to a destination increases, irregular migration decreases, and as legal access decreases, we observe increased irregular migrant flows. Therefore, our results suggest that visa policy externalization efforts do not reduce overall irregular migration but rather alter the route aspiring migrants take to their final destination.

Examining the effect of changes in access to Caribbean countries in Table 3 also suggests that encounters at both the Dari´en and US southern border significantly decrease in response to increased migrant access to Caribbean countries. For the Dari´en, a one standard deviation increase in a country's access to the Caribbean corresponds to –1,737 (95 percent CI: –2,543,

–931) fewer migrant encounters from that country in the Dari´en and –3,230 (95 percent CI: –4,676, –1,785) fewer encounters at the US southern border. Surprisingly, these shifts in Caribbean visa access generate the largest changes in both Dari´en and US encounters, with estimated effects equivalent to a full standard deviation shift in typical encounters for each location (Dari´en SD: 1,790; US SD: 3,338). This suggests a substantively important degree of responsiveness between reported crossings and changes to visa policy. One possible explanation, to which we return in Section 6, is that the Caribbean represents the third node in a migration triangle with the United

States and the Dari´en Gap, where, upon finding their access to the Americas restricted, migrants instead route through the Caribbean and into the United States through its Miami border sector.

Model 5 in Table 2 introduces various lags of our Dari´en crossing estimates as a leading predictor of US southern border crossing encounters.[9] Our models suggest that a lagged first-difference and three-month lagged first difference of crossings reported at the Dari´en Gap help to predict US southern border crossings. The first-difference measures achieve statistical significance at conventional levels, including with the presence of total crossing flows through the Dari´en measured in levels as well as US encounters of migrants originating in the Caribbean.[10] Lagged Dari´en crossing values in levels only achieve significance in the absence of the first-difference variables, suggesting that month-to-month changes in Dari´en encounters best predict US southern border encounters.

Table 4 reports the marginal effect of an additional crossing in the Dari´en on US southern border crossings suggested by these first-difference estimates. An additional crossing reported at the Dari´en predicts approximately 1.60 (95 percent CI: 0.278, 2.92) downstream crossings at the US southern border.

Table 4. Marginal Effects: Encounters

| | US Southern Border |
|---|---|
| Dari´en, FD | 1.60* |
| | (0.67) |
| Caribbean, FD | 0.04*** |
| | (0.01) |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Panel-corrected robust standard errors are reported in parentheses.

To complement our analysis of Dari´en crossings as a predictor of US southern border crossings, we fit a series of aggregate time-series models of total US southern border crossings over a longer time horizon going back to January 2019. These models are presented in Table 5. To account for unit roots in the aggregate US crossing values, we model US southern border crossings in first differences. Here we find identical estimates of the relationship between lagged monthly changes in reported Dari´en crossings and US southern border crossings ranging from 1.24 (95 percent CI: 0.248, 2.240) to 1.57 (95 percent CI: 0.556, 2.576) for models with and without Dari´en crossings in levels (which, similar to the panel models, are not statistically significant). That the aggregate US time-series estimates so closely match the panel estimate provides additional confidence in the results. Monthly US encounters of Caribbean-origin migrants lagged by one month or in first differences do not significantly explain the variation in monthly US southern border encounters in the aggregate model.

9 These results include Mexico in the analysis. However, our results remain robust when dropping this case. Estimates from a sample that excludes Mexico are reported in Appendix Table A5.

10 As the results in Table 2 indicate, Dari´en crossings in levels are not statistically significant. In Appendix Table A4 we provide alternative lag specifications with the Dari´en first-difference measures alone, with levels alone, and with first differences, levels, and 12-month lagged levels. We find that the main results in Table 2 hold: the 1- and 3-month lagged first-difference measures remain positive and significant.

Table 5. ARIMA Models: US Time Series

| | (1) | (2) | (3) |
|---|---|---|---|
| Dari´en, FD | 1.24* | | 1.57** |
| | (0.51) | | (0.52) |
| Dari´en, FD (L3) | 0.36 | | −0.10 |
| | (0.52) | | (0.61) |
| Dari´en, level (L1) | | 0.35 | |
| | | (0.61) | |
| Dari´en, level (L3) | | 0.39 | |
| | | (0.65) | |
| US Gulf, FD | 20.20 | −7.25 | 26.67 |
| | (50.92) | (55.46) | (51.33) |
| US Gulf, (L1) | 15.29 | 33.83 | 29.46 |
| | (72.35) | (77.98) | (73.43) |
| FE: Month | Yes | Yes | Yes |
| AIC | 983.27 | 988.02 | 983.19 |
| BIC | 1011.82 | 1016.57 | 1015.31 |
| Log likelihood | −475.64 | −478.01 | −473.60 |
| Obs. | 44 | 44 | 44 |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Two reasons may account for the estimated relationship between Dari´en crossings and subsequent US southern border crossings exceeding 1, which would be expected for a constant migrant flow from the Dari´en through to the US southern border. First, the Dari´en is an especially undeveloped natural area covering a vast geographic region. Although they represent the best data available, the reported counts in our Dari´en crossing data likely understate the total flow through the Dari´en on a monthly basis. Given the administrative and logistical capacity of CBP personnel to enumerate US southern border encounters, the Dari´en parameter in US encounter models exceeding 1 likely accounts for any such undercounts in the Dari´en data.

Second, our Dari´en data only capture migrants crossing northbound through the Panamanian Dari´en Gap and not other migrants starting their journey in Central America, where a significant number begin their journey to the US southern border due to either their already residing in these countries north of the Dari´en or their having traveled there first owing to factors such as favorable visa policies. To the extent that common factors such as favorable US economic conditions, violence in origin countries, or climate draw migrants toward the US southern border, encounters in the Dari´en will correlate with a general demand for US access across all migrants that we are subsequently predicting using Dari´en encounter reports.

The remaining control variables in the panel models presented in Table 2 largely follow our expectations. Conflict emerges as a significant predictor of crossings at the US southern border but not the Dari´en. This may result from heterogeneity in the spatial distribution of conflict, with cartel violence occurring primarily throughout Central America and accounting for increased flows at the US southern border but not at the Dari´en. The US models suggest that a one standard deviation increase in conflict violence in a country with no preceding conflict or low levels of conflict leads to approximately 582 (95 percent CI: 233, 933) additional crossings per month from that country.[11]

11 Appendix Table A1 summarizes these conflict effects across various levels of violence.

This effect persists up to the median level of conflict in our sample (approximately 0.7 combat fatalities per million), after which it becomes statistically insignificant. Countries with the highest values of conflict report significantly fewer monthly crossings. This pattern makes sense: conflict refugees flee as conflicts increase, after which those who could flee would have done so, resulting in lower migration flows from countries with the highest levels of violence.12

Regarding the binary indicators for the post-COVID period, high-fatality disasters, and extreme weather conditions, Appendix Table A3 summarizes the marginal effects.13 Overall, only US crossing estimates appear to be significantly higher in the post-COVID period. High-fatality disasters and extreme weather events only appear to impact Dari´en crossings, resulting in a lower total number of encounters per month of –221 (95 percent CI: –337, – 106) and –201 (95 percent CI: –319, –84), respectively. Humanitarian assistance provided to disaster-stricken counties might incentivize impacted residents to rebuild, thereby accounting for suppressed migrant counts after disaster events. Fewer crossings in response to extreme weather may be due to populations from these countries attempting to adapt or migrate to alternative destinations, not through the Dari´en route. We revisit these climate results in Section 6 and leave more detailed analysis of the relationship between migration routes and climate change to future work.

While these empirical results provide evidence that restricting visa access for residents of a particular country may reduce encounters in one location, the models we have presented suggest that these visa policy changes cause migrants to reroute to other regions with more favorable visa policies and easier access, from which they can start their migration journey to their intended destinations. Short of a coordinated effort to close off a specific migrantsending county's legal entry access across multiple regions, the evidence from our analysis indicates that when faced with visa restrictions in one region, aspiring migrants will instead find alternative migration routes through neighboring regions, many of which increase risks to their safety, financial security, and physical integrity. In the following section we examine externalization in practice by examining general instances of externalization as well as specific cases of US externalization efforts to control migration from Cuba and Venezuela.

# 5 Externalization at Work

The quantitative results presented in the previous section reveal how migration flows vary in response to visa policy changes that open or close routes for migrants navigating the Dari´en or traveling to the United States. However, what evidence exists to show where and why governments externalize migration policy, and how do changes in visa policy play into the externalization framework? Do states ever loosen their visa policies to migrantsending states as a retaliatory foreign policy tool against other destination states? In this section we address these questions and demonstrate migration policy externalization at work in Europe with Spanish policy efforts in Morocco, before drawing a parallel to similar US efforts in Mexico. Following this, we more closely examine US externalization efforts aimed at managing migration flows from Cuba and Venezuela.

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12 Some evidence suggests that very high levels of violence may also deter migration, as migrants perceive increased risks associated with travel through dangerous regions. For example, Orozco-Aleman and Gonzalez-Lozano (2018) find that increased violence in migrant home regions led to higher levels of US-bound migration, while increased violence on routes into the United States decreased overall migration.

13 The marginal effect of population dependency is not significant across most representative values of that variable and is summarized in Appendix Table A2.

In 1999, Spain enlisted the cooperation of Morocco to readmit Moroccans who mass migrated to the southern coast of Spain and the Strait of Gibraltar using irregular migration routes. Later, in 2004, after succumbing to additional pressure from Spain and the EU, Moroccan authorities further extended this policy and agreed to readmit irregular migrants of non-Moroccan origin who had traveled through Morocco and were then detained by Spanish authorities at sea attempting to enter Europe. The Moroccan government agreed to readmit these primarily sub-Saharan African foreign nationals back into its territory with the ultimate intent to deport them back to their own countries of origin (Triandafyllidou, 2014).

Following Morocco's agreement to readmit these migrants, and a subsequent implementation of restricted visa allowances for sub-Saharan African countries, the aggregate number of apprehensions in Spain due to irregular migration directly out of Morocco decreased. However, as an indirect consequence, migration into Spain via pateras (small boats) across riskier routes dramatically increased (Gonz´alez-Enr´ıquez, 2009). The consequences of externalization, particularly direct border control measures and upstream visa restrictions in this Spain-Morocco case, contributed to a vicious cycle and the emergence of new smuggling routes (Carling and Herna´ndez-Carretero, 2011). Rather than restrict overall migration flows, these policies instead channeled irregular migration into alternative routes out of Africa, with Spanish authorities apprehending migrants on indirect routes further out in the Mediterranean sea rather than on routes directly out of Morocco.

A similar pattern of behavior emerged between the United States and Mexico between 1994 and 2018, with US pressure eventually leading Mexico to adopt stronger, and ultimately more repressive, migration control policies in response to increased migrant arrivals heading to the US southern border. Since the late 1990s, both countries collaborated on policies to curb migrant flows into the United States for the stated purpose of countering human trafficking, drug trafficking, and violence. In 2008, President Bush, in partnership with

Mexico's President Calderon, allocated $2.8 million USD to immigration enforcement at the US-Mexico border (Lara, 2022). With this funding, Mexico pursued the securitization of borders, highways, air, and maritime routes; constructed migrant detention facilities; and increased border patrol training.

In 2019, in response to increasing migrant arrivals at the US-Mexico border, President Trump continued these externalization efforts and increased import tariffs on Mexican products, justifying the move by declaring that "Mexico was not doing enough to control migration" (BBC, 2019). Trump tweeted that the tariff would gradually increase until Mexican authorities took steps to remedy the illegal immigration problem (Karni, Swanson and Shear, 2019). Both historical and more recent collaboration between the United States and Mexico in tackling irregular migration has advanced due to external pressure from the US government on its Mexican counterparts. The result of these policy interventions on the migrants themselves has created humanitarian consequences, with many migrants diverting to unsafe routes before arriving at the US southern border and ultimately seeking asylum.

## 5.1 Cuba

Immigration policies have historically strained relations between the United States and Cuba, especially since the culmination of the Cuban Revolution in 1959, after which 1.4 million Cubans fled to the United States. Although relations between these countries improved somewhat under the

Obama administration, many immigration restrictions have since been renewed. The mass migration of Cubans to the United States has not ceased, with more than 2.7 million migrants traveling from Cuba over the last six decades.

While many attempt entry through the US Miami border sector, Cubans remain one of the top migrant nationalities arriving at the US southern border, particularly since the Cuban Adjustment Act was implemented in 1966. Many of these migrants initially fled political repression, but more recent waves have cited deteriorating economic conditions and humanitarian crisis as their primary motivation for fleeing (Venancio and Oliver, 2022). Beginning in 2017, two factors dramatically changed the migration calculus for Cuban nationals considering migration to the United States: the Obama administration's repeal of the "wetfoot/dry-foot" policy and new trade restrictions implemented by the Trump administration, which further contributed to contraction of the Cuban economy.

Just before leaving office in 2017, the Obama administration repealed a decades-long policy codified with the Cuban Adjustment Act of 1966, known as wet foot, dry foot, which granted permanent resident (green card) status to Cuban nationals who arrived on US soil. Following this policy change, Department of Homeland Security personnel would now treat Cuban nationals identical to foreign nationals for all other countries, allowing for "expedited removal proceedings" (US DHS, 2017) and deportation for apprehended individuals detained within the United States or while attempting to cross the border. Functionally, this change indicated to aspiring Cuban migrants that setting foot on US soil in Florida (dry-foot) would no longer suffice for entry into the United States and would instead lead to deportation. Therefore, rather than reducing overall migration flows, this change likely contributed to an increase in Cubans opting for migration through the US southern border sector in an effort to increase their odds of successfully immigrating into the United States.

Economic conditions worsened in 2017 when the Trump administration implemented a series of new trade restrictions prohibiting all commerce with businesses controlled by, or operating on the behalf of, the Cuban military, intelligence agencies, and security services (CFR, 2022). While the administration's policies may have exacerbated Cuba's economic situation, food and resource shortages, medical resource scarcity, and limited electric capacity has also left thousands of Cubans in devastating circumstances. The Biden administration has maintained the embargo, limiting supply shipments that have contributed to worsening economic conditions. These economic and resource limitations, coupled with political repression by Miguel D´ıaz-Canel's regime, has led to an unprecedented flow of Cuban nationals migrating toward the United States for relief.

Indeed, this surge in Cubans arriving at the US southern border is apparent in the data used in our empirical analysis. Between January and September 2022 (when our empirical analysis ends), approximately 195,000 Cuban encounters occurred at the US southern border, compared to only 29,000 during the first nine months the year prior, representing a 570 percent year-on-year increase.

Coinciding with this surge in Cuban migrants arriving at the US southern border, in November 2021, the Biden administration noted irregularities and qualified as "illegitimate" the Nicaraguan general election earlier that month in which Daniel Ortega won his fourth presidential victory. In retaliation, Ortega lifted all restrictions for Cubans entering

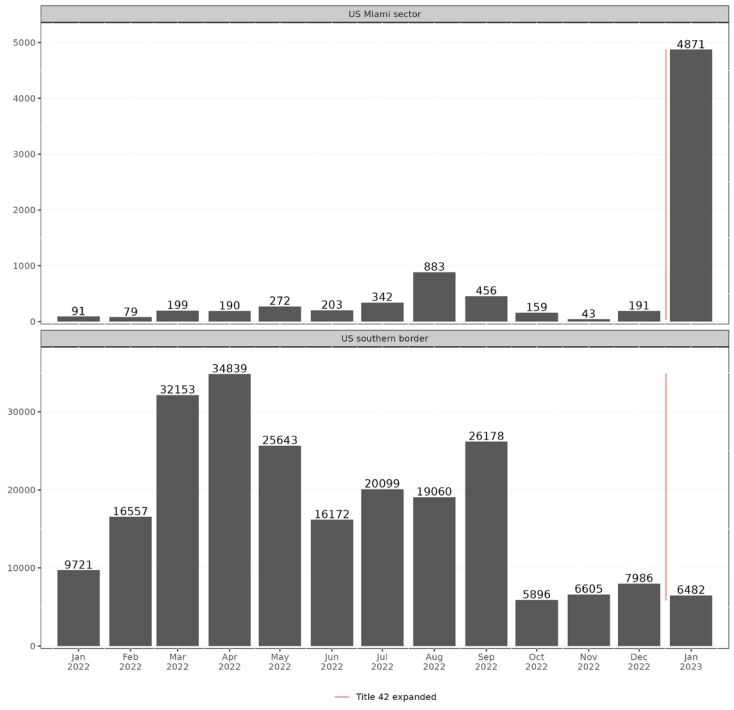
Nicaragua, thereby providing Cuban citizens with a visa-free travel destination in Central America (Reuters, 2021*b*). This ease of visa entry certainly factored into the decision-making for many

Cubans who subsequently navigated the dangerous northbound route to the US southern border in the months following. The move also underscores the use of visa policy as a tool for migration diplomacy, where states might either incentivize neighbors to implement favorable visa policy as a tool to curb immigration at their own borders or, as in the case of Ortega and Nicaragua, use it as a soft power club to respond to unfavorable foreign actions. Regardless of how states incentivize or weaponize immigration policy, migrants bear the cost, as did Cubans traveling a dangerous route to the US southern border in 2022.

US policymakers attempted to find ways to curb the flow of Cuban arrivals in 2022. For example, at the start of COVID lockdowns, the United States implemented Title 42, an expulsion policy authorizing border patrol agents to expel migrants to their home country or to the country they most recently visited. Initially, Title 42 provided an exception to Cuban nationals. However, in response to the significant increase in Cubans encountered at the US southern border, beginning in January 2023, Title 42 was modified to allow the expulsion of Cubans back to Mexico.

Based on CBP encounter data that extends through January 2023, between December 2022 and January 2023—when the Title 42 policy change went into effect—Cuban encounters at the US southern border significantly decreased from nearly 8,000 to approximately 6,500 (Isacson, 2023), representing an 19 percent decrease from the previous month. While these numbers may suggest that the policy change limited inbound Cuban migrant flows, instead, and consistent with our empirical results and argument, Cuban migrants simply rerouted as one corridor closed off to them.

Figure 2. Cuban Encounters at the US Miami Sector and Southern Border




As revised Title 42 restrictions came into effect for Cubans traveling through Mexico to the US southern border, Cubans migrants responded by shifting their routes to more dangerous maritime options in the Caribbean. Following the policy change, CBP Miami sector encounters with Cubans

increased from approximately 191 migrants in December 2022 to nearly 4,900 in January 2023, representing a 2500 percent encounter increase for that sector (Isacson, 2023).[14]

The Cuban case demonstrates several important implications of our argument on the externalization of migration policy, including efficacy limitations due to migrant routing and the use of visa policy as either a tool or weapon in state foreign policy making. In the Cuban case, it is the choices and preferences of Cuban migrants that are most significant for the overall flow of irregular migration. However, they also have the most to lose when faced with rapidly changing visa policy restrictions. Nicaragua's sudden decision to welcome Cubans, followed quickly by the United States tightening its borders through the Title 42 change, left many in a precarious humanitarian situation along the US southern border in Mexico, where cartels operate with near impunity.[15] Furthermore, as our examination of initial migrant flow data suggests, these policy changes likely will not have the desired effect of limiting the flow of Cubans into the United States, as migrants simply reroute from Mexico to the Caribbean in the hopes of entering the United States by sea—a far deadlier route.

## 5.2 Venezuela

Between 2015 and 2022, more than seven million Venezuelans—nearly a quarter of the country's population—fled their homes due to economic collapse,[16] an increasingly hostile and dysfunctional political system, and rising levels of violence (Castellanos-Canales, 2023; HRW, 2017). By mid-2017, mass detainment of antigovernment protesters led to widespread and documented instances of torture and abuse (HRW, 2017), motivating many to flee the country and make bids for asylum elsewhere. Owing to their geographic proximity, Columbia, Ecuador, and Peru stepped up to accept the greatest number of Venezuelan asylees, but other states including Brazil, Mexico, and the United States also accepted increasing numbers of Venezuelans as the exodus unfolded. For example, Mexico welcomed significant numbers of Venezuelans and implemented a policy of accepting nearly all Venezuelan asylum applications (Freier and Nicolas, 2018).

Owing to domestic turmoil and political oppression, the Venezuelan population grew into the largest diaspora in the Western Hemisphere, with many opting for a migration route that carried them out of Venezuela across the Simon Bolivar International bridge into neighboring Colombia before traveling north across Central America and arriving in large waves at the US southern border. The Simon Bolivar International bridge crosses the T´achire River, which runs through the Andes Mountains along the Venezuelan-Colombian border, creating a natural barrier between the two countries. The bridge historically served as a major migration route out of Venezuela (Watson, 2018). However, Venezuelan authorities closed the corridor in 2019, claiming at the time that humanitarian actors were complicit in attempts to destabilize the Maduro regime. They reopened the bridge for pedestrian traffic in 2021 (Reuters, 2021*c*).

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14 Figure 2 reveals this sharp uptick in Miami sector encounters of Cuban migrants by the CBP following the Title 42 policy change closing off the US southern border route. Due to the lethal risks of traveling through the Caribbean to the United States on makeshift boats, the magnitude of these counts in official CBP encounter reports likely understate the full magnitude of the route shift owing to migrant losses at sea.

15 In 2021 approximately 1,200 migrants (51 children) died while traveling through Central America to the US southern border. Of these, a majority of migrant deaths, nearly 730, occurred at the US-Mexico border itself. Cartel predation, exposure to the elements, dehydration and starvation, and natural barriers such as rapidly flowing river crossings combine to make the US-Mexico crossing "the deadliest land crossing in the world" (IOM, 2022).

16 Oil price contraction played a significant role in the Venezuelan economic collapse. Between 2013 and 2021, the country's economy contracted by more than 75 percent following a sharp contraction in oil prices. This economic instability pushed more than 95 percent of Venezuelans into poverty, a situation that the COVID-19 pandemic only compounded (Arena et al., 2022).

In recent years, but particularly since 2021, CBP authorities along the US southern border have recorded unprecedented numbers of Venezuelan arrivals. Based on our data, in 2018 fewer than 100 Venezuelans attempted to cross the US southern border, but by 2021, that figure had grown to over 104,000. The arrival rate increased the following year, and by September 2022, when our analysis ends, the number of reported Venezuelan encounters already exceeded the previous year's total, at 128,000. Given the scale of arrivals, US policymakers have pursued various strategies to reduce Venezuelan migrant flows. For example, the Trump administration imposed income requirements to prevent strain on the US healthcare system (KFF, 2019), while the Biden administration has significantly expanded efforts to deport Venezuelans who illegally crossed into the United States (Reuters, 2023). While these policies represent domestic attempts to address Venezuelan migration, both presidents have also used migration policy externalization as an additional tool to address the crisis by encouraging neighbor countries in Central America to intercept and detain Venezuelans or to deny their entry outright.

Mexico—which, as previously noted, had extended a flexible entry program to Venezuelans, accepting nearly all asylum applications—represents an example of US externalization efforts in action for the Venezuelan case. In January 2022, following pressure from the Biden administration, Mexico imposed new visa restrictions on Venezuelans, reversing its previous policy of allowing visa-free entry (Reuters, 2021*a*).[17] The consequences of this policy change were immediately apparent but short lived. In the three months leading up to January 2022, CBP encountered an average of 22,000 Venezuelans monthly; after the policy change, this rate dropped to an average of only 4,000 a month over the following four-month period ending May 2022. However, consistent with our expectations of migrants rerouting and adjusting their behavior to navigate policy impediments, the flow of Venezuelans to the US southern border returned to previous levels and, over the summer and early fall, once again averaged over 22,000 encounters per month.

Initially, the policy change deterred many migrants from traveling through Mexico as they feared apprehension and deportation if encountered without a valid travel permit under the new rules. However, due to the Mexican Commission for Refugee Assistance allocating such a small number of permits (approximately 5,500 between January and May 2022), and owing to limited humanitarian resources in southern Mexico, rather than wait, many Venezuelans instead formed larger caravans and opted to risk the dangers of overland travel to the US southern border (Reuters, 2022; IOM, 2022).[18]

While the Mexican visa policy change delayed the plans of migrants already in Mexico, it also altered the plans of downstream Venezuelans just starting their migration journey. Whereas Venezuelans had previously flown or taken a bus north to Mexico before continuing on to the US southern border, the new visa restrictions created conditions where, to avoid permit checkpoints along roadways and

17 The revised rules placed a significant burden on Venezuelans attempting to legally enter Mexico. Among the various provisions, the new entry requirements required that they provide a valid passport—a difficult task for most citizens due to the collapse of public services in Venezuela. Additionally, short of presenting evidence of a formal invitation for work or education, migrants needed to show proof of income or employment or provide evidence of holding a minimum of $2,550 in a financial account. Given a monthly minimum wage of $28 USD, these requirements were out of reach for most migrants, closing off legal migration routes (Martinez-Gugerli, 2022).

18 Anticipating unpermitted migrant flows through Mexico, another arm of US externalization involved Mexico bolstering its migration security, especially along the US southern border. In July 2022, President Biden and his Mexican counterpart, President L`opez, announced an agreement for Mexico to pay $1.5 billion for border security over a two-year period in exchange for an increase in US-issued Mexican worker and refugee visas as well as improved labor protections for Mexican nationals working in the United States (Heritage Explains, 2022).

at airports, migrants pursued alternative routes, including through the more dangerous Dari´en Gap. Indeed, as the human rights research organization and monitor WOLA (2022) observed,

> Since Mexico imposed the visa requirement for Venezuelan nationals in January [2022], making it more difficult for Venezuelans to travel to the country by plane, more and more Venezuelans are reportedly arriving to Mexico by foot to present their asylum cases after traveling through dangerous routes such as the Dari´en Gap.

The choices made by Venezuelan migrants attempting to reach the US southern border demonstrate the limits of migration policy externalization and the human costs that changing visa policies can have on those desperate to escape economic hardship and political violence. While US efforts to have Mexico restrict visa conditions for Venezuelan entry did initially prove successful to suppress migrant flows in the short run, as time progressed, the data make clear the temporary nature of that change. Ultimately, migrants observed and responded to the policy change by updating their plans and pursuing their migration goal through other, frequently more dangerous and deadly routes. For Venezuelans in Mexico, the visa change bought limited time, while migrants waited in regions with few humanitarian resources. Meanwhile, for Venezuelans just starting their journey, the change encouraged them to reroute through the dangerous Dari´en Gap. Ultimately, the end result of visa restriction changes remained the same: migrants still arrived, although many more likely suffered along the way.

# 6 Conclusion

Migration policy externalization occurs when governments attempt to restrict migration across their borders by encouraging or coercing neighbor states to restrict migration flow. In this paper we investigate the effectiveness of these externalization efforts by examining one popular tool in the externalization arsenal: visa policy restrictions. Migrant-receiving states encourage their neighbors to tighten visa restrictions for countries with large migrant outflows. But do these policies work? Our empirical results and qualitative analysis suggest they do not. Rather, migrants who are determined to reach a destination reroute to avoid countries with strict visa entry requirements.

We show this empirically with a look at migration through two key migration corridors in the Western Hemisphere: through the Dari´en Gap and across the US southern border.

As legal visa access into regions north of the Dari´en tightens, more migrants cross through that dangerous stretch of territory. Equivalently, as access to Central America increases, we observer fewer Dari´en crossings and more US southern border crossings. The qualitative results also support these claims: Cuban and Venezuelan migrants have both navigated changing visa policy landscapes by altering their plans while remaining fixed on their ultimate destination. Ultimately, these visa policy externalization efforts appear to have limited impact on reducing the overall flow of irregular migration, instead incentivizing migrants to reroute in an effort to evade restrictive visa restrictions while traveling to their intended final destinations.

More work remains to identify the full pattern of irregular migration in the Western Hemisphere. Both our empirical and qualitative analysis provide evidence of a Caribbean visa policy influence on the migration decisions of migrants attempting to reach the southern US border. Both Dari´en and US border crossings significantly decreased as a migrant's legal access to Caribbean countries

increased. Indeed, the qualitative findings clearly indicate that in the aftermath of the Title 42 change in 2022, many Cuban nationals in Mexico altered their migration plans and instead attempted to enter the United States through sea-based rather than overland routes.

While our measure of US encounters in the Gulf Coast border sectors does not emerge as a significant predictor of US southern border encounters, it remains plausible that migrants treat the Caribbean as a substitute route into the United States access when access to Central America decreases following visa policy changes. Future work could explore this possibility in greater detail with the caveat of data limitations on Caribbean encounters: migrant encounters at sea represent a comparatively rare event relative to the Dari´en and US southern border, migrants are more likely to be undercounted, and the US Coast Guard will deter migrants before detaining, leading to further undercounts. Therefore, rather than approaching the issue quantitatively, a qualitative analysis of migrant motivations for route choice may best reveal how migrants select from various alternative migration routes.

Beyond this analysis on the determinants of migrant route preferences, our results also suggest several interesting avenues for future research including: the use of visa policy as a soft-power foreign policy tool, the relationship between climate change and irregular migration, and the generalizability of our findings to other regions—notably Europe and migration across the Mediterranean or through Turkey and into Greece. Additionally, Nicaragua's lifting of visa restrictions on Cuban nationals raises interesting questions concerning why states might employ visa policy as a tool for migration diplomacy and to engage with neighbors or rivals. Under what conditions will a state open its doors to transit migrants in an effort to punish a neighbor? One challenge will be to distinguish when a state implements these visa policy changes for domestic political reasons and when it does so in response to external pressure. In the Nicaragua case the motivation is clear, but to our knowledge, no systematic data set exists that tracks the political conditions under which a state updates their visa policy restrictions. With migration flows expected to increase moving forward into the mid-21st century, it is possible states may weaponize the movement of large populations as another competitive tool in international relations.

Climate change will certainly contribute to large-scale migration flows in the coming decades. Curiously, our empirical results suggest that countries with extreme drought (or wet conditions) relative to normal conditions have fewer migrants crossing through the Dari´en and the same amount traveling to the US southern border compared to other countries with no climate extremes. These results suggest a more complicated relationship between climate and migration than the simple hypothesis that increased climate variability leads to increased migration. We use a binary indicator in our model, but considering climate tipping points or mounting climate pressures reflected as deviations from long-run trends might better identify regions most likely to produce migrants forced to abandon their homes in response to climate change. Additionally, our analysis leverages a country-month unit of analysis. Ecological issues associated with aggregating local climate conditions to a broad country level could also mask the true patterns in the data. In that case, one solution could involve a meso-scale analysis of subnational migration dynamics in response to changing climate conditions.

While our analysis focuses on migration through the Western Hemisphere, several major migration corridors exist globally (IOM, 2021). Qualitatively, we analyze Spain's externalization efforts with Morocco to curtail the flow of sub-Saharan migrants, and show similar routing processes at work in an alternative setting similar to what we found for the Dari´en and the United States. Future work

could extend our findings into these other regions to identify if the migrant routing behavior we identified is generalizable. Additionally, research could investigate how migrants from other regions respond to policy restrictions and identify the factors that influence the emergence of different adaptation strategies. For example, although the route is quite dangerous, much of the Central American migration corridor crosses through more temperate climates. In several regions these migration corridors run adjacent to natural barriers such as mountain ranges, extensive deserts, or oceans. In those regions, the efficacy of visa policy changes might matter more (or less) depending on how migrants navigate visa policy changes in contexts with different migration environments.

Our findings raise serious questions concerning the efficacy of migration policy externalization in general and visa policy restrictions specifically. Given the adaptive capacity of migrants to reroute in response to visa restrictions, these policies appear, at best, to delay arrivals and, at worst, to have no effect on net migration, while only serving to endanger migrants who take more dangerous and deadly routes to their ultimate destinations. Absent draconian regional policy coordination, which implements indiscriminate visa travel bans against migrants from specific countries, these policies do not appear to offer the most effective path forward to respond to migration. Addressing poverty and violence in South and Central America countries through development and humanitarian aid likely has greater potential to alleviate migration pressure. By doing so, potential migrants could be spared from undertaking dangerous travel in the first place.

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# 8 Tables

Table 1. Descriptive Statistics

| | Mean | Std. Dev. |
|---|---|---|
| Dari´en Gap crossings | 247.46 | 1790.16 |
| US southern border crossings | 944.41 | 3338.71 |
| US Caribbean encounters | 0.99 | 4.42 |
| Post-COVID | 0.91 | 0.29 |
| Passport: Central America | 1.51 | 0.68 |
| Passport: Caribbean | 1.93 | 0.42 |
| Passport: North America | 0.82 | 0.33 |
| Passport: South America | 1.66 | 0.55 |
| Pop. depend. | 63.84 | 15.88 |
| Conflict | 0.51 | 1.04 |
| High-fatality disaster | 0.04 | 0.19 |
| Extreme weather | 0.13 | 0.33 |

Table 2. Panel Models

| | Darién | | US Southern Border | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Passport: Central America | −3.2509** | −5.4397*** | 1.1324* | 0.8554 | 2.1697* |
| | (1.1693) | (1.0663) | (0.4409) | (0.8290) | (0.8497) |
| Passport: Caribbean | −6.9860*** | −5.9263*** | −4.1344*** | −3.8327*** | −3.7198*** |
| | (1.8782) | (1.1499) | (1.1129) | (0.8106) | (0.8136) |
| Passport: North America | −4.6059*** | −1.6702** | −1.9419 | −0.0603 | 0.1193 |
| | (0.3112) | (0.6090) | (1.1457) | (0.6102) | (0.6556) |
| Passport: South America | 1.8356*** | 3.8990*** | 0.7075** | 0.8716 | 0.7752 |
| | (0.3703) | (0.8234) | (0.2467) | (0.6997) | (0.6598) |
| US Caribbean, FD | −0.0022 | −0.0019 | −0.0017 | −0.0018 | 0.0005 |
| | (0.0174) | (0.0078) | (0.0050) | (0.0051) | (0.0052) |
| Post-COVID | 1.0331*** | 3.2909*** | 1.7916*** | 4.6108*** | 4.5992*** |
| | (0.2567) | (0.8141) | (0.3728) | (0.9497) | (0.9760) |
| Pop. Depend. | −0.5739*** | −0.3396* | 0.6625** | 0.7907* | 0.7688* |
| | (0.1606) | (0.1533) | (0.2218) | (0.3103) | (0.3091) |
| Pop. Depend.2 | 0.0040*** | 0.0023 | −0.0068** | −0.0074** | −0.0071* |
| | (0.0008) | (0.0012) | (0.0025) | (0.0029) | (0.0029) |
| Conflict | −0.1250 | −0.1819 | 0.4347** | 0.4217** | 0.4684** |
| | (0.1449) | (0.0989) | (0.1324) | (0.1476) | (0.1488) |
| Conflict2 | 0.0285 | 0.0394* | −0.0882*** | −0.0852*** | −0.0917*** |
| | (0.0271) | (0.0199) | (0.0197) | (0.0210) | (0.0214) |
| High-fatality disaster | −0.4986*** | −0.4612*** | −0.2252 | −0.1974 | −0.1947 |
| | (0.0966) | (0.0840) | (0.2601) | (0.2676) | (0.2833) |
| Extreme weather | −0.5055*** | −0.4177*** | 0.0392 | 0.0528 | 0.0596 |
| | (0.0908) | (0.0892) | (0.0769) | (0.0790) | (0.0772) |
| Lag DV | 0.0001*** | 0.0001*** | 0.0001*** | 0.0001*** | 0.0001*** |
| | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| Intercept | 27.1424*** | 14.6250* | −17.6377** | −24.9547** | −26.1019** |
| | (6.9992) | (6.0767) | (6.4952) | (8.7420) | (8.5955) |
| Post-COVID x Passport: Central America | | 3.1073*** | | 0.4641 | 0.4754 |
| | | (0.8584) | | (0.7769) | (0.7760) |
| Post-COVID x Passport: Caribbean | | −0.4573*** | | −0.6226 | −0.6087 |
| | | (0.1376) | | (0.3958) | (0.4197) |
| Post-COVID x Passport: North America | | −3.0956*** | | −2.2405*** | −2.3331*** |
| | | (0.5158) | | (0.4884) | (0.5348) |
| Post-COVID x Passport: South America | | −1.5335 | | 0.0817 | 0.1630 |
| | | (0.9507) | | (0.6371) | (0.6147) |
| Dari´en, FD | | | | | 0.0001*** |
| | | | | | (0.0000) |
| Dari´en, FD (L1) | | | | | −0.0000 |
| | | | | | (0.0001) |
| Dari´en, FD (L3) | | | | | 0.0001** |
| | | | | | (0.0000) |
| Dari´en, level (L1) | | | | | 0.0001 |
| | | | | | (0.0000) |
| Dari´en, level (L3) | | | | | −0.0000 |
| | | | | | (0.0000) |
| $\theta$ | 1.6018*** | 1.6794*** | 2.0557*** | 2.0902*** | 2.1363*** |
| | (0.0717) | (0.0759) | (0.1021) | (0.1041) | (0.1071) |
| FE: Unit | Yes | Yes | Yes | Yes | Yes |
| FE: Time | Yes | Yes | Yes | Yes | Yes |
| Obs. | 1,113 | 1,113 | 1,113 | 1,113 | 1,113 |
| Log likelihood | −4402.0080 | −4377.2284 | −5028.9548 | −5021.9029 | −5013.2862 |
| AIC | 9074.0159 | 9032.4568 | 10327.9096 | 10321.8057 | 10314.5724 |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Panel-corrected robust standard errors are reported in parentheses.

Table 3. Marginal Effects: Passport Restrictions

| | Darién | | US Southern Border | |
|---|---|---|---|---|
| | COVID | Post-COVID | COVID | Post-COVID |
| CA | −196.69*** | −1016.08** | 54.85 | 1531.86* |
| | (50.25) | (373.07) | (51.69) | (691.53) |
| CR | −133.83*** | −1736.77*** | −153.48*** | −3230.38*** |
| | (25.59) | (411.10) | (36.75) | (737.72) |
| NA | −29.66** | −1019.67*** | −1.90 | −1311.91*** |
| | (10.80) | (242.50) | (18.98) | (256.51) |
| SA | 115.38*** | 843.41*** | 45.74 | 905.80*** |
| | (29.72) | (176.21) | (39.40) | (270.47) |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Panel-corrected robust standard errors are in parentheses.

Table 4. Marginal Effects: Encounters

| | US Southern Border |
|---|---|
| Dari´en, FD | 1.60* |
| | (0.67) |
| Caribbean, FD | 0.04*** |
| | (0.01) |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$. Panel-corrected robust standard errors are reported in parentheses.

Table 5. ARIMA Models: US Time Series

| | (1) | (2) | (3) |
|---|---|---|---|
| Dari´en, FD | 1.24* | | 1.57** |
| | (0.51) | | (0.52) |
| Dari´en, FD (L3) | 0.36 | | −0.10 |
| | (0.52) | | (0.61) |
| Dari´en, level (L1) | | 0.35 | |
| | | (0.61) | |
| Dari´en, level (L3) | | 0.39 | |
| | | (0.65) | |
| US Gulf, FD | 20.20 | −7.25 | 26.67 |
| | (50.92) | (55.46) | (51.33) |
| US Gulf, (L1) | 15.29 | 33.83 | 29.46 |
| | (72.35) | (77.98) | (73.43) |
| FE: Month | Yes | Yes | Yes |
| AIC | 983.27 | 988.02 | 983.19 |
| BIC | 1011.82 | 1016.57 | 1015.31 |
| Log likelihood | −475.64 | −478.01 | −473.60 |
| Obs. | 44 | 44 | 44 |

***$p < 0.001$; **$p < 0.01$; *$p < 0.05$

# 9 Figures

Figure 1. Irregular Migration Crossings

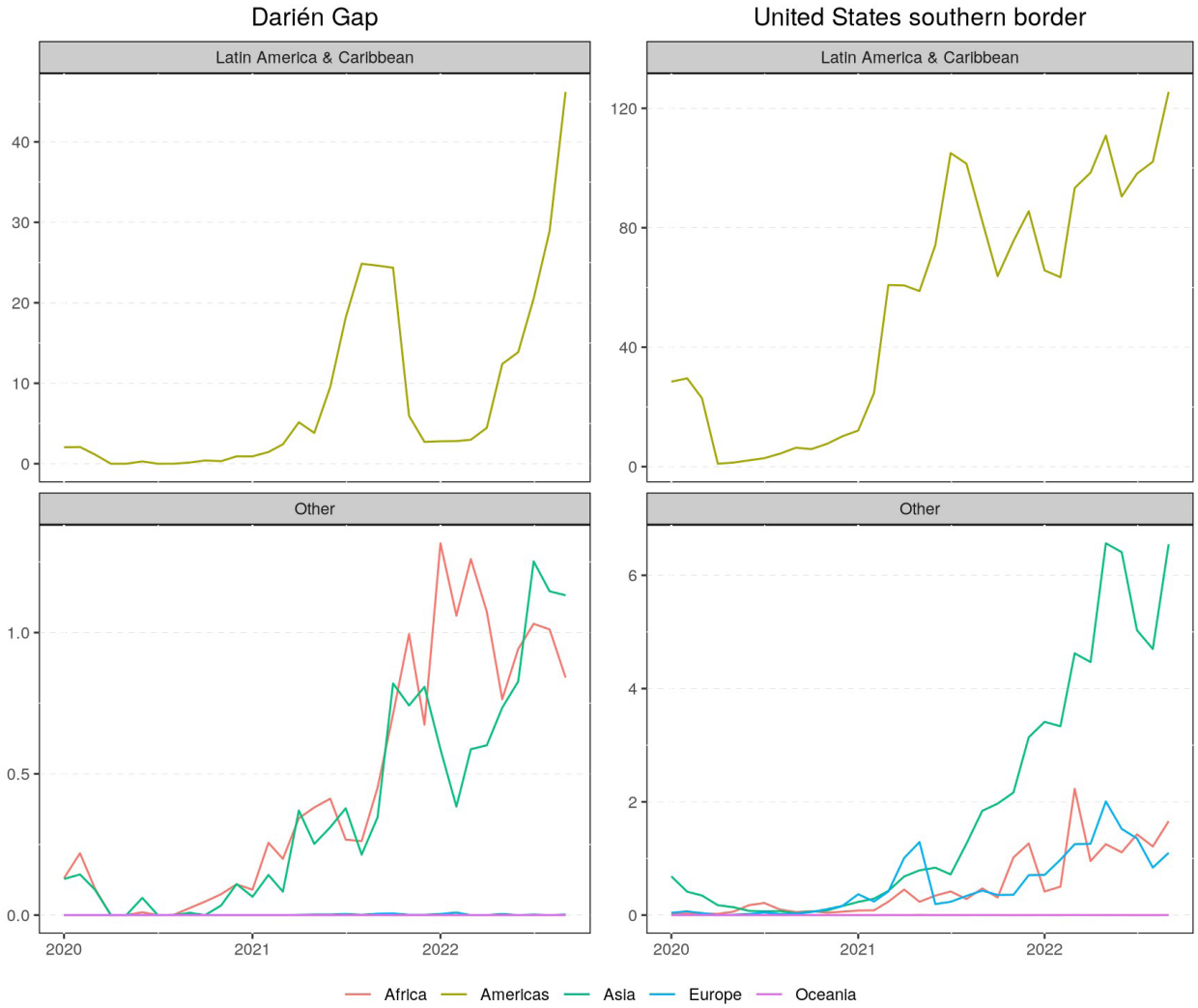
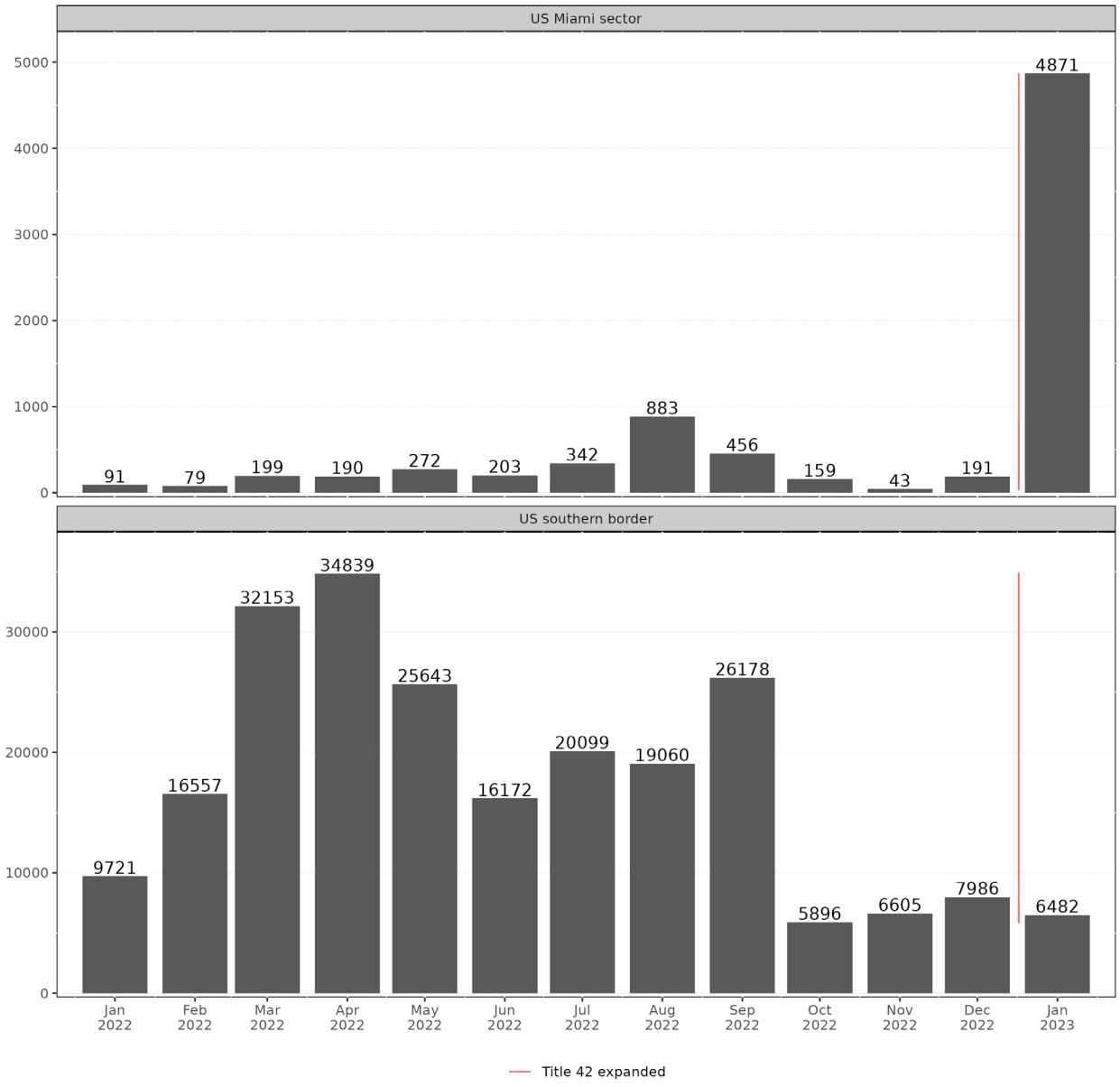


Figure 2. Cuban Encounters at the US Miami Sector and Southern Border



# 10 Appendix

Table A1. Marginal Effects: Conflict

| | Dari´en | US |
|---|---|---|
| Conflict: None | −124.91 | 582.99** |
| | (76.27) | (178.46) |
| Conflict: 10th pct | −122.23 | 583.19** |
| | (74.38) | (181.76) |
| Conflict: 25th pct | −114.39 | 582.31** |
| | (68.94) | (192.14) |
| Conflict: 50th pct | −77.50 | 536.22* |
| | (45.50) | (233.96) |
| Conflict: 75th pct | −22.75 | 255.75 |
| | (21.07) | (215.30) |
| Conflict: 90th pct | 43.87 | −305.73** |
| | (31.75) | (96.51) |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Panel-corrected robust standard errors, clustered at the country level, are reported in parentheses.

Table A2. Marginal Effects: Population Dependency

| | Dari´en | US |
|---|---|---|
| AME | −59.50* | 78.79 |
| | (26.41) | (109.25) |
| Pop. dep.: 25th pct | −10.78 | 128.08 |
| | (9.54) | (210.47) |
| Pop. dep.: 50th pct | −3.37 | −148.02 |
| | (2.61) | (407.52) |
| Pop. dep.: 75th pct | 0.12 | −18.13* |
| | (0.96) | (9.16) |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Panel-corrected robust standard errors, clustered at the country level, are reported in parentheses.

Table A3. Marginal Effects: Other

| | Dari´en | US |
|---|---|---|
| Post-COVID | −593.20 | 1455.13*** |
| | (1214.90) | (233.61) |
| High-fatality disaster | −221.60*** | −275.10 |
| | (58.83) | (345.63) |
| Extreme weather | −201.55*** | 85.10 |
| | (59.92) | (130.07) |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Panel-corrected robust standard errors, clustered at the country level, are reported in parentheses.

Table A4. US Models: Alternative Dari´en Lags

| | (1) | (2) | (3) |
|---|---|---|---|
| Passport: Central America | 1.9683* | 1.7294* | 2.4620** |
| | (0.8471) | (0.8342) | (0.8704) |
| Passport: Caribbean | −3.7870*** | −3.6106*** | −3.5885*** |
| | (0.8511) | (0.8026) | (0.8323) |
| Passport: North America | 0.1022 | 0.0693 | 0.1975 |
| | (0.6423) | (0.6161) | (0.6422) |
| Passport: South America | 0.7822 | 0.7193 | 0.6532 |
| | (0.6713) | (0.6803) | (0.6747) |
| Post-COVID x Passport: Central America | 0.4528 | 0.4468 | 0.4057 |
| | (0.7841) | (0.7719) | (0.7866) |
| Post-COVID x Passport: Caribbean | −0.6230 | −0.6786 | −0.6829 |
| | (0.4215) | (0.4197) | (0.4389) |
| Post-COVID x Passport: North America | −2.3227*** | −2.2147*** | −2.3043*** |
| | (0.5164) | (0.4919) | (0.5146) |
| Post-COVID x Passport: South America | 0.1651 | 0.1369 | 0.2359 |
| | (0.6268) | (0.6244) | (0.6281) |
| Post-COVID | 4.6321*** | 4.7991*** | 4.8405*** |
| | (0.9797) | (0.9581) | (0.9838) |
| Pop. depend. | 0.7514* | 0.6710* | 0.6529* |
| | (0.3026) | (0.3291) | (0.3256) |
| Pop. depend$^2$ | −0.0070* | −0.0063* | −0.0061* |
| | (0.0028) | (0.0030) | (0.0030) |
| Conflict | 0.4561** | 0.4507** | 0.4648** |
| | (0.1470) | (0.1496) | (0.1497) |
| Conflict$^2$ | −0.0898*** | −0.0885*** | −0.0901*** |
| | (0.0213) | (0.0218) | (0.0219) |
| High-fatality disaster | −0.2045 | −0.2237 | −0.2159 |
| | (0.2779) | (0.2864) | (0.2960) |
| Extreme weather | 0.0551 | 0.0551 | 0.0531 |
| | (0.0779) | (0.0796) | (0.0792) |
| Dari´en, FD | 0.0001*** | | 0.0001*** |
| | (0.0000) | | (0.0000) |
| Dari´en, FD (L1) | 0.0001* | | 0.0000 |
| | (0.0000) | | (0.0001) |
| Dari´en, FD (L3) | 0.0001*** | | 0.0001** |
| | (0.0000) | | (0.0000) |
| Dari´en, level (L1) | | 0.0001*** | 0.0000 |
| | | (0.0000) | (0.0000) |
| Dari´en, level (L3) | | −0.0001*** | −0.0000 |
| | | (0.0000) | (0.0000) |
| Dari´en, level (L12) | | −0.0003*** | −0.0003*** |
| | | (0.0000) | (0.0000) |
| Lag DV | 0.0001*** | 0.0001*** | 0.0001*** |
| | (0.0000) | (0.0000) | (0.0000) |
| Intercept | −25.1405** | −22.8667** | −23.2514** |
| | (8.4531) | (8.7830) | (8.6437) |
| FE: Country | Yes | Yes | Yes |
| FE: Year-month | Yes | Yes | Yes |
| Obs. | 1, 113 | 1, 113 | 1, 113 |
| Log likelihood | −5014.4685 | −4995.4263 | −4990.3469 |
| AIC | 10310.9370 | 10272.8527 | 10268.6939 |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Panel-corrected robust standard errors, clustered at the country level, are reported in parentheses

Table A5. US Models, Excluding Mexico

| | (1) | (2) | (3) |
|---|---|---|---|
| Passport: Central America | 1.1284** | 0.8299 | 2.1270* |
| | (0.4365) | (0.8503) | (0.8606) |
| Passport: Caribbean | −4.0663*** | −3.7958*** | −3.6891*** |
| | (1.1204) | (0.8289) | (0.8255) |
| Passport: North America | −2.2270 | −0.3039 | −0.1158 |
| | (1.3681) | (0.6228) | (0.6715) |
| Passport: South America | 0.6742** | 0.8535 | 0.7590 |
| | (0.2410) | (0.6992) | (0.6586) |
| Post-COVID x Passport: Central America | | 0.4790 | 0.4888 |
| | | (0.7891) | (0.7844) |
| Post-COVID x Passport: Caribbean | | −0.6251 | −0.6133 |
| | | (0.4045) | (0.4222) |
| Post-COVID x Passport: North America | | −2.3154*** | −2.3998*** |
| | | (0.4807) | (0.5265) |
| Post-COVID x Passport: South America | | 0.0487 | 0.1327 |
| | | (0.6572) | (0.6323) |
| Post-COVID | 1.8175*** | 4.7502*** | 4.7246*** |
| | (0.3756) | (0.9815) | (1.0042) |
| Pop. depend. | 0.6838** | 0.8179** | 0.7960* |
| | (0.2235) | (0.3111) | (0.3117) |
| Pop. depend$^2$ | −0.0069** | −0.0075** | −0.0073* |
| | (0.0025) | (0.0029) | (0.0029) |
| Conflict | 0.4371*** | 0.4238** | 0.4701** |
| | (0.1316) | (0.1459) | (0.1476) |
| Conflict$^2$ | −0.0888*** | −0.0857*** | −0.0919*** |
| | (0.0199) | (0.0210) | (0.0215) |
| High-fatality disaster | −0.2413 | −0.2123 | −0.2139 |
| | (0.2693) | (0.2766) | (0.2925) |
| Extreme weather | 0.0398 | 0.0533 | 0.0600 |
| | (0.0772) | (0.0788) | (0.0773) |
| Dari´en, FD | | | 0.0001** |
| | | | (0.0000) |
| Dari´en, FD (L1) | | | −0.0000 |
| | | | (0.0001) |
| Dari´en, FD (L3) | | | 0.0001** |
| | | | (0.0000) |
| Dari´en, level (L1) | | | 0.0001 |
| | | | (0.0000) |
| Dari´en, level (L3) | | | −0.0000 |
| | | | (0.0000) |
| Lag DV | 0.0001*** | 0.0001*** | 0.0001*** |
| | (0.0000) | (0.0000) | (0.0000) |
| Intercept | −18.2312** | −25.7665** | −26.8732** |
| | (6.4073) | (8.7578) | (8.6682) |
| FE: Country | Yes | Yes | Yes |
| FE: Year-month | Yes | Yes | Yes |
| Obs. | 1106 | 1106 | 1106 |
| Log likelihood | −4964.2989 | −4957.0532 | −4948.6339 |
| AIC | 10194.5978 | 10188.1063 | 10181.2677 |

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Panel-corrected robust standard errors, clustered at the country level, are reported in parentheses