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Abstract

In an attempt to reduce unauthorized entries into the United States, the Biden administration created humanitarian parole programs for migrants from several countries experiencing crises. Migrants with a U.S. sponsor could apply from abroad and, if approved, were allowed to enter the country and remain for up to two years. Under the CHNV program, over 530,000 migrants from Cuba, Haiti, Nicaragua, and Venezuela were paroled into the U.S. between late 2022 and mid-2024. Synthetic difference-in-differences models indicate a sustained drop in unauthorized attempted crossings between ports of entry for Cuba and Nicaragua, a short-lived drop for Venezuela, and no clear pattern for Haiti after the parole processes began. The difference may be due to some migrants from Haiti and Venezuela – but not Cuba and Nicaragua – being eligible for another U.S. humanitarian protection program, giving them more motivation to attempt entry. Meanwhile, the number of inadmissible migrants who presented themselves at ports of entry along the border did not fall for any of the countries included in the CHNV parole program. Overall, the program appears to have reduced attempts to enter the United States by Nicaraguans, had no impact among Cubans and Venezuelans, and increased the number of Haitian migrants.

Keywords: humanitarian parole, illegal immigration, unauthorized immigration, CHNV program

JEL Classification: J15, F22, D74

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Introduction

Unauthorized immigration surged in the United States in the wake of the pandemic. The U.S. Border Patrol (USBP) recorded over 6.3 million encounters with migrants attempting to cross the U.S.-Mexico border illegally during 2021-2023. The rising number of unauthorized migrants was coupled with an increase in the diversity of their origins. What had historically been a flow dominated by Mexicans and had more recently included large numbers of migrants from the Northern Triangle countries of El Salvador, Guatemala, and Honduras, began shifting to growing numbers from further south in Latin America and around the world. USBP was unable to return many of those migrants to their origin country or expel them to Mexico and ended up releasing millions of migrants into the U.S. interior with a notice to appear in immigration court.

The Biden administration attempted to quell the surge by boosting operations along the border and creating or expanding ways to allow some migrants to enter the country legally but without a visa. Those ways included the CBP One mobile app, which enabled migrants to schedule an appointment at the border to begin the asylum process, and humanitarian parole processes for migrants from several countries experiencing a crisis. A formal parole process for Venezuelans was announced in October 2022, and for Cubans, Haitians, and Nicaraguans in January 2023.[1] Those processes became known as the CHNV program, which allowed up to 30,000 migrants from those countries to be paroled into the United States each month. Ultimately, over 530,000 migrants entered the country via the CHNV program before it was

[1] The Biden administration also created Operation Allies Welcome to provide humanitarian parole to Afghans who had assisted U.S. armed forces and Uniting for Ukraine (U4U) to provide humanitarian parole to Ukrainians.

paused in summer 2024 by the Biden administration and later formally terminated by the Trump administration.

This study examines whether the CHNV program achieved its aim of alleviating pressure on the U.S.-Mexico border by reducing attempts to enter the country illegally, as measured by USBP encounters with migrants attempting to cross between ports of entry. In addition, we examine changes in the numbers of migrants who presented themselves at U.S. ports of entry without a valid visa, were encountered by Mexican enforcement authorities before they reached the United States, or crossed the Darién Gap in Panama. Together, the results give a comprehensive picture of the impact of the CHNV program on unauthorized migrant flows.

Although it might seem intuitively obvious that creating a legal way to enter the country reduces unauthorized flows, that is not necessarily the case. Migrants may misunderstand program details and show up along the border, believing that they will be allowed in under the program. Smugglers who are hired to help with the journey may stoke this misunderstanding. Other migrants who know they are not eligible for the program may perceive it as signaling a more lenient immigration policy regime and try to enter the United States, perhaps hoping they will be eligible for a future program once already inside the country. People may also migrate illegally to reunite with family members who were program beneficiaries even though they themselves are not eligible.

There is little research specifically on the impact of humanitarian parole programs on migration flows.[2] Looking at the universe of encounters along the Southwest border between October 2011 and July 2023, Clemens (2024) shows that allowing in more migrants without a

[2] Think tank studies by DiMartino (2023) and Wong (2024) that examined the early impact of the CHNV and U4U programs generally report a reduction in USBP encounters with migrants from those countries between ports of entry.

visa at ports of entry – mainly via humanitarian parole or to seek asylum – reduces unauthorized entries between ports of entry. Amuedo-Dorantes and Bucheli (2023) show that the inverse is true as well – restricting migrants' ability to seek asylum at ports of entry along the Southwest border increased unauthorized migration during 2013-2020. Meanwhile, programs that offer some form of temporary protection to migrants already in the country, such as Deferred Action for Childhood Arrivals (DACA) and Temporary Protected Status (TPS), do not appear to stimulate additional unauthorized immigrant inflows (e.g., Amuedo-Dorantes and Puttitanun 2016; Wong et al. 2021; Helms and Leblang 2022). Older evidence on whether increases in border enforcement reduce unauthorized migration to the U.S. reaches mixed conclusions, but there is a growing consensus that the higher level of border enforcement in recent decades has reduced attempted entries (e.g., Angelucci 2012; Massey et al. 2016; Alden 2017; Feigenberg 2020; Bazzi et al. 2021).

The Biden administration claimed that the CHNV program successfully reduced USBP encounters with migrants from those countries trying to illegally enter the United States, as well as the number of people migrating throughout the Western Hemisphere.[3] The Trump administration, in contrast, claimed in its notice terminating the program that encounters with CHNV migrants remained high. The Trump administration argued that, although encounters with CHNV migrants between ports of entry fell, there was a significant increase in encounters at

[3] For example, the notices creating the programs for Cuba, Haiti, and Nicaragua all claimed there was a drop in encounters with Venezuelans at the southwest border within a week of the Venezuelan program announcement, that the drop had increased over time, and that the process had led to a "precipitous" decline in irregular migration by Venezuelans throughout the Western Hemisphere, including a drop in Darién Gap crossings. See https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00252.pdf, https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00255.pdf, and https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00254.pdf. The Biden administration later extended its claims of success, claiming that the program was deterring irregular migration by Cubans, Haitians, and Nicaraguans as well as continuing to reduce the number of irregular Venezuelan migrants. See https://www.federalregister.gov/documents/2023/02/23/2023-03718.pdf.

ports of entry, resulting in "very high numbers" of CHNV migrants being allowed to enter the country and placed into removal proceedings, "exacerbating the immigration court backlog and the poor incentives that the backlog creates."[4]

This study assesses the accuracy of policymakers' claims that the CHNV program reduced – or, in the case of ports of entry, increased – the number of migrants from those countries trying to enter the United States, as well as transiting through Mexico and further south. Whereas both administrations' claims relied on simple comparisons of the number of migrants from CHNV countries over time, we compare changes in flows of CHNV migrants with other migrants using synthetic difference-in-differences models. To briefly preview the results, we find mixed evidence in support of both administrations' claims: Encounters between ports of entry fell for some – but not all – CHNV countries, and encounters at ports of entry rose for some – but not all – CHNV countries. The next section provides additional background on the CHNV program and the broader immigration policy context in which the program occurred. Section 3 explains our data sources and empirical methodology. Section 4 provides the results, and section 5 discusses our findings.

Background on the CHNV Program and Other Biden-era Changes

The creation of the Venezuelan parole process and its extension to Cuba, Haiti, and Nicaragua marked a significant policy shift by the Biden administration. The CHNV program combined a new pathway for humanitarian entry with plans to expand expulsions and limit asylum claims by unauthorized migrants from the CHNV countries. The processes were created

[4] See https://www.federalregister.gov/documents/2025/03/25/2025-05128/termination-of-parole-processes-for-cubans-haitians-nicaraguans-and-venezuelans.

amidst sizable increases in unauthorized migration from the CHNV countries, with the notable exception of Haiti, as discussed in more detail below.

The CHNV program required beneficiaries to pass national security and public safety vetting, have a valid passport, meet public health requirements, and have a U.S. sponsor with the financial means to support them for the duration of the parole period, among other provisions. Beneficiaries could not have been ordered removed from the United States in the last five years, and unaccompanied children were excluded from the program. Once in the United States, beneficiaries could apply for asylum, and, in the case of some Haitians and Venezuelans, for Temporary Protected Status (TPS). The Biden administration re-designated those two countries for TPS (in July 2024 for Haiti, and September 2023 for Venezuela), which made recently arrived migrants eligible to apply for TPS. Asylum beneficiaries can adjust to permanent resident status, while TPS is typically granted for 18 months at a time and has, with the exception of the Trump administrations, traditionally been extended if home country conditions have not improved.

Potential migrants had several incentives to apply for humanitarian parole via the CHNV program, if eligible. CHNV beneficiaries were legally granted entry to the United States for a two-year period. They flew directly to the United States (at their own expense), avoiding a costly and risky journey on foot through other countries or by sea. They were eligible to apply for work authorization immediately upon arrival in the United States. Other migrants who entered the United States by presenting themselves at a port of entry or crossing between ports of entry and then applied for asylum had to wait 150 days after their asylum application was filed before they could apply for work authorization. Since CHNV beneficiaries were granted entry instead of entering without inspection, they did not have to leave the United States if they applied for

permanent resident status. Like refugees, parolees were eligible for federally funded transfer programs during their first five years in the United States if they met those programs' other requirements (Bruno and Kolker 2025). There was no fee to apply to the CHNV program.

The CHNV program was paired with several other initiatives aimed at reducing unauthorized migration from those countries. Mexico agreed to accept up to 30,000 CHNV migrant expulsions per month from the United States. Prior to the creation of the CHNV program, Mexico had been reluctant to accept expelled migrants from those countries. Mexico's cooperation was important since Cuba, Nicaragua, and Venezuela refused to accept U.S. repatriation flights of expelled migrants, and repatriations to Haiti were limited because of the severity of the crisis there. Further, migrants could not request asylum while being expelled back to Mexico. The CHNV program also aimed to deter additional irregular migration by declaring people ineligible for parole if they crossed illegally into the country between ports of entry or irregularly entered Mexico or Panama after the program was announced. The program later made Cubans and Haitians interdicted at sea ineligible as well.[5]

The CHNV program proved to be extremely popular with potential migrants. DHS received 1.5 million applications in the first few months, enough to fill the program's quota for more than four years. DHS filled half of the monthly quota on a first-come, first-served basis and the other half based on random selection. The lottery presumably aimed to motivate applicants who were far down in the queue to remain in their home country instead of going ahead and migrating. Haiti accounted for considerably more approved beneficiaries – 37 percent of the total – than the other countries (see Appendix Figure 1).[6]

[5] See https://www.dhs.gov/archive/news/2023/07/25/fact-sheet-data-first-six-months-parole-processes-cubans-haitians-nicaraguans-and.

[6] The disproportionate share to Haitians presumably reflects their high share of applications. As of August 2024, Haitians had submitted more than 1.5 million applications, compared with nearly 760,000 by Cubans, 178,000 by

The Biden administration paused the program for Venezuelans in July 2024 and for the other three countries in August 2024 because of concerns about potentially fraudulent U.S. sponsors.[7] New approvals then halted. Although the Biden administration announced plans to reopen the program in late summer 2024, it did not approve any new beneficiaries after August 2024 or issue any advance travel authorizations after September 2024. In addition, the Biden administration announced in October 2024 that it would not renew existing beneficiaries' parole beyond the initial two-year period.[8] The Trump administration announced on its first day in office that it was ending the program for new applicants, and announced in March 2025 that it was revoking humanitarian parole protections for existing beneficiaries.[9]

The CHNV program occurred against a backdrop of many other changes to U.S. policies regarding unauthorized immigrants.[10] Unauthorized immigration was extremely low when the Biden administration took office, in part because the Covid-19 pandemic had led the Trump administration to invoke Title 42 in March 2020. Title 42 was a public health measure that initially closed ports of entry to virtually all migrants and allowed USBP to expel most migrants it encountered illegally crossing the border back to Mexico or to their home country without an asylum screening. Prior to the onset of the pandemic, the Trump administration had faced several years of rising levels of unauthorized entries (e.g., Hoekstra and Orozco-Aleman 2021). One of its responses was family separations at the border, which were so controversial that the Trump administration ended them less than three months after beginning them in mid-2018 (Amuedo-

Nicaraguans, and 432,000 by Venezuelans (see https://judiciary.house.gov/media/press-releases/new-report-two-years-biden-harris-administrations-fraud-ridden-parole-program)

[7] See https://www.nbcnews.com/investigations/biden-admin-restart-chnv-immigration-program-paused-fraud-concern-rcna168838.

[8] See https://www.cbsnews.com/news/venezuelans-legal-status-chnv-program/.

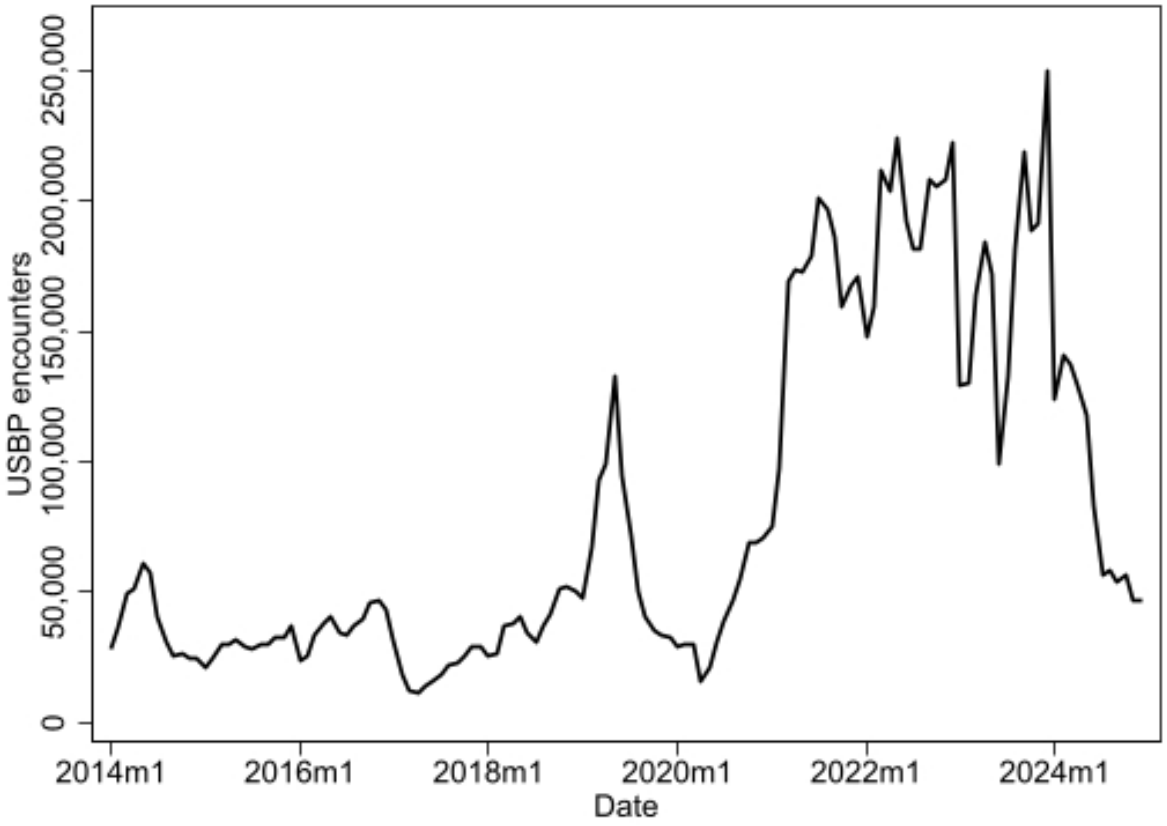
[9] See https://www.federalregister.gov/documents/2025/03/25/2025-05128/termination-of-parole-processes-for-cubans-haitians-nicaraguans-and-venezuelans.

[10] For a comprehensive discussion of Biden-era immigration policies, see, for example, Chishti et al (2024a).

Dorantes and Bucheli 2024). A longer-lasting response was the Migrant Protection Protocols (MPP), or "Remain in Mexico" policy, which began in early 2019 and allowed authorities to require migrants seeking asylum to wait in Mexico while their asylum petitions were decided (Amuedo-Dorantes and Bucheli 2023). The Trump administration also threatened Mexico with tariffs in late May 2019 if it did not increase enforcement internally and along its southern border, which is primarily with Guatemala.[11] USBP encounters with migrants plummeted almost immediately thereafter, as shown in Figure 1, suggesting a considerable increase in Mexican enforcement activity.[12]

[11] See https://trumpwhitehouse.archives.gov/briefings-statements/statement-president-regarding-emergency-measures-address-border-crisis/.
[12] An earlier increase in Mexican enforcement activity along its southern border in 2014 reduced intentions to migrate among deported Central Americans (Martinez Flores 2020).

Figure 1. US Border Patrol encounters with migrants between ports of entry along U.S.-Mexico border, 2014-2024



Note: The figure shows the total number of USBP encounters with migrants between ports of entry along the U.S.-Mexico border. The data are monthly for the period January 2014 through December 2024. The data are from the U.S. Department of Homeland Security, Office of Homeland Security Statistics and Customs and Border Protection.

Immediately upon taking office in January 2021, the Biden administration suspended MPP and then attempted to formally terminate the program. The administration was required by a court decision to restart the program in late 2021, but successfully terminated the program a second time after the Supreme Court ruled in its favor in mid-2022. In the meantime, unauthorized border crossings were rising rapidly even though Title 42 remained in effect (Figure 1).

The increase in border crossings led the Biden administration to make several notable policy changes in addition to the CHNV program as it prepared to lift Title 42. Those changes included launching the CBP One mobile app and reducing access to asylum for illicit border crossers. Beginning in January 2023, the Biden administration required migrants to use CBP One to make an appointment to present themselves at a port of entry to ask to be granted entry into the United States, where they could then pursue an asylum claim. In February 2023, the administration announced that after Title 42 was lifted, most migrants who did not use CBP One and instead tried to cross the border irregularly or who had not applied for and been denied asylum in a third country while en route to the United States would be presumed ineligible for asylum.[13] It formally lifted Title 42 in May 2023. The administration announced in June 2024 that, unless encounters were below very low levels, it would bar most migrants who crossed between ports of entry from applying for asylum and would deport them rapidly.[14]

In addition to creating the CHNV program, the Biden administration made changes to some legal immigration pathways in hopes of reducing unauthorized entries. These included raising the cap on refugees from Latin America and the Caribbean, a region that had rarely been prioritized for refugee resettlement, and allocating additional seasonal H-2B temporary worker visas to some Western Hemisphere countries. It also attempted to increase partnerships with governments in origin countries to reduce unauthorized migration by addressing root causes, such as limited economic opportunities and gang violence, and countering migrant smuggling operations.[15]

[13] See https://www.dhs.gov/archive/news/2023/02/21/fact-sheet-notice-proposed-rulemaking-circumvention-lawful-pathways.
[14] See https://www.dhs.gov/archive/news/2024/06/04/fact-sheet-presidential-proclamation-suspend-and-limit-entry-and-joint-dhs-doj.
[15] See https://www.dhs.gov/archive/news/2023/05/01/fact-sheet-update-dhs-planning-southwest-border-security-measures-title-42-public.

The CHNV countries were experiencing dire circumstances in the early 2020s. Cuba was undergoing its worst economic crisis in decades, caused by a combination of the pandemic, reduced aid from Venezuela, and U.S. sanctions. Food shortages, rolling electricity blackouts, and internet outages were commonplace and worsened after a category 5 hurricane hit the island in late September 2022. Meanwhile, political expression was restricted, and political protestors risked severe penalties.[16] Haiti was in the midst of economic collapse, a public health emergency that included a cholera epidemic in Fall 2022, and widespread gang violence. The Haitian president was assassinated in July 2021, and the country had a 7.2 magnitude earthquake in August 2021. Unlike the other CHNV countries, the Haitian government was generally willing to accept repatriations, but the U.S. government suspended repatriation flights in September 2022 because gangs had taken over much of the capital, including the airport.[17] Nicaragua was one of the poorest countries in Latin America, and political activity there was severely repressed.[18] Venezuela's economy had contracted by more than 75 percent since 2013, and the country was experiencing hyperinflation and food shortages. Political opposition was effectively banned. Venezuela was second globally to Syria in its number of emigrants, which totaled over 7 million, or 23 percent of the population.[19]

There appear to be several reasons why the CHNV countries were included in the parole program. One obvious reason is the conditions in those countries. However, some other countries

[16] For additional discussion of conditions in Cuba at the time, see, for example, https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00252.pdf and Freeman (2023).
[17] For additional discussion of conditions in Haiti at the time, see, for example, https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00255.pdf, and https://www.paho.org/en/haiti-humanitarian-crisis-grade-3.
[18] For additional discussion of conditions in Nicaragua at the time, see, for example, https://www.govinfo.gov/content/pkg/FR-2023-01-09/pdf/2023-00254.pdf.
[19] For additional discussion of conditions in Venezuela at the time, see, for example, https://www.govinfo.gov/content/pkg/FR-2022-10-19/pdf/2022-22739.pdf and https://www.elibrary.imf.org/downloadpdf/view/journals/087/2022/019/article-A001-en.pdf

in the Western Hemisphere that were also struggling economically in the wake of the pandemic and experiencing limited political expression were not included in the program. High and rising numbers of migrants were also part of the justification offered in the notices announcing the CHNV programs. However, migration was not rising for all the CHNV countries yet was rising for many countries that were excluded. For example, as we show later, encounters with illicit border crossers were actually not rising for Haitians in late 2022. Meanwhile, USBP data indicate that encounters with migrants from Mexico were rising and at a considerably higher level than for any of the CHNV countries. Encounters with migrants from El Salvador and Honduras were below earlier peaks but still higher than those with migrants from Nicaragua through late 2022. Perhaps a key consideration was that, in the case of non-CHNV countries, the Biden administration was able to repatriate migrants to those countries or expel them back to Mexico. The main options regarding border crossers from the CHNV countries, in contrast, were to release or detain them indefinitely. The Biden administration appears to have hoped that it could divert some CHNV migrants into arriving at airports via the parole program, motivate some others to remain home in hopes of eventually getting a parole slot, and deter others from crossing illicitly by threatening to expel them to Mexico without allowing them to ask for asylum.

Data and Methods

We examine several measures of migration flows, focusing on U.S. Department of Homeland Security (DHS) counts of encounters between USBP and Customs and Border Protection (CBP) agents and unauthorized migrants either between or at ports of entry.[20]

[20] We do not examine legal entries on temporary visas or newly issued permanent resident visas since there is likely to be little substitution between the measures of unauthorized migration flows we examine and legal entries with a

Encounters between ports of entry are a widely used proxy for attempted unauthorized border crossings (e.g., Bazzi et al. 2021; Amuedo-Dorantes and Bucheli 2023; Clemens 2024). These migrants are typically apprehended or expelled from the U.S., but a sizable number of them were released into the U.S. during the post-pandemic immigration surge and given a notice to appear (NTA) later in immigration court for removal proceedings, a process that can take years. Many of the released migrants pursued an asylum claim, which allowed them to apply for work authorization and prolong their removal proceedings. We focus on encounters between ports of entry along the Southwest border, which account for 99 percent of encounters between all U.S. ports of entry. The primary announced intent of the CHNV program was to reduce the number of unauthorized migrants from those countries, with the main metric of success being fewer such migrants encountered between ports of entry along the Southwest border.

Complicating matters, not all unauthorized migrants cross illicitly between ports of entry. Some unauthorized migrants – migrants who lack a valid visa and are therefore inadmissible – present themselves at a port of entry and ask to be granted entry into the country, often to pursue an asylum claim. As an additional measure of unauthorized migration from the CHNV countries, we examine the number of inadmissible migrants who presented themselves at ports of entry along the Southwest border. Despite what the name may suggest, many inadmissible migrants were granted entry during this period; they were typically given an NTA and began the asylum

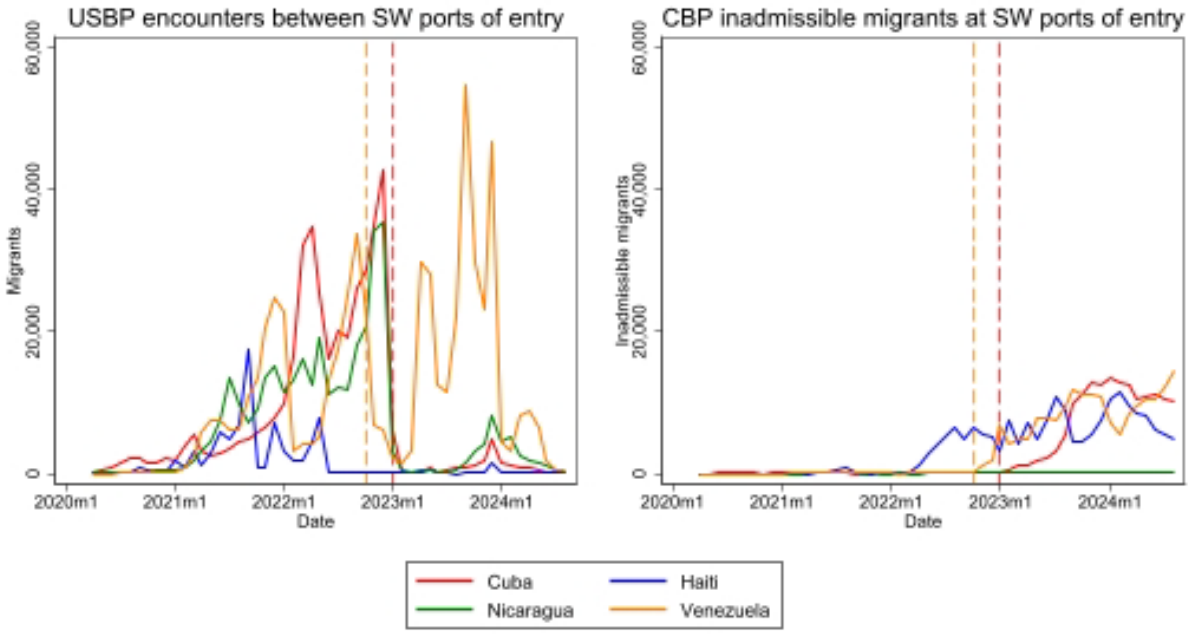
visa, particularly during the relatively short time period that the CHNV program was open. Migrants who can enter legally with a visa will almost certainly choose to do so instead of entering illegally given the cost and risks involved in reaching the United States border by land or sea. Biden-era initiatives aimed at increasing pathways that involved a visa were limited in scope and not exclusive to the CHNV countries (and some of them did not include some of those four countries). For example, the number of refugees admitted from the Western Hemisphere was 6,312 in FY2023 and 25,358 in FY2024 (see www.rpc.state.gov/archives/). The extra allocation of 20,000 H-2B visas was available in FY2023 only to workers from El Salvador, Guatemala, Haiti, and Honduras (https://www.uscis.gov/archive/dhs-to-supplement-h-2b-cap-with-nearly-65000-additional-visas-for-fiscal-year-2023), and in FY 2024 only to workers from Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, and Honduras (https://www.dhs.gov/archive/news/2023/11/03/dhs-supplement-h-2b-cap-nearly-65000-additional-visas-fiscal-year-2024).

process. The Trump administration cited an increase in encounters at ports of entry with inadmissible migrants from the CHNV countries as evidence that the CHNV program was not achieving its goal of reducing pressure on the border.

The left-hand side of Figure 2 shows the number of migrants from the CHNV countries encountered by USBP between ports of entry along the Southwest border.[21] The data begin in April 2020, the month after the Trump administration invoked Title 42, and end in August 2024, the month the CHNV program effectively ended. The dashed vertical lines indicate when the parole program began for Venezuelans and then for the other countries. Encounters with migrants from Cuba, Nicaragua, and Venezuela were generally rising before the parole processes began; as noted earlier, encounters with Haitians peaked well before the program began. Encounters with migrants from Cuba and Nicaragua fell and then remained low after the program began, while encounters with Venezuelans initially fell and then returned to high levels before falling again in early 2024.

[21] Data sources are in the Appendix.

Figure 2. Migrants from CHNV countries between and at ports of entry along U.S.-Mexico border



Note: The left figure shows the number of USBP encounters with migrants between ports of entry along the U.S.-Mexico border, and the right figure shows the number of inadmissible migrants who presented themselves at U.S. land ports of entry along the U.S.-Mexico border. The data are monthly for the period April 2020 through August 2024. The parole process began in October 2022 for Venezuela (orange dashed vertical line) and in January 2023 for Cuba, Haiti, and Nicaragua (red dashed vertical line). The data are from the U.S. Department of Homeland Security, Office of Homeland Security Statistics and Customs and Border Protection.

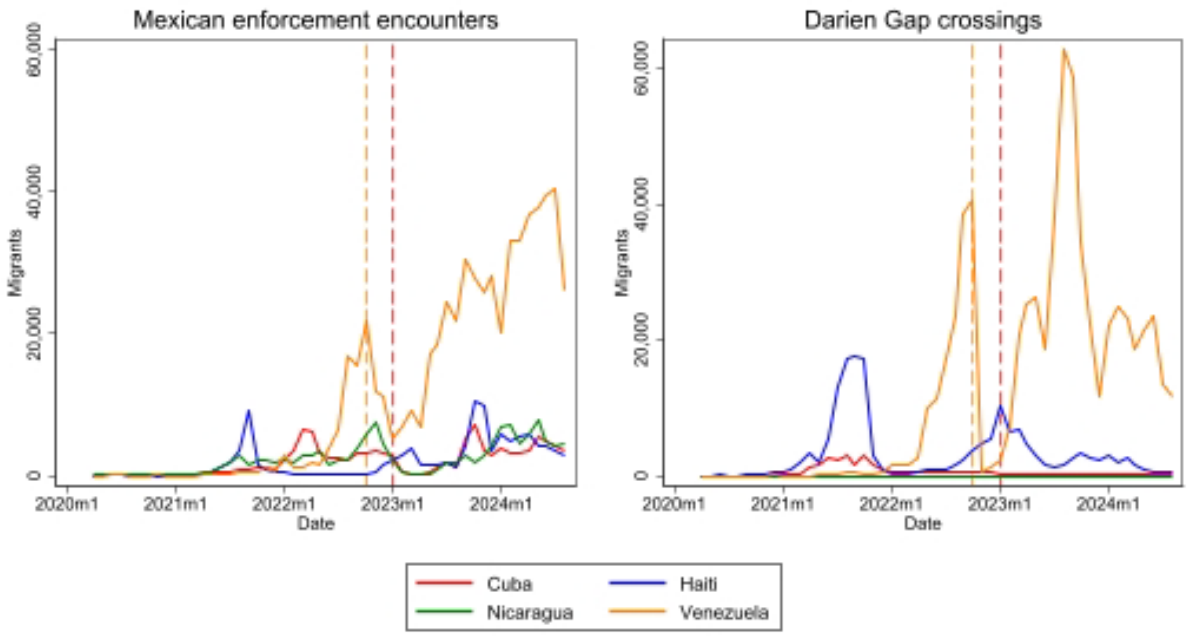
The right-hand side of Figure 2 shows the number of inadmissible migrants from CHNV countries who presented themselves at ports of entry along the Southwest border. These data include only land border-crossing stations, so they do not include CHNV parolees, who flew into the country. The data do include migrants who used CBP One, which launched in January 2023 with very limited initial capacity. As the figure shows, peak encounters at ports of entry are much lower than those between ports of entry. The number of Haitians presenting themselves at ports of entry rose well in advance of the CHNV program and then remained high. CBP reportedly began allowing a large share of Haitians to enter the country via ports of entry to pursue asylum claims in spring 2022 without formalizing the practice and without extending it to migrants from

other countries (Bier 2022). The number of Venezuelans began rising after their parole program began. The number of Cubans rose slowly after their parole program began but eventually reached levels similar to those among Venezuelans. The number of Nicaraguans was low throughout the period we examine.

We also examine migration flows south of the U.S. border to assess whether the CHNV program deterred migrants before they either set out for or reached the United States. One of our measures is migrant encounters by Mexico's National Migration Institute (INM).[22] INM is the federal agency charged with enforcing Mexico's immigration laws, including interdicting migrants and managing detention centers and removals. The Mexican government refers to these encounters as "events with persons of irregular migration status" and provides breakdowns by several countries of origin as well as other characteristics and outcomes. As the left-hand side of Figure 3 shows, the number of Mexican enforcement encounters with Venezuelan migrants fell when the parole process began for that country but later resumed. The number of Haitian migrants encountered within Mexico peaked earlier, much like the number of Haitians encountered by USBP along the U.S.-Mexico border, but rose slightly around the time their parole process began and then reached another peak in late 2023. The number of Cuban and Nicaraguan migrants fell around the time their parole process began but rose later.

[22]For a summary of Mexico's recent immigration enforcement measures, see https://www.congress.gov/crs_external_products/IF/PDF/IF10215/IF10215.30.pdf.

Figure 3. Mexican enforcement encounters and migrants crossing the Darién Gap



Note: The left figure shows the number of Mexican enforcement encounters with migrants within Mexico, and the right figure shows the number of migrants recorded crossing the Darién Gap from Colombia into Panama. The data are monthly for the period April 2020 through August 2024. The parole process began in October 2022 for Venezuela (orange dashed vertical line) and in January 2023 for Cuba, Haiti, and Nicaragua (red dashed vertical line). The Mexican data are from the Secretaria de Gobernacion, Unidad de Politica Migratoria, and the Darién Gap crossings data are from Migración Panama.

Our other measure of flows through the Western Hemisphere is data collected by the government of Panama on the number of migrants crossing through the Darién Gap, which is the jungle between Panama and Colombia. As the right-hand side of Figure 3 shows, the number of Venezuelans passing through the Darién Gap fell sharply when the parole process began but then bounced back and reached a new high before settling down at a relatively high level. Fewer Cubans and Haitians pass through the Darién Gap compared with the number of Venezuelans, but some do if they are already in South America or are able to fly to a South American country

to begin their journey north.[23] The number of Haitians passing through the Gap fell after the parole process began, while the number from Cuba was low before and after the program. Nicaragua lies north of the Darién Gap, so it is not a relevant crossing for Nicaraguans.[24]

Although Figures 2 and 3 suggest how the CHNV program may have affected migration flows for the CHNV countries, many other immigration policy changes also occurred during the time period shown in those figures. We therefore turn to models that allow us to compare the changes in migration for each of the four countries with changes among a similar control group.

Methods

We estimate synthetic difference-in-differences (SDID) models to examine whether the CHNV parole processes affected the number of migrants from those countries compared with other countries. The SDID estimator, developed by Arkhangelsky et al. (2021), combines the synthetic control (SC) and difference-in-differences (DID) methods. The SDID method utilizes unit (country) weights and time weights, the latter of which control for time-specific shocks, to construct a control group that closely matches the treatment group's trend during the pre-treatment period. The SDID method finds unit weights and time weights that minimize the difference between the treatment and control groups' pre-trends. Like the DID method, SDID allows treatment and control units to have different levels prior to the treatment event. Like the SC method, SDID relaxes the parallel-trends assumption by not requiring that parallel pre-trends

[23] By late 2023, Nicaragua and Guyana were the only visa-free countries Cubans could travel to in Central or South America (https://www.wola.org/analysis/developments-cuban-migration-2023/), and Nicaragua was the only visa-free country for Haitians. Nicaragua eliminated visa requirements for Cubans and Haitians in November 2021, allegedly as a weaponization tactic aimed at the U.S. (Chamorro 2024). Mexico, Costa Rica, and Belize imposed visa requirements on Venezuelans in January 2022 and Panama, Honduras, and Guatemala have required them since 2017 (https://www.hrw.org/news/2022/07/05/mexico/central-america-new-visa-restrictions-harm-venezuelans).
[24] The data indicate that only one migrant from Nicaragua crossed the Darién Gap between January 2020 and July 2025. We do not examine flows of Nicaraguan migrants through that region in the rest of our empirical analysis.

hold for each control unit since it reweights units to adjust for differences in pre-treatment trends. Unlike the SC method, the SDID method does not require choosing covariates used to construct the synthetic control, which reduces concerns about researcher subjectivity. The synthetic control group that the SDID method constructs can differ for each country and each measure of migration flows we examine. Previous research using similar methods to examine migration patterns includes Abreha et al. (2025), Hu and Winters (2025), and Wang et al. (2025).

We estimate separate SDID models and event studies for each of our treatment countries and each measure of migration flows since their pre-trends have different patterns, as shown in Figures 2 and 3. This enables each treatment country and each measure of migration flows to have a different synthetic control, which results in better matching of pre-trends. The SDID method with one treatment unit and one treatment – the CHNV program – first assigns weights ω_i to the countries in the donor pool by solving:

$$(\widehat{\omega}_0, \widehat{\omega}^{sc}) = \arg\min_{\omega_0,\omega} \sum_{t=1}^{T_0-1}(\omega_0 + \sum_{i=2}^{N} \omega_i \ln \text{Migrants}_{it} - \ln \text{Migrants}_{1t})^2, \quad (1)$$

where $i = 1$ is the treated CHNV country, $t = T_0$ is the treatment period (the month that country's parole process began), and $i = 2,\ldots, N$ indexes the countries in the donor pool. The weights cannot be negative ($\omega_i \geq 0$), and the weights sum to one ($\sum_{i=2}^{N} \omega_i = 1$). The intercept term ω_0 absorbs any level difference, so the matching is on pre-trends, not levels. Solving equation (1) gives the weighted combination of countries in the donor pool that best matches the treated country's pre-treatment trend for a given measure of migration flows.

The SDID method then finds the time weights $\hat{\lambda}_t$ that solve

$$(\hat{\lambda}_0, \hat{\lambda}^{pre}) = \arg\min_{\lambda_0,\lambda} \sum_{i=2}^{N}(\lambda_0 + \sum_{t=1}^{T_0-1} \lambda_t \ln \text{Migrants}_{it} - \frac{1}{(T-T_0)} \sum_{t=T_0}^{T} \ln \text{Migrants}_{it})^2, \quad (2)$$

where $\lambda_t \geq 0$ and $\sum_{t=1}^{T_0-1} \lambda_t = 1$. The time weights upweight the pre-treatment periods that are the most similar to the average across the post-treatment period. This second step distinguishes

the SDID method from the synthetic control method, which treats all pre-treatment periods equally.

The SDID estimator combines the unit weights $\hat{\omega}_i$ and time weights $\hat{\lambda}_t$ to estimate the average treatment effect on the treated (ATT). First, the method creates the synthetic control outcome in each period t using the fixed unit weights for the donor pool countries created in equation (1), or

$$\ln \widehat{\text{Migrants}}_{sc,t} = \sum_{i=2}^{N} \omega_i \ln \text{Migrants}_{it}. \quad (3)$$

The treatment effect for each period *t* is then the difference between the measure of migration flows in the treatment country and its synthetic control:

$$\hat{\tau}_t = \ln \text{Migrants}_{1t} - \ln \widehat{\text{Migrants}}_{sc,t}. \quad (4)$$

Those period-by-period differences create an event study that shows how actual migration flows for the treated country differ from flows for its synthetic control each period; they do not incorporate the time weights, only the donor pool unit weights.[25] The ATT estimate is the average of these period-by-period differences that incorporates both sets of weights:

$$\hat{\tau}^{\text{SDID}} = \left(\frac{1}{T-T_0}\sum_{t=T_0}^{T} \ln \text{Migrants}_{1t} - \sum_{t=1}^{T_0-1} \hat{\lambda}_t \ln \text{Migrants}_{1t}\right) -$$
$$\left(\frac{1}{T-T_0} \sum_{t=T_0}^{T} ln\, \widehat{Migrants}_{sc,t} - \sum_{t=1}^{T_0-1} \hat{\lambda}_t \ln \widehat{\text{Migrants}}_{sc,t}\right). \quad (5)$$

The first term in parentheses is the before-and-after difference for the treated country, where the pre-treatment periods are weighted using the time weights, $\hat{\lambda}_t$, estimated in equation (2). The second term is the analogous before-and-after difference for the synthetic control. Subtracting the two removes common time trends, yielding the ATT. We use the placebo method to estimate the

[25] Unlike conventional DID or two-way fixed effects event study models, the SDID event study model does not require setting a baseline time period (typically *t* = -1) equal to zero.

standard errors since we have only one treated country in each model, and we present bootstrapped standard errors for the event studies and the ATTs.

The time period we examine begins in April 2020, right after the start of the pandemic as it marked a radical shift in U.S. border policy. We end our analysis in August 2024, when the Biden administration suspended the CHNV program for Cuba, Haiti, and Nicaragua, a month after suspending it for Venezuela. The pre-treatment period for Venezuela is 30 months (April 2020 through September 2022), and the post-treatment period is 23 months (October 2022 through August 2024). For Cuba, Haiti, and Venezuela, the pre-treatment period is 33 months (April 2020 through December 2022), and the post-treatment period is 20 months (January 2023 through August 2024).

The donor pool for our synthetic controls includes all non-CHNV countries for which data are available. For encounters between ports of entry, there are 96 non-CHNV countries plus "other" in the donor pool.[26] For inadmissible migrants at ports of entry, there are 46 non-CHNV countries plus other. For Mexican enforcement encounters, there are only four countries (Colombia, Ecuador, El Salvador, and Guatemala) plus other in the donor pool because the Mexican data break out only eight countries in addition to reporting a total. For crossings through the Darién Gap, there are 61 non-CHNV countries plus other.

The SDID method relies on several key assumptions. First, it assumes no interference, the Stable Unit Treatment Value Assumption (SUTVA). In our case, this requires that changes in migrant flows from CHNV countries did not affect migrant flows from other countries. This assumption is violated if, for example, USBP had more encounters with non-CHNV migrants

[26] The SDID models estimated here assign a positive weight to a large number of countries in the donor pool. For example, the SDID models that examine USBP encounters with migrants between ports of entry along the U.S.-Mexico border (shown in Figure 4) assigned positive weights to 79 countries to create the synthetic control for Cuba, 17 countries for Haiti, 42 countries for Nicaragua, and 20 countries for Venezuela.

because the CHNV program caused encounters with migrants from CHNV countries to decline. If this assumption is violated in that manner, our results overstate the impact of the CHNV program. Second, SDID assumes weighted parallel trends, or that absent the CHNV program, average migrant flows from CHNV countries would have followed the same trajectory as the weighted combination of the control countries and pre-treatment months. Third, it assumes that the group and time fixed effects sufficiently control for time-invariant differences across units and for shocks that are common to both treatment and control groups in a given month. Although these assumptions are inherently untestable, we perform several robustness and placebo checks to examine whether they appear reasonable. We also report ATTs using a conventional DID model, which does not have unit or time weights – every country in the donor pool is treated equally, and every pre-treatment period receives the same weight. Differences between the SDID ATTs and the conventional DID ATTs are consistent with heterogeneity in the donor pool and/or different pre-trends, either of which makes the SDID model a better estimator in this case.

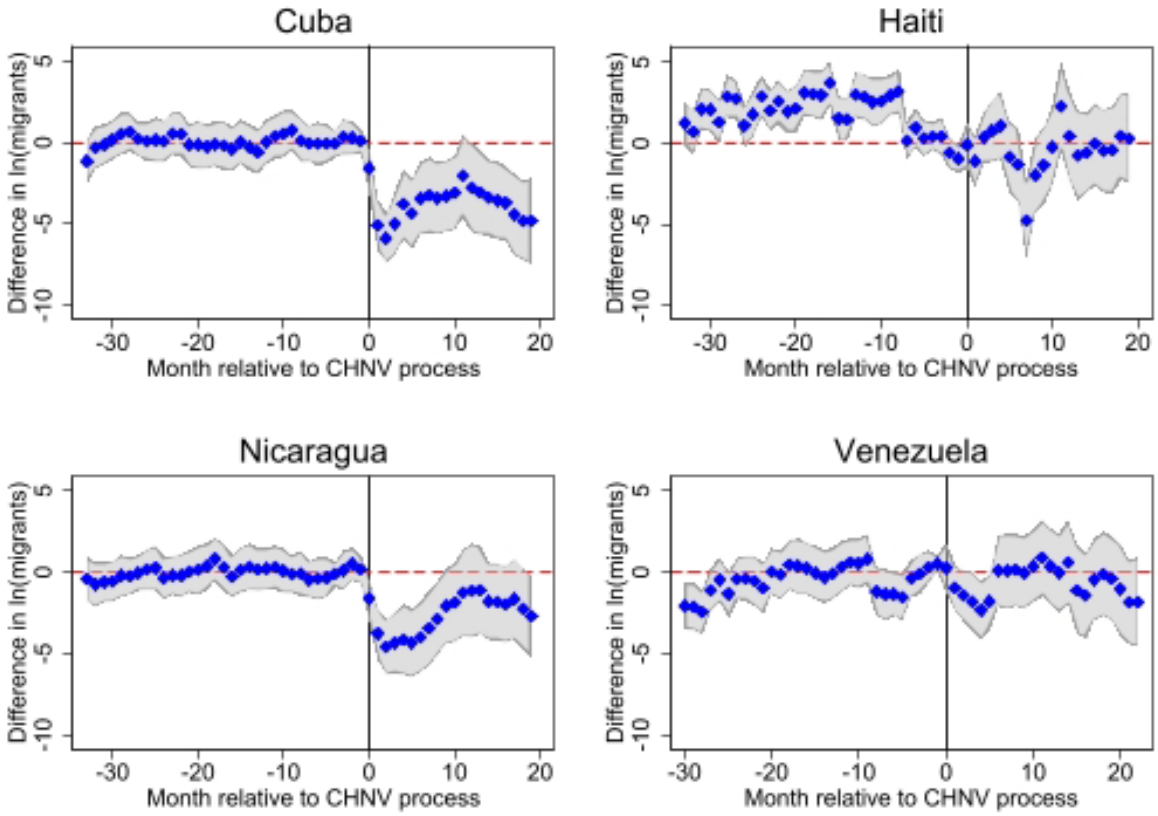
Results

Effects on Encounters with Illicit Border Crossers

The number of migrants from Cuba and Nicaragua illicitly crossing the Southwest border fell significantly relative to their synthetic controls following the implementation of the CHNV program, as shown in Figure 4. Those drops eased over time, and the drop for Nicaragua was not statistically significant after nine months. There was also an initial decrease for Venezuelans after the program began, but that decrease ended within six months. For Haitians, encounters between ports of entry were significantly below the synthetic control during only one month – August 2023 – and there is no clear evidence of a negative post-treatment shift or trend. Instead,

encounters with Haitian migrants appear to have fallen relative to the synthetic control in May 2022, about seven months before the parole program began.

Figure 4. Synthetic difference-in-differences estimates of effect of CHNV program on number of US Border Patrol encounters with migrants between ports of entry along U.S.-Mexico border



Note: The figures show difference-in-differences estimates for the natural log of the number of encounters and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Most of the SDID models do not indicate a significant difference in pre-trends, with the exception of Haiti. As the panel for Haiti in Figure 4 shows, the SDID model does not construct a synthetic control that has a pre-trend similar to Haitian migrant encounters between ports of

entry during most of the pre-treatment period. However, there are several reasons to believe the CHNV program did not have a significant effect on encounters with Haitians between ports of entry. As Figure 2 shows, USBP encounters with Haitian migrants between ports of entry peaked in mid-2021 and hovered near zero beginning in mid-2022. Meanwhile, the number of Haitians presenting themselves at ports of entry along the border began rising in early 2022. These changes in Haitian migration flows occurred well in advance of the CHNV program, and they appear consistent with Haitians substituting away from crossing illegally to trying to enter at ports of entry as they learn that they can gain entrance that way (Bier 2022; Clemens 2024). The drop in Figure 4 for Haiti occurs about 10 months before the CHNV program began and coincides with those changes. We obtain results similar to Figure 4 if we control for the number of migrants with a CBP One appointment (Appendix Figure 2); CBP One was introduced well after CBP reportedly began allowing Haitians to enter at ports of entry, so it is not surprising that it does not account for the timing of the change in Haitian migration patterns.[27] We also obtain similar results if we examine national encounters between ports of entry or control for Title 42 expulsions of Haitians along the border (Appendix Figures 3 and 4, respectively). All of these event studies show a similar drop in encounters with Haitians between ports of entry about 10 months before the CHNV program began, and then no clear evidence of a relative change after the parole program began. Lastly, the ATT calculated using the SDID method does not necessarily weight all of the pre-treatment months equally; for Haiti, the SDID model assigned positive weights only to the first 3 months and 3 of the last 4 months before the parole program

[27] The CBP One appointment data are from the same source as the encounters data (see the Appendix for sources), but they are only available for 10 countries, which include Cuba, Haiti, and Venezuela but not Nicaragua. The SDID models in Appendix Figure 2 therefore only use the seven non-CHNV countries as the donor pool.

began when creating the synthetic control for the ATT on encounters between ports of entry, reducing concerns about the poor fit in the pre-trend.

The results for encounters between ports of entry are generally robust to using other measures. The results are similar to Figure 4 if we include USBP encounters between all ports of entry nationally, not just those along the U.S.-Mexico border (Appendix Figure 3). This robustness is more important for Cubans and Haitians since some of them arrived by sea and were encountered by USBP in the Miami, New Orleans, or Ramey, Puerto Rico, sectors. Few migrants from CHNV countries try to cross along the U.S.-Canada border, but any who encountered USBP while doing so would be included in the national totals as well. The results are also similar if we control for Title 42 expulsions of migrants who were encountered by USBP along the Southwest border (Appendix Figure 4). The more migrants who were expelled back to Mexico, the higher the total number of encounters may have been since expelled migrants typically tried to cross the border again (Chishti et al. 2024b). Nonetheless, Title 42 expulsions do not account for the patterns observed in Figure 4.

Effects at Ports of Entry

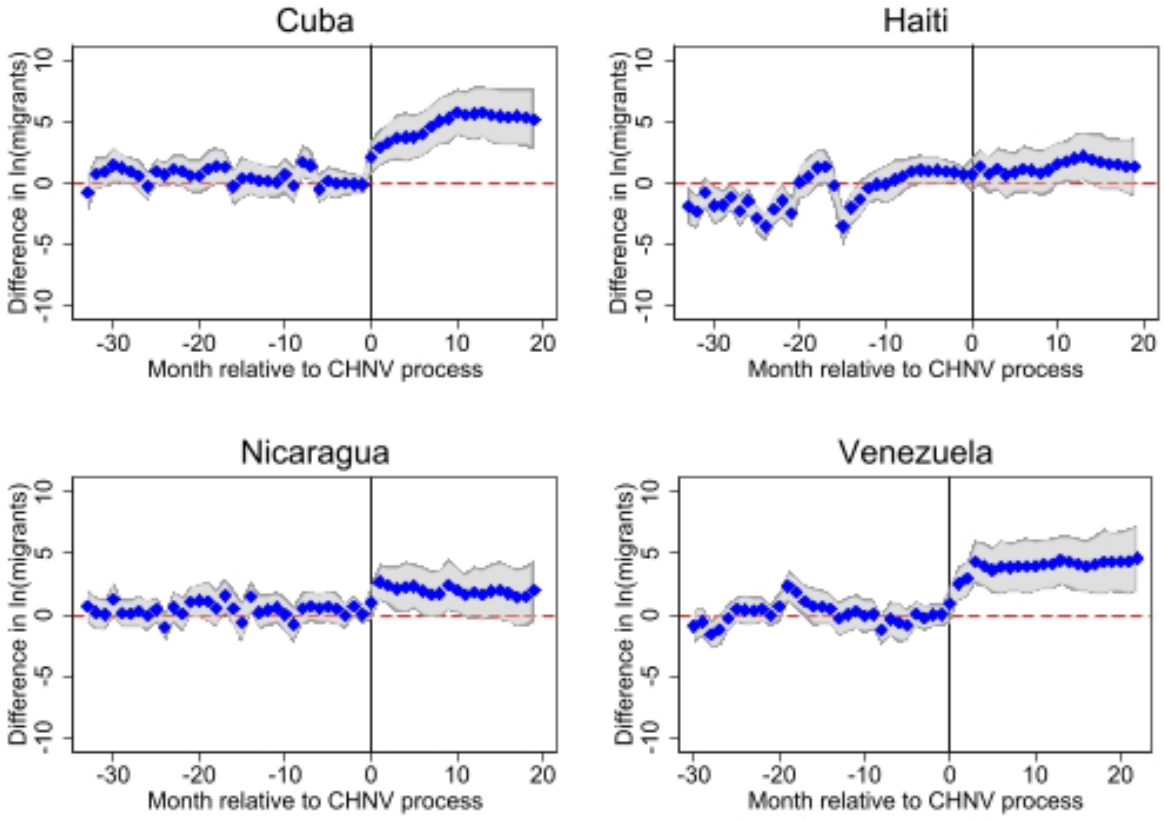
Some CHNV migrants who were expelled after crossing illicitly between ports of entry or were deterred from even attempting such a crossing may have tried entering at ports of entry. The number of migrants who presented themselves at ports of entry along the U.S.-Mexico border and asked to be allowed into the country therefore may have increased after the creation of the parole program enabled USBP to expel more CHNV migrants to Mexico, or at least threaten to do so. In addition, migrants who were misinformed about the details of the parole program may have gone to a port of entry and asked to be allowed in under the program. We

therefore look at the number of inadmissible migrants at land ports of entry along the Southwest border.

The results suggest that the number of migrants from three of the CHNV countries at ports of entry increased after the parole program began. As Figure 5 shows, the number of inadmissible migrants from Cuba and Venezuela at ports of entry along the Southwest border swelled when their parole program began and remained elevated through the end of the program. The immediate increase for Venezuelans is notable since their parole program began a few months before the launch of CBP One. The number of inadmissible migrants from Nicaragua at ports of entry rose as well, but the change is only marginally significant after a year. The number of inadmissible Haitian migrants did not change significantly after the CHNV program began, although the synthetic control has a notably more similar pre-trend in the year before the program began than in Figure 4.[28] The SDID results show that the number of Haitian migrants at ports of entry began rising more than a year before the CHNV parole program began.

[28] The SDID model puts positive weight on November 2020, January 2021, and September through December 2022 when constructing the synthetic control for Haiti.

Figure 5. Synthetic difference-in-differences estimates of effect of CHNV program on number of inadmissible migrants at ports of entry along U.S.-Mexico border



Note: The figures show difference-in-differences estimates for the natural log of the number of inadmissible migrants and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

The results are generally similar if examining enforcement encounters with inadmissible migrants (which do not include migrants with parole) at all ports of entry, not just land ports of entry along the U.S.-Mexico border (Appendix Figure 5).[29] The results are also robust to controlling for Title 42 expulsions (Appendix Figure 6).

[29] The increase in inadmissible migrants from Nicaragua is smaller and no longer significantly different from zero within a few months after the CHNV program began when including all ports of entry.

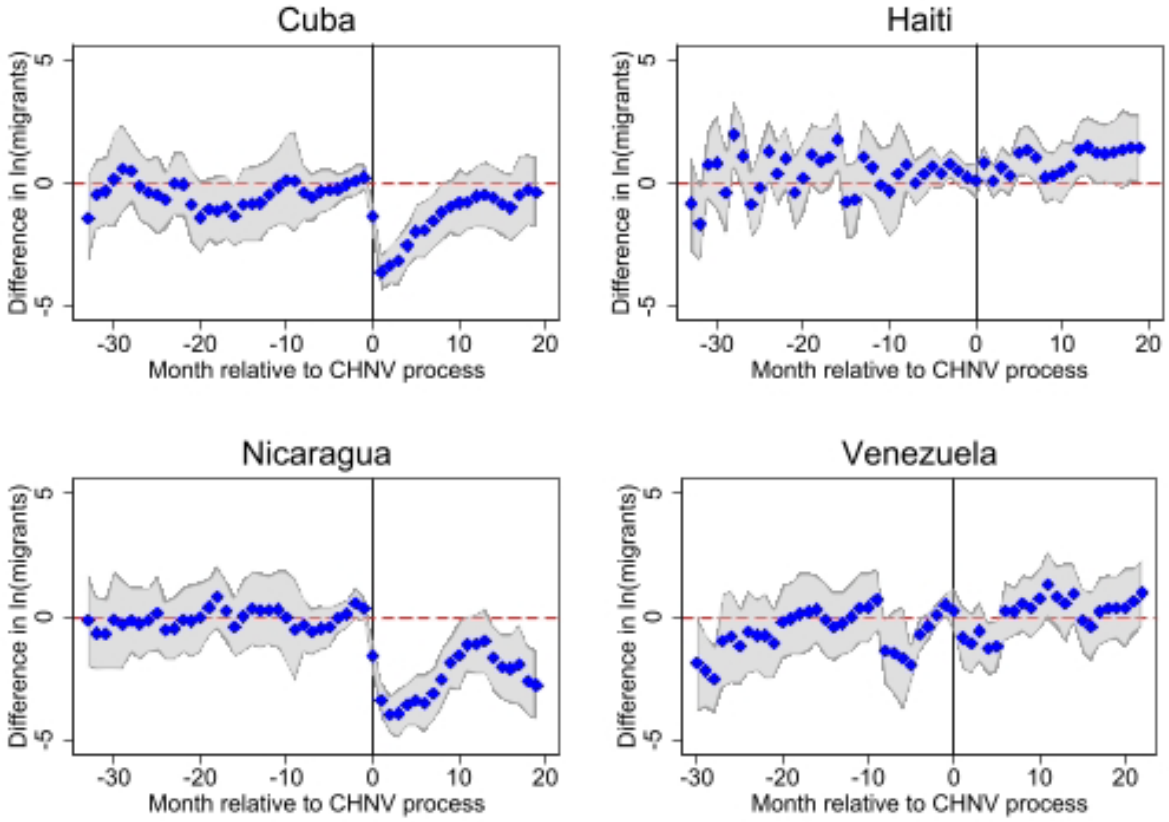
Total Effects along the Border

Since some migrants may have substituted between attempting to cross between ports of entry and presenting themselves at ports of entry, we also examine the total number of CBP encounters with migrants along the U.S.-Mexico border, which is the sum of encounters between ports of entry and inadmissible migrants at ports of entry. Like all our data, these are not necessarily counts of unique migrants since DHS personnel may have encountered the same migrant multiple times; the counts are a proxy for the number of migrants along the border and an indication of how much pressure DHS personnel faced along the border. These counts do not include migrants who presented themselves with a valid visa, such as Mexican agricultural workers entering at U.S. land ports with H-2A visas.

Figure 6 shows the results for our proxy for all CHNV migrant activity along the U.S.-Mexico border. For Cubans and Nicaraguans, there is a significant drop in total migrants from those countries along the border for at least several months after the parole program began. The drop in encounters between ports of entry shown in Figure 4 dominates the increase in inadmissible migrants at ports of entry shown in Figure 5. For Haitians, there is a marginally significant increase in total migrant activity along the border in some months. For Venezuelans, there is an upward trend in the five months right before the CHNV program began, and that trend ends once the program starts. However, there is no clear evidence of a significant sustained drop in migrants along the border relative to the synthetic control. The results are again robust to controlling for Title 42 expulsions (Appendix Figure 7).[30]

[30] Appendix Figure 8 shows the share of migrants along the border who were expelled under Title 42 for the CHNV countries. Title 42 expulsions of Haitians fell to near zero a few months before the CHNV program began, whereas they spiked for Cubans, Nicaraguans, and Venezuelans when the program began.

Figure 6. Synthetic difference-in-differences estimates of effect of CHNV program on total number of Customs and Border Protection encounters with migrants along U.S.-Mexico border



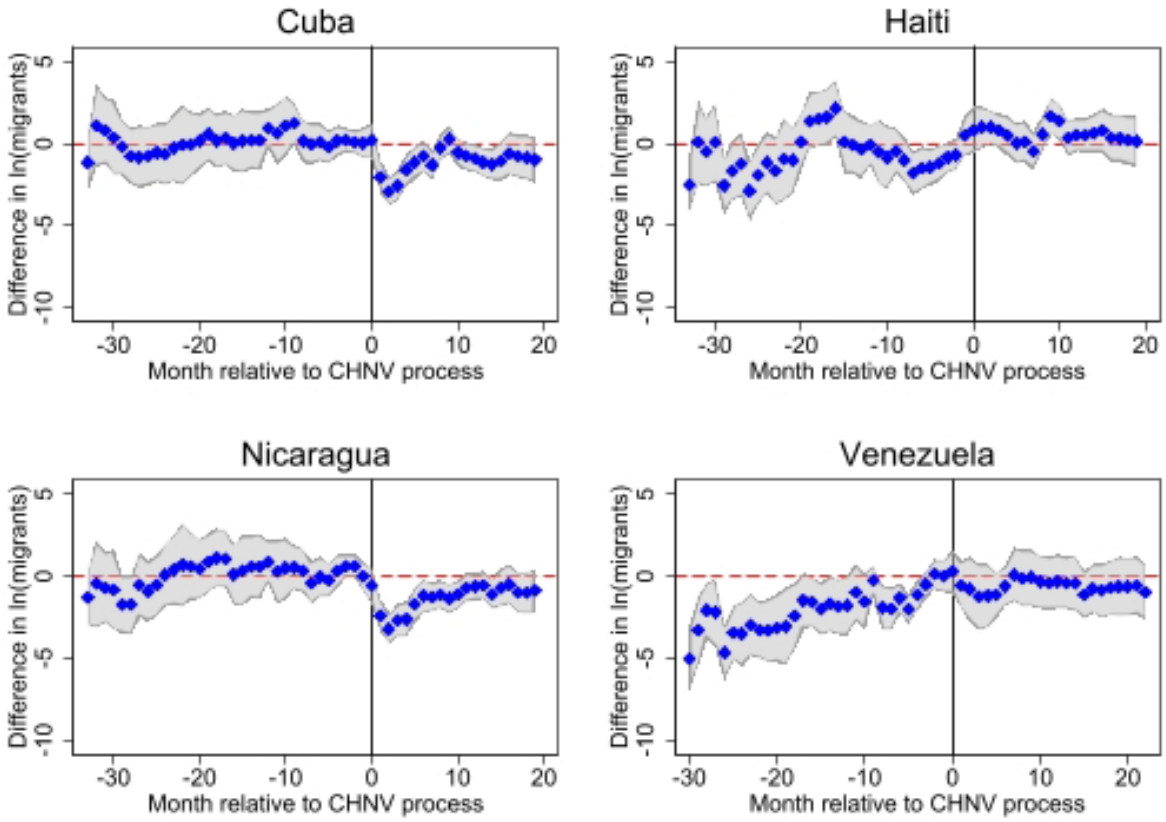
Note: The figures show difference-in-differences estimates for the natural log of the number of encounters between ports of entry plus inadmissible migrants at ports of entry along the U.S.-Mexico border and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Effects on Migration South of the Border

Turning to data on enforcement encounters in Mexico, the number of migrants from Cuba and Nicaragua encountered by Mexican authorities decreased when the CHNV program began. However, as shown in Figure 7, both decreases ameliorated over time. For Haitians, the figure suggests there was a relative increase in the number of migrants encountered within Mexico for a couple of months during the CHNV program, although we caution that the pre-treatment data are

again quite noisy. There was no significant change for Venezuelans, who were by far the nationality with the highest number of encounters within Mexico. However, Figure 7 suggests a positive pre-trend for Venezuela, so the leveling off relative to the synthetic control after the parole process began could therefore be viewed as a relative drop in encounters with Venezuelan migrants within Mexico – the upward trend appears to have ended after the program began.

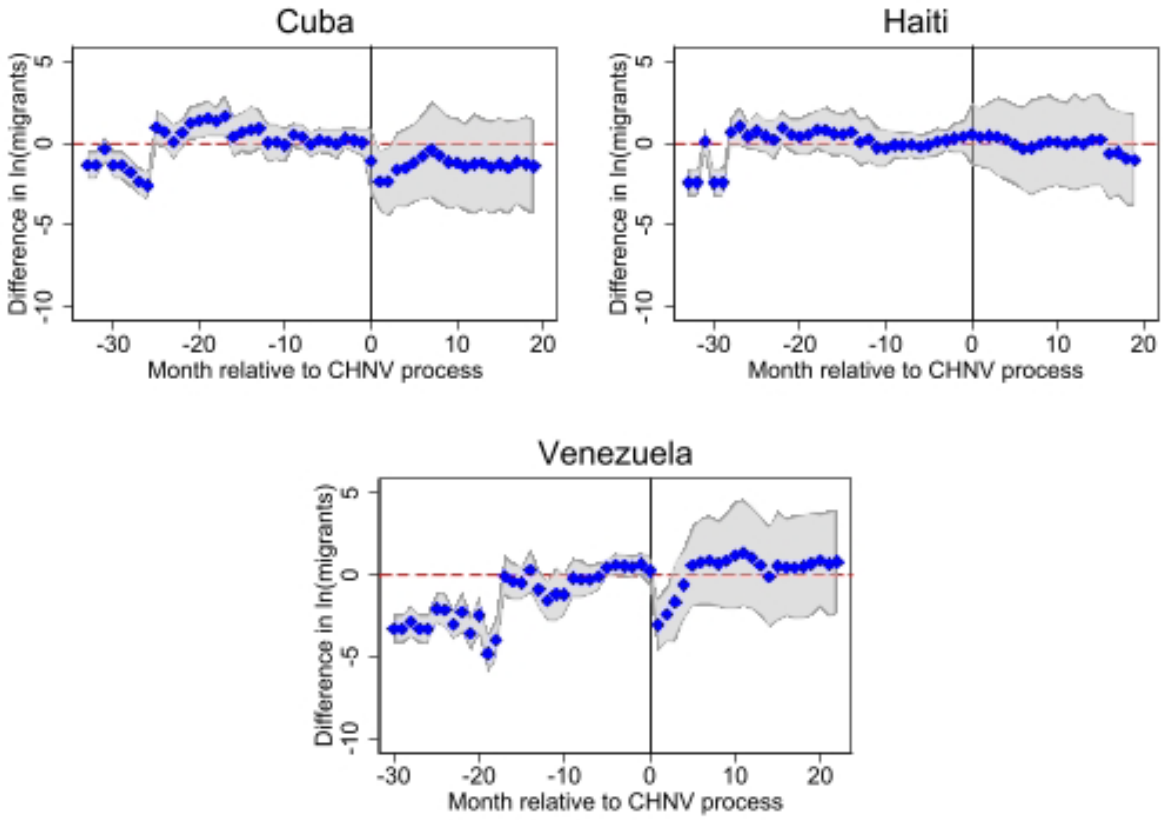
Figure 7. Synthetic difference-in-differences estimates of effect of CHNV program on number of Mexican enforcement encounters with migrants



Note: The figures show difference-in-differences estimates for the natural log of the number of encounters and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Lastly, the number of migrants from Cuba and Venezuela crossing the Darién Gap fell right after the parole processes were created, but neither drop persisted at a statistically significant level, as shown in Figure 8. The number of migrants from Haiti crossing through the Gap did not change relative to its synthetic control.

Figure 8. Synthetic difference-in-differences estimates of effect of CHNV program on number of migrants crossing the Darién Gap



Note: The figures show difference-in-differences estimates for the natural log of the number of crossers and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba and Haiti and in October 2022 for Venezuela.

Effects on Total Number of Migrants

The stated goals of the CHNV program were to reduce unauthorized border crossings and migration throughout the Western Hemisphere. The average treatment effect on the treated (ATT) estimates from the SDID models are one way to measure whether the program achieved those goals. The top row of Table 1 presents the ATT estimates for encounters between ports of entry along the U.S.-Mexico border – these are the ATT estimates that correspond to the event studies shown in Figure 4 but incorporate the time weights as well as the unit weights. For Cubans and Nicaraguans, the program appears to have succeeded in reducing unauthorized crossings, as proxied by USBP encounters with migrants. For Haiti and Venezuela, in contrast, the program did not significantly reduce border crossings.

Table 1. Average treatment on the treated estimates of effects of CHNV program

	Cuba	Haiti	Nicaragua	Venezuela
Encounters between U.S. ports of entry along Southwest border	-3.745*** (0.841)	-0.411 (0.923)	-2.643*** (0.864)	-0.605 (0.844)
Inadmissible migrants at U.S. ports of entry along Southwest border	4.666*** (0.830)	1.314* (0.753)	1.897** (0.829)	3.862*** (0.880)
Total migrants along Southwest border, both at and between U.S. ports	-1.388*** (0.486)	0.894** (0.431)	-2.448*** (0.490)	0.132 (0.512)
Mexican enforcement encounters	-1.049** (0.428)	0.562 (0.538)	-1.323*** (0.430)	-0.592 (0.791)
Darién Gap crossings	-1.324 (1.206)	-0.077 (1.206)	—	0.225 (1.241)
National total between and at U.S. ports of entry, including CHNV parolees	-0.274 (0.324)	1.188*** (0.309)	-0.636* (0.345)	0.093 (0.330)

Note: Shown are estimated average treatment on the treated effects from synthetic difference-in-differences models. The dependent variable is the natural log of the variable indicated. Standard errors estimated using the placebo method with 500 bootstrap replications are in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

More broadly, there is little evidence that the program reduced migration flows. The ATT estimates of the number of inadmissible migrants at ports of entry along the U.S.-Mexico border – the estimates corresponding to Figure 5 – are positive for all four countries (Table 1, row 2). Combining encounters with migrants between ports of entry and inadmissible migrants at ports of entry along the U.S.-Mexico border (as shown in Figure 6), the ATT estimates indicate a negative impact on Cuban and Nicaraguan migrants (row 3). The ATT suggests a positive effect on the total number of Haitian migrants along the border, while the total number of Venezuelan migrants did not change significantly. Turning to migration flows south of the border, the ATT estimates for Mexican enforcement encounters are negative for Cuba and Nicaragua (row 4), and none of the ATT estimates for crossing the Darién Gap is significantly different from zero (row 5).

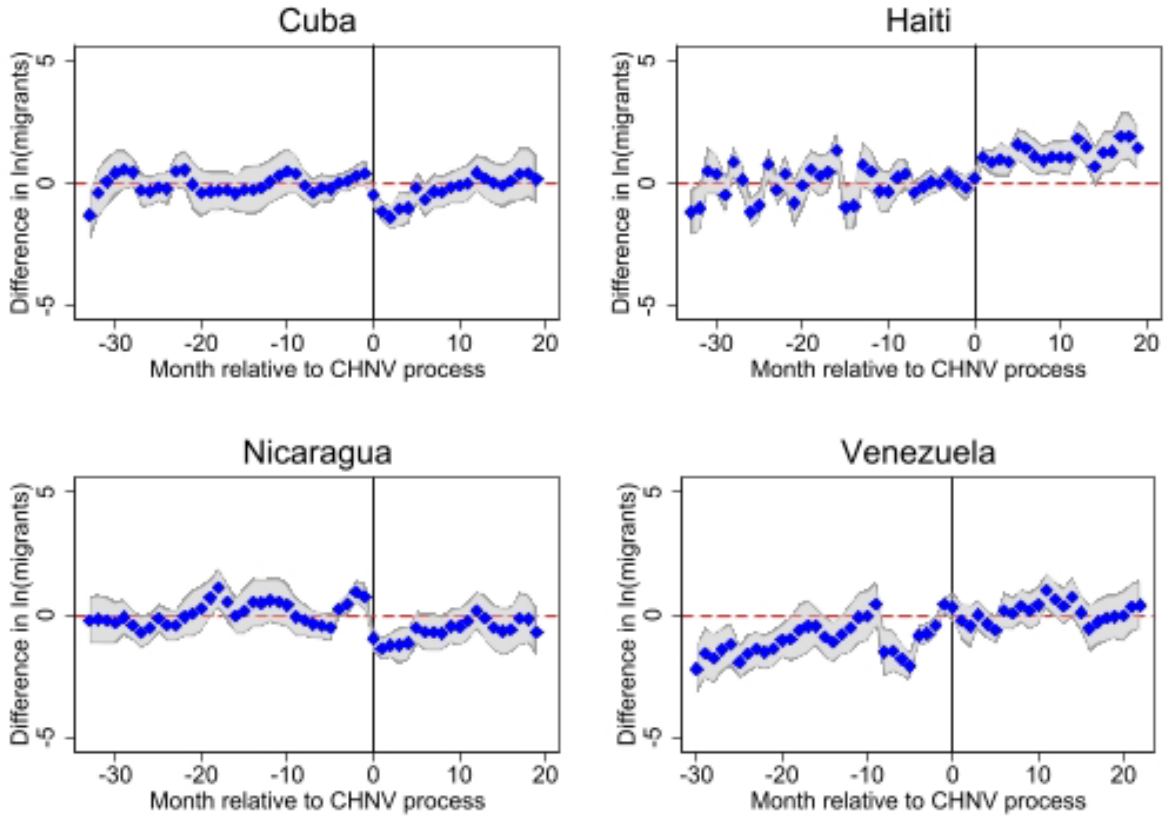
Another metric of the program's impact is whether the total number of unauthorized migrants from CHNV countries changed. The program may have diverted some migrants from trying to enter along the U.S.-Mexico border, either at or between ports, to entering the country by flying into the interior, without changing the total number of migrants. Alternatively, it could have increased the total number of migrants if CHNV parolees would not have attempted to enter along the U.S.-Mexico border but were willing to migrate if they could fly and be granted entry. We therefore examine the total number of Customs and Border Protection encounters with migrants without a valid visa; the data are the sum of encounters between all ports of entry and inadmissible migrants at all ports of entry nationwide, and they include the CHNV parolees.[31]

[31] The donor pool for the SDID models is the other top 46 origin countries during the time period we examine.

The event studies are shown in Figure 9, and the ATT estimates are reported in the bottom row of Table 1.

As Figure 9 shows, there was a short-term reversal of the upward trend for Cubans and a significant decrease in the total number of Cuban migrants for about five months after the parole program began. After that, total CBP encounters with Cuban migrants were similar to the synthetic control. The ATT estimate for Cubans is not significantly different from zero. For Haitians, the total number of migrants increased when the parole program began and remained significantly above the synthetic control for the duration of the program. This is strikingly different from the earlier U.S. results, which showed a change in Haitian migration patterns well in advance of the program and no clear change after the program began. The difference is presumably due to including the CHNV parolees, who were not included in the earlier measures of migrants between or at ports of entry. Haitians dominated the CHNV program, accounting for over 211,000 of the 530,000-plus migrants paroled in via the program. The program increased the total number of CBP encounters with Haitian migrants, as the positive ATT estimate indicates. The pattern for Nicaraguans is similar to Cubans, and the estimated ATT is negative, suggesting that the program led to an overall drop in the number of Nicaraguans trying to enter the United States without a valid visa. The SDID model does not indicate a significant impact on the total number of CBP encounters with Venezuelan migrants, although the upward trend evident right before the start of the program does end. The ATT estimate for Venezuelans is not significantly different from zero.

Figure 9. Synthetic difference-in-differences estimates of effect of CHNV program on total number of Customs and Border Protection encounters with migrants, nationwide



Note: The figures show difference-in-differences estimates for the natural log of the number of migrants processed by Customs and Border Protection as inadmissible migrants at ports of entry or encountered between ports of entry and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba and Haiti and in October 2022 for Venezuela.

Placebo Estimates and Further Robustness

The SDID method identifies effects by comparing the treatment unit(s) to the synthetic control. It is possible that some countries included in the donor pool also experienced changes in their migration flows around the time the parole program began and the relative changes we estimate are due to some other factor, not the CHNV program. To investigate this possibility, we estimated placebo models. Following Arkhangelsky et al. (2021), we ran the SDID model for each of the countries that make up the donor pools for the synthetic controls underlying Figures 4

and 5. Specifically, we assigned each country in the donor pools, one by one, treatment status as of January 2023 and then used the remaining countries to estimate the SDID models; the regressions exclude observations for the CHNV countries. If there was some factor other than the CHNV program that caused the significant ATTs we observe, we would expect some other countries to have similar ATTs. This does not appear to be the case. Instead, the placebo estimates of the ATT are near zero for most countries in the donor pool. Further, the estimated ATTs for Cuba and Nicaragua with regard to USBP encounters between ports of entry are clear outliers (Appendix Figure 9), as are the estimated ATTs for Cuba and Venezuela with regard to encounters with inadmissible migrants at ports of entry (Appendix Figure 10).[32] The placebo estimates are consistent with the CHNV program causing the observed changes in migrant flows along the border for those countries.

We also estimated the SDID models using a donor pool limited to other major origin countries of unauthorized migrants along the U.S.-Mexico border, namely, Mexico, the Northern Triangle countries of El Salvador, Guatemala, and Honduras, plus Colombia and Ecuador.[33] Most of the significant ATTs for unauthorized migrants reported in Table 1 are robust to limiting the donor pool to other major origin countries; there are some changes in statistical significance, but the overall patterns of the results are similar (see the second row of each panel in Appendix Table 1). We continue to find our main results that encounters with Cubans and Nicaraguans

[32] In Appendix Figure 9, the outlier on the right is Chad, which has a weight of 0.026 in the SDID model underlying Figure 4 for Haiti, and a weight of 0 for the other 3 countries. In Appendix Figure 10, the outlier on the left is Ghana, which has a weight of 0.018 in the SDID model underlying Figure 5 for Nicaragua, and a weight of 0 for the other 3 countries.

[33] We do not estimate the model of enforcement encounters in Mexico with the limited donor pool since those countries (except Mexico and Honduras, and plus "other") compose the donor pool for the SDID models examining encounters in Mexico. Using other major origin countries limits the number of observations with zero migrants (to which we add one before taking the natural log).

between ports of entry fell, encounters with Cubans, Haitians, and Venezuelans at ports of entry rose, and the total number of Haitian migrants at and between all ports of entry nationally rose.

Lastly, we estimated ATTs using conventional synthetic control and difference-in-differences models. The synthetic control model assigns weights to countries in the donor pool using equation (1) but does not assign time weights. The difference-in-difference model takes the simple average across all countries in the donor pool each period. Using either method, we continue to find that encounters with Cubans and Nicaraguans between ports of entry fell, but we also find that encounters with Haitians between ports of entry fell (see Appendix Table 1, panel A). We continue to find that encounters with Cubans, Haitians, and Venezuelans at ports of entry rose, and they also rose for Nicaraguans in the SC and SDID models but not the DID model (Appendix Table 1, panel B). We continue to find a positive ATT for the total number of Haitian migrants nationally, but we also find a positive ATT for the total number of Venezuelans (Appendix Table 1, Panel F). We also find some evidence of an increase in Haitians and Venezuelans crossing the Darién Gap, and a drop in Mexican enforcement encounters with Haitians but an increase in Mexican enforcement encounters with Venezuelans. Again, differences between the SDID results and those from SC and DID models point to the importance of the unit and/or time weights in creating a control group that resembles the treatment group as closely as possible.

Discussion and Conclusion

The CHNV program admitted over 530,000 migrants to the United States for up to two years, with stated goals of reducing attempts by migrants from those countries to enter the country illegally and reducing flows throughout the Western Hemisphere. The results here

indicate that claims made by both the Biden and Trump administrations about the impact of the CHNV parole program were partially correct. Encounters between ports of entry with migrants from the four targeted countries generally fell, as claimed by the Biden administration. However, the drop was sustained throughout most of the program only for Cubans and Nicaraguans. The Biden administration also claimed that the number of migrants transiting through Mexico fell. We find that Mexican apprehensions of unauthorized migrants fell only for Cubans and Nicaraguans; the synthetic difference-in-differences model suggests they rose for Haitians. The Trump administration, meanwhile, claimed that the number of migrants without a visa presenting themselves at border ports of entry rose. We find clear evidence in support of this claim for Cubans and Venezuelans, and, for a shorter period, Nicaraguans, but not for Haitians. The parole program appears, on balance, to have reduced pressure between ports of entry, but increased it at ports of entry, with effects varying somewhat across countries.

One potential contributing factor to the differential effects across countries is Temporary Protected Status (TPS). An administration can designate migrants already in the United States eligible for TPS, which gives them protection from removal and work authorization for up to 18 months at a time. As noted earlier, the Biden administration redesignated Haiti and Venezuela for TPS while the CHNV program was operating, allowing recent entrants to apply. The Biden administration had also redesignated Haiti for TPS in May 2021 and December 2022 and Venezuela in March 2021 before the parole program began. Those earlier TPS programs for migrants from Haiti and Venezuela may have created an expectation that TPS would also be offered to future migrants from those countries, which indeed proved to be the case for many of them. Migrants from those two countries may therefore have been more willing than other migrants to try to cross the border illegally if they could not qualify for CHNV or did not want to

wait in the CHNV queue.[34] The Biden administration did not offer TPS to migrants from Cuba and Nicaragua, the two countries that saw a sustained decrease in encounters between ports of entry after the CHNV program began.

To the extent that migrants undergo more screening at ports of entry than between ports of entry – and, of course, the fact that CHNV parolees passed a background check and had a financial sponsor – the CHNV program did help make the Southwest border more secure and flows more manageable. Our results also point to the importance of international cooperation. The ability to expel migrants to Mexico without allowing them to apply for asylum was a key component of the program while Title 42 was in place, and the possibility of an expulsion back to Mexico may have deterred some migrants from attempting to cross the border.

Although the CHNV program has been terminated, the data point to several lessons for policymakers when creating new humanitarian programs for migrants. Such programs can reduce unauthorized border crossings, but they may not reduce the total number of migrants seeking to enter the country unless they are very large relative to the origin countries' populations or are coupled with a credible commitment to turn away all other migrants presenting themselves at the border to ask for asylum. Moreover, international cooperation is an important component of success, as is taking into consideration other programs that may act as a magnet to potential migrants.

[34] Indeed, the Biden administration appears to have been worried enough about this possibility that it took the unusual step of backdating eligibility for the September 2023 redesignation to migrants who arrived by July 2023 instead of any time before the program was announced; no previous TPS program had been backdated. See https://www.federalregister.gov/documents/2023/10/03/2023-21865/extension-and-redesignation-of-venezuela-for-temporary-protected-status.

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Appendix

Data sources

US Border Patrol encounters between ports of entry along the U.S.-Mexico border and nationally and Customs and Border Protection data on inadmissible migrants at ports of entry nationally are from https://ohss.dhs.gov/topics/immigration/immigration-enforcement/monthly-tables. The data are monthly counts, rounded to the nearest 10, for the top 100 countries by citizenship.

Customs and Border Protection data on inadmissible migrants at ports of entry along the U.S.-Mexico border are from https://www.cbp.gov/document/foia-record/cbp-office-field-operations-statistics. We use the data files on OFO inadmissibles to construct monthly counts of migrants by citizenship at Southwest land ports of entry.

Mexican encounters data are from monthly reports on migration statistics (Boletin Mensual de Estadisticas Migratorias) published by the Secretaria de Gobernacion, Unidad de Politica Migratoria, available at https://portales.segob.gob.mx/es/PoliticaMigratoria/Boletin_MyH.

Data on the number of migrants crossing through the Darién Gap are collected by Migración Panama, available at https://www.migracion.gob.pa/estadisticas/.

Customs and Border Protection data on the number of migrants subject to Title 42 expulsions are from https://www.cbp.gov/document/stats/nationwide-encounters. We use the data on nationwide encounters by area of responsibility, which include monthly counts by citizenship, area, and encounter type.

Appendix Table 1. Average treatment on the treated estimates of effects of CHNV program from different models

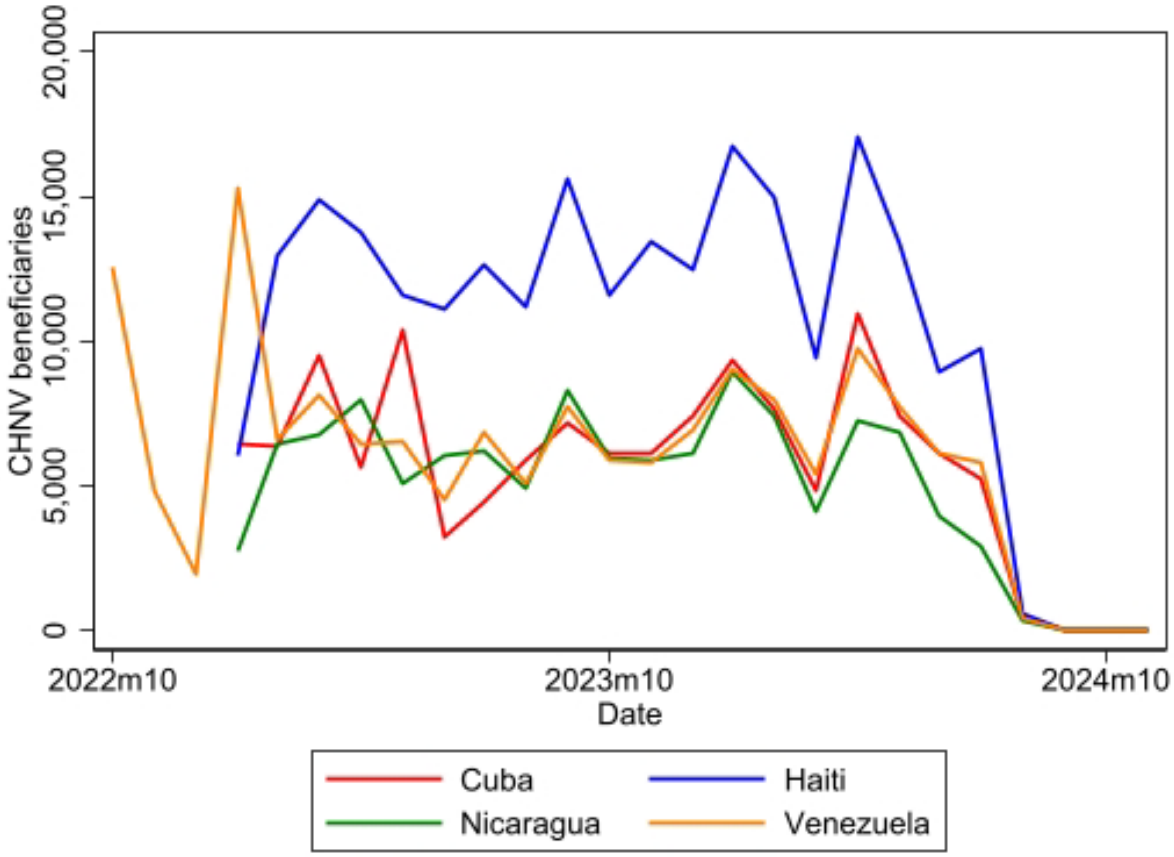
	Cuba	Haiti	Nicaragua	Venezuela
A. Encounters between U.S. ports of entry along Southwest border				
SDID model (baseline)	-3.745***	-0.411	-2.643***	-0.605
	(0.841)	(0.923)	(0.864)	(0.844)
SDID model, limited donor pool	-3.926***	-0.289	-2.919***	-1.205
	(0.468)	(0.482)	(0.536)	(0.873)
SC model	-3.239***	-1.949***	-2.338***	0.512
	(0.819)	(0.742)	(0.816)	(0.739)
DID model	-3.642***	-3.928***	-2.482*	0.067
	(1.378)	(1.353)	(1.391)	(1.351)
B. Inadmissible migrants at U.S. ports of entry along Southwest border				
SDID model (baseline)	4.666***	1.314*	1.897**	3.862***
	(0.830)	(0.753)	(0.829)	(0.880)
SDID model, limited donor pool	3.386***	5.621***	0.838	2.191**
	(0.956)	(1.007)	(0.958)	(0.936)
SC model	4.214***	1.946***	2.022***	2.640***
	(0.696)	(0.722)	(0.744)	(0.741)
DID model	3.760***	3.398***	1.140	4.191***
	(1.166)	(1.226)	(1.167)	(1.161)
C. Total migrants along Southwest border, both at and between U.S. ports				
SDID model (baseline)	-1.388***	0.894**	-2.448***	0.133
	(0.486)	(0.431)	(0.490)	(0.512)
SDID model, limited donor pool	-1.645**	0.522	-2.774***	-0.447
	(0.687)	(0.761)	(0.587)	(1.047)
SC model	-0.974	0.527	-2.231***	1.241
	(0.802)	(0.896)	(0.816)	(0.875)
DID model	-0.863	0.512	-1.829	1.270
	(1.301)	(1.272)	(1.229)	(1.366)

Appendix Table 1, continued. Average treatment on the treated estimates of effects of CHNV program from different models

	Cuba	Haiti	Nicaragua	Venezuela
D. Mexican enforcement encounters				
SDID model (baseline)	-1.049**	0.562	-1.323***	-0.592
	(0.428)	(0.538)	(0.430)	(0.791)
SC model	-1.239**	-1.024**	-1.803***	1.435***
	(0.519)	(0.515)	(0.540)	(0.519)
DID model	-0.587	1.261	-0.678	2.823
	(1.505)	(1.504)	(1.491)	(1.695)
E. Darién Gap crossings				
SDID model (baseline)	-1.324	-0.077	—	0.225
	(1.206)	(1.206)		(1.241)
SDID model, limited donor pool	-1.889**	-0.086	—	-1.007
	(0.900)	(0.940)		(1.150)
SC model	-0.827	2.469**	—	2.394**
	(1.096)	(1.091)		(1.006)
DID model	-1.705	0.197	—	3.950**
	(1.762)	(1.672)		(1.660)
F. National total between and at U.S. ports of entry, including CHNV parolees				
SDID model (baseline)	-0.274	1.188***	-0.636*	0.093
	(0.324)	(0.309)	(0.345)	(0.330)
SDID model, limited donor pool	-0.844*	1.383***	-1.151**	-0.100
	(0.466)	(0.514)	(0.512)	(0.730)
SC model	-0.222	1.024**	-0.581	1.511***
	(0.462)	(0.440)	(0.529)	(0.489)
DID model	0.261	1.636***	0.018	1.664**
	(0.628)	(0.623)	(0.624)	(0.718)

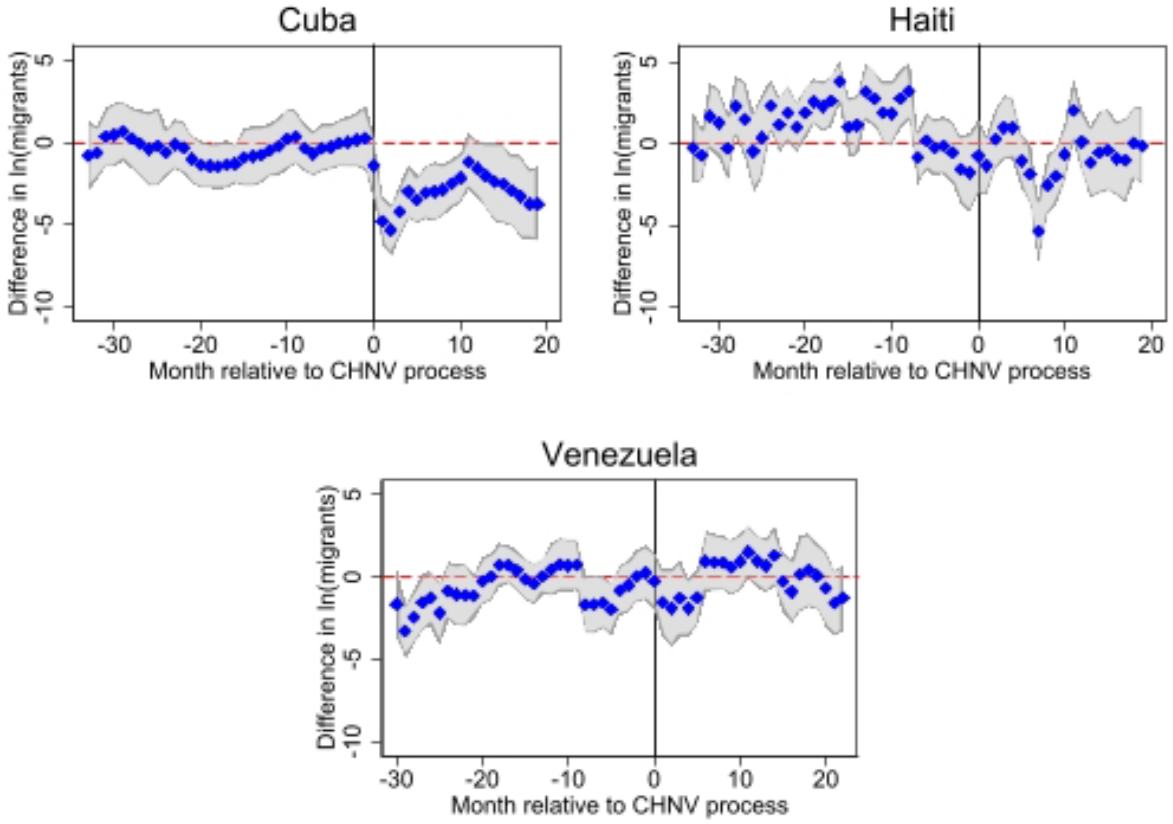
Note: Shown are estimated average treatment on the treated effects from synthetic difference-in-differences models (reproduced from Table 1); synthetic difference-in-differences models that limit the donor pool to the other major origin countries of unauthorized immigrants in the Western Hemisphere: Mexico, El Salvador, Guatemala, Honduras, Colombia, and Ecuador; conventional synthetic control models; and conventional difference-in-differences models. The dependent variable is the natural log of the variable indicated. Standard errors estimated using the placebo method with 500 bootstrap replications are in parentheses. *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Appendix Figure 1. Number of beneficiaries approved for CHNV parole processes by country and month



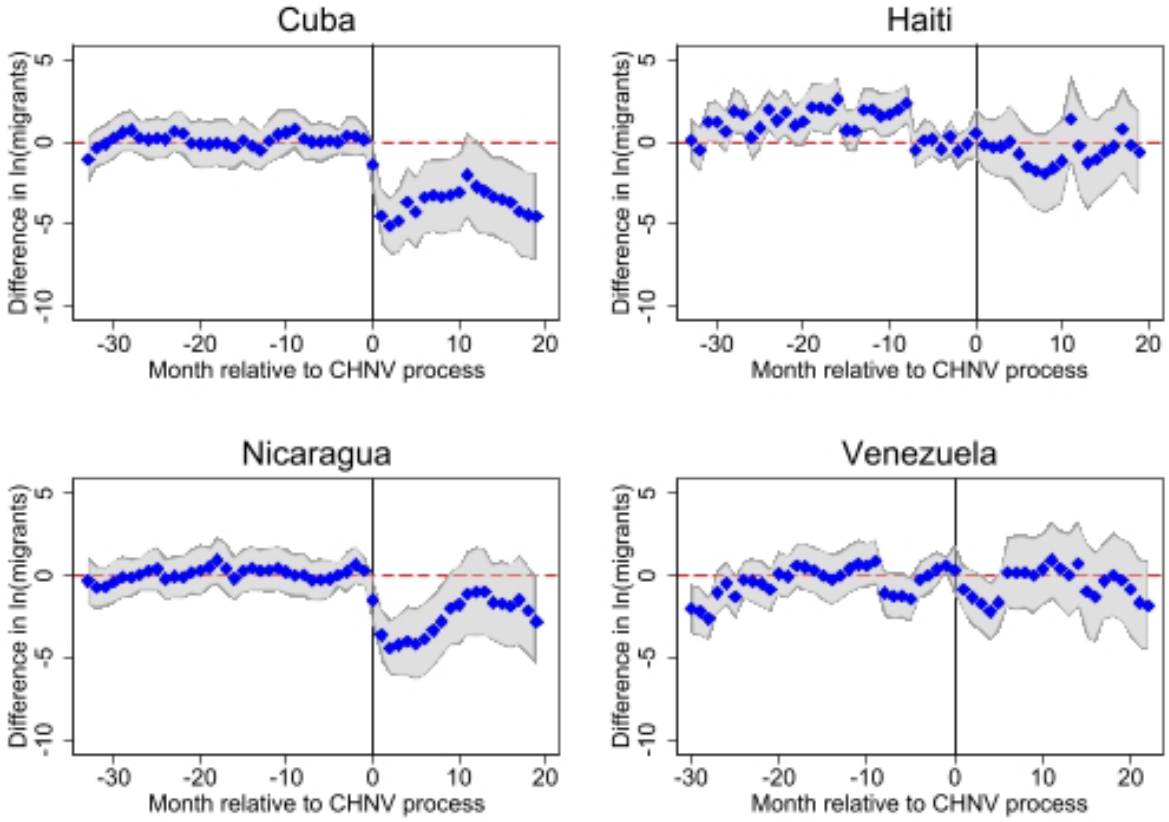
Note: The figure shows the number of confirmed CHNV beneficiaries by month. The data are from the U.S. Department of Homeland Security, Office of Homeland Security Statistics.

Appendix Figure 2. Synthetic difference-in-differences estimates of effect of CHNV program on number of US Border Patrol encounters with migrants between ports of entry, controlling for CBP One appointments



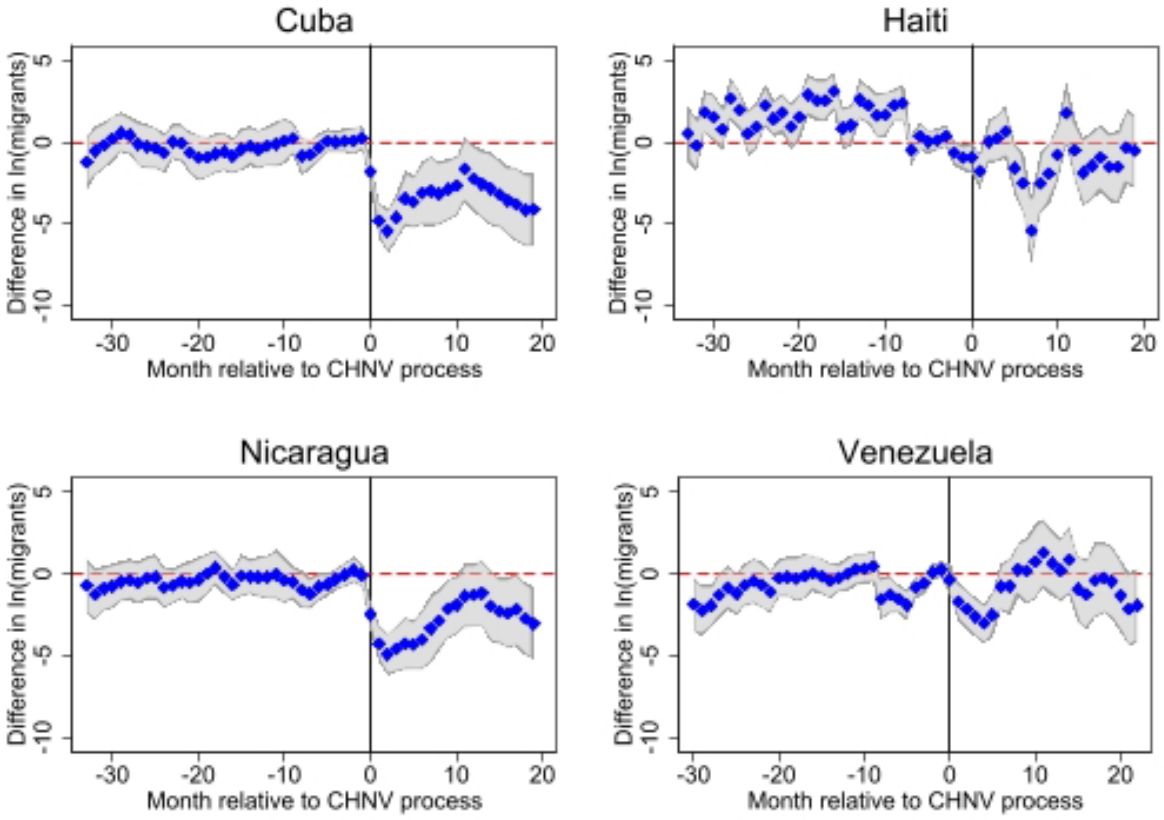
Note: The figures show difference-in-differences estimates for the natural log of the number of encounters and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela. Data on CBP One appointments for Nicaragua are not available.

Appendix Figure 3. Synthetic difference-in-differences estimates of effect of CHNV program on number of US Border Patrol encounters with migrants between ports of entry, nationwide



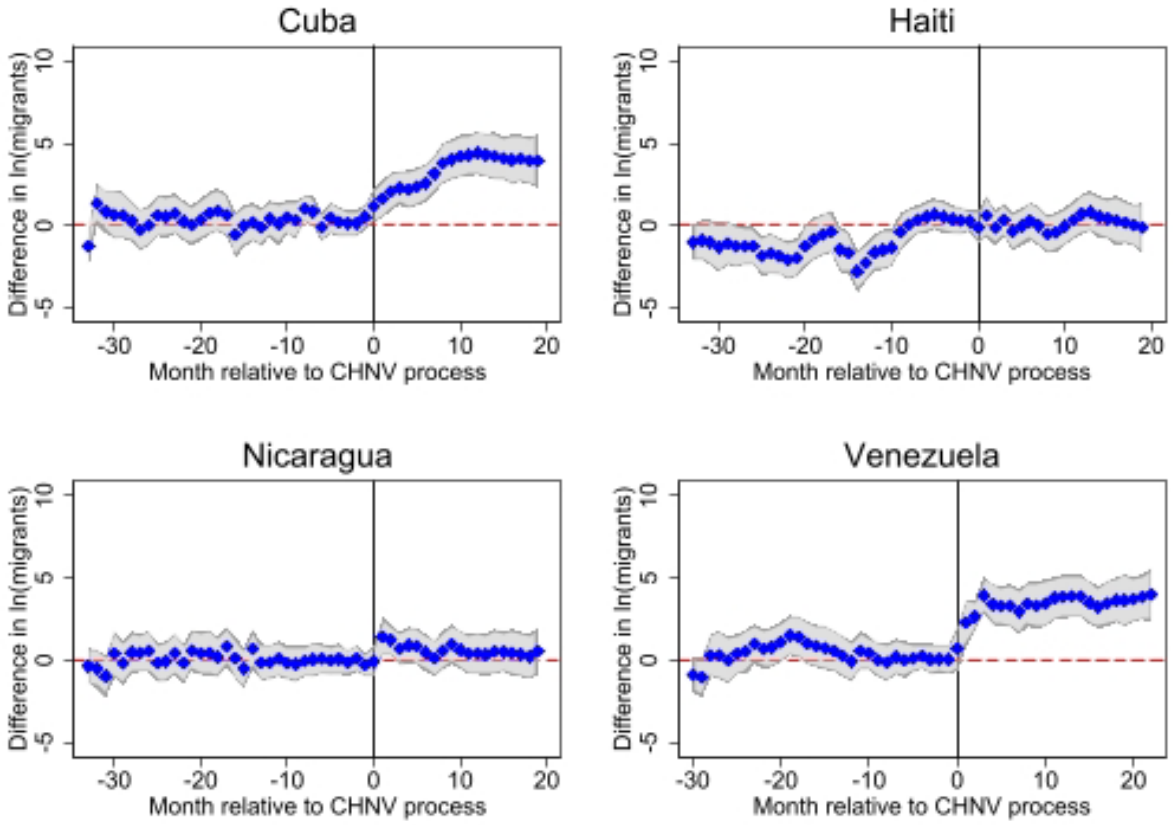
Note: The figures show difference-in-differences estimates for the natural log of the number of encounters and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Appendix Figure 4. Synthetic difference-in-differences estimates of effect of CHNV program on US Border Patrol encounters with migrants between ports of entry along U.S.-Mexico border, controlling for Title 42 expulsions



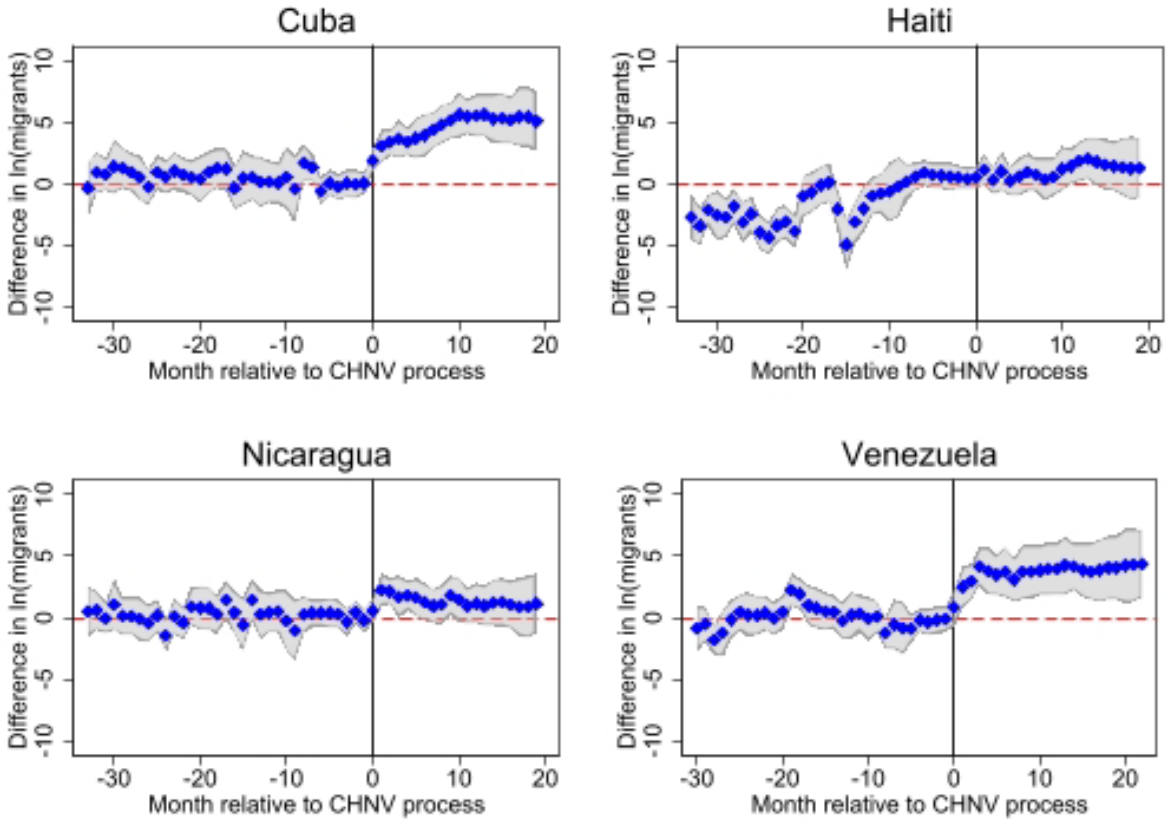
Note: The figures show difference-in-differences estimates for the natural log of the number of encounters and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024, controlling for the number of Title 42 expulsions. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Appendix Figure 5. Synthetic difference-in-differences estimates of effect of CHNV program on number of inadmissible migrants at ports of entry, nationwide



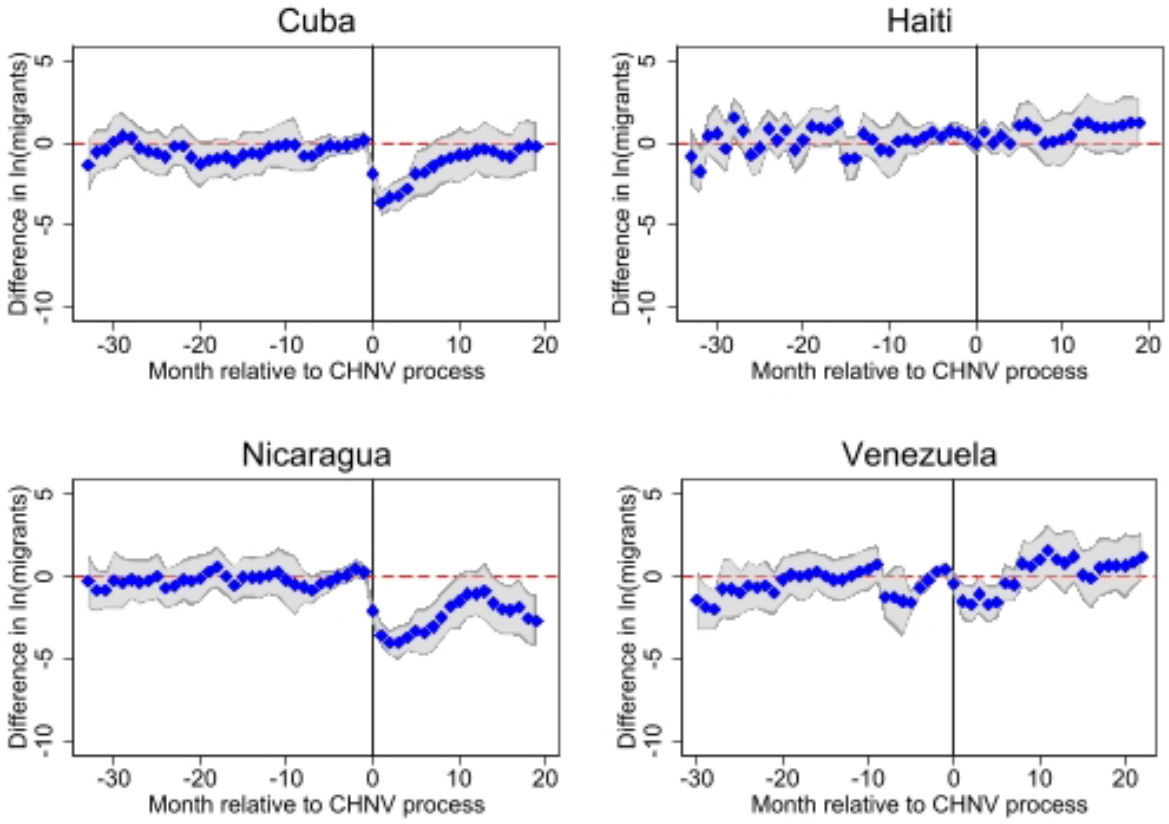
Note: The figures show difference-in-differences estimates for the natural log of the number of inadmissible migrants and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024. The data include only enforcement encounters, not administrative encounters, and therefore do not include parolees. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Appendix Figure 6. Synthetic difference-in-differences estimates of effect of CHNV program on number of inadmissible migrants at ports of entry along U.S.-Mexico border, controlling for Title 42 expulsions



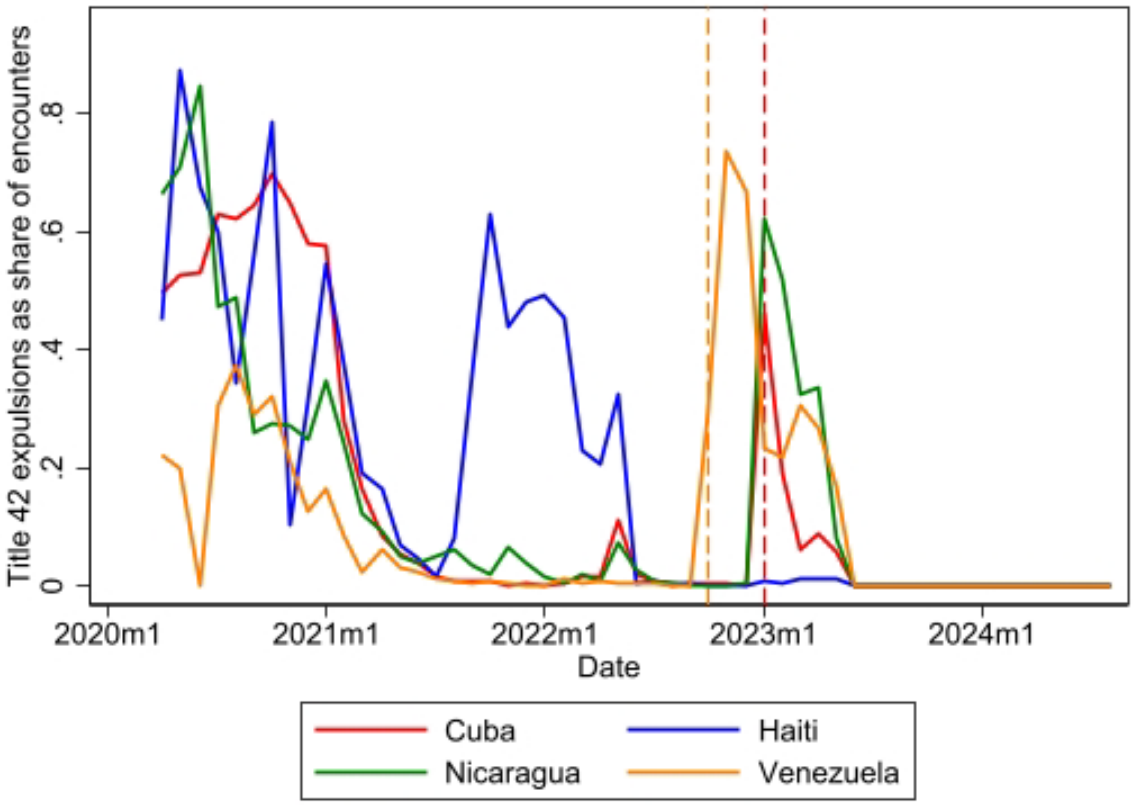
Note: The figures show difference-in-differences estimates for the natural log of the number of inadmissible migrants and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024, controlling for the number of Title 42 expulsions. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Appendix Figure 7. Synthetic difference-in-differences estimates of effect of CHNV program on total number of migrants processed by Customs and Border Protection along U.S.-Mexico border, controlling for Title 42 expulsions



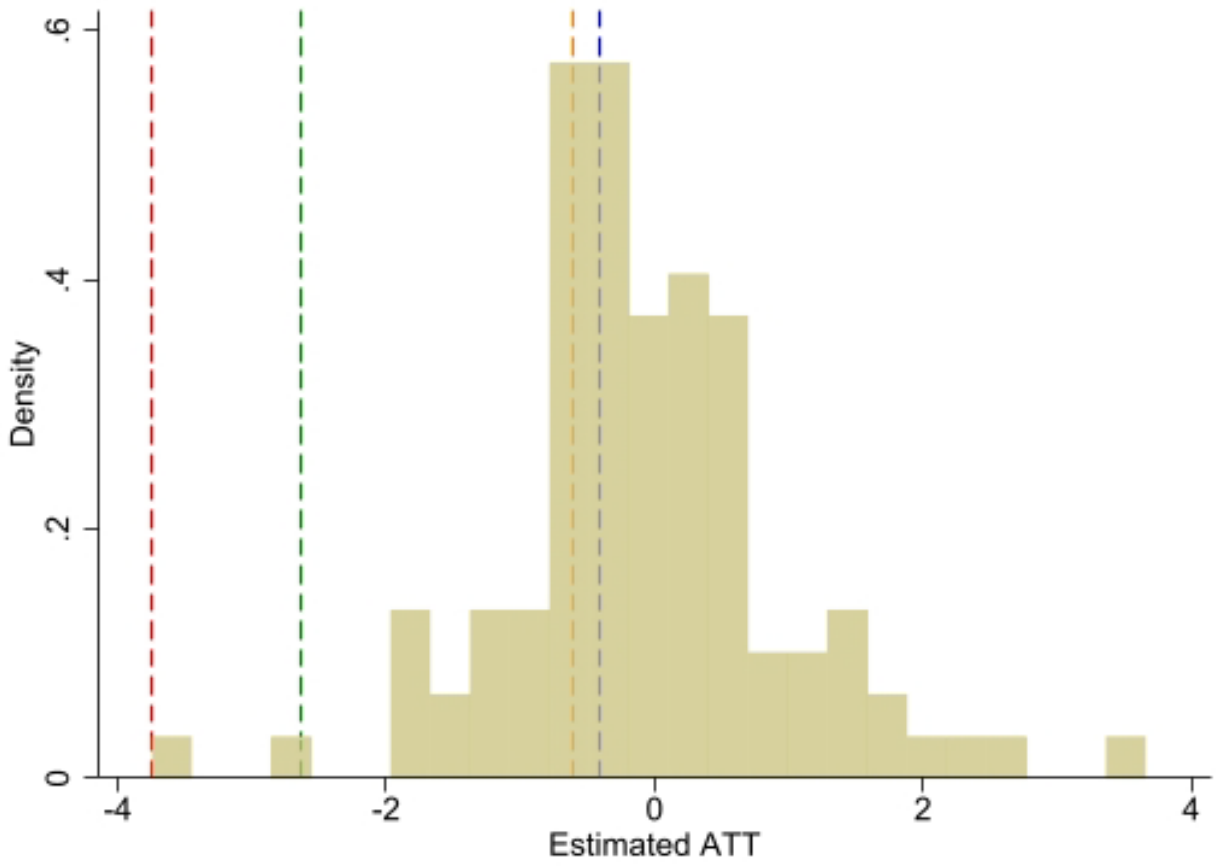
Note: The figures show difference-in-differences estimates for the natural log of the number of encounters between ports of entry plus inadmissible migrants at ports of entry along the U.S.-Mexico border and 95% confidence intervals for the country indicated relative to its synthetic control for the period April 2020 through August 2024, controlling for the number of Title 42 expulsions. The parole process began in January 2023 for Cuba, Haiti, and Nicaragua and in October 2022 for Venezuela.

Appendix Figure 8. Share of Customs and Border Protection encounters with migrants from CHNV countries along U.S.-Mexico border that resulted in a Title 42 expulsion



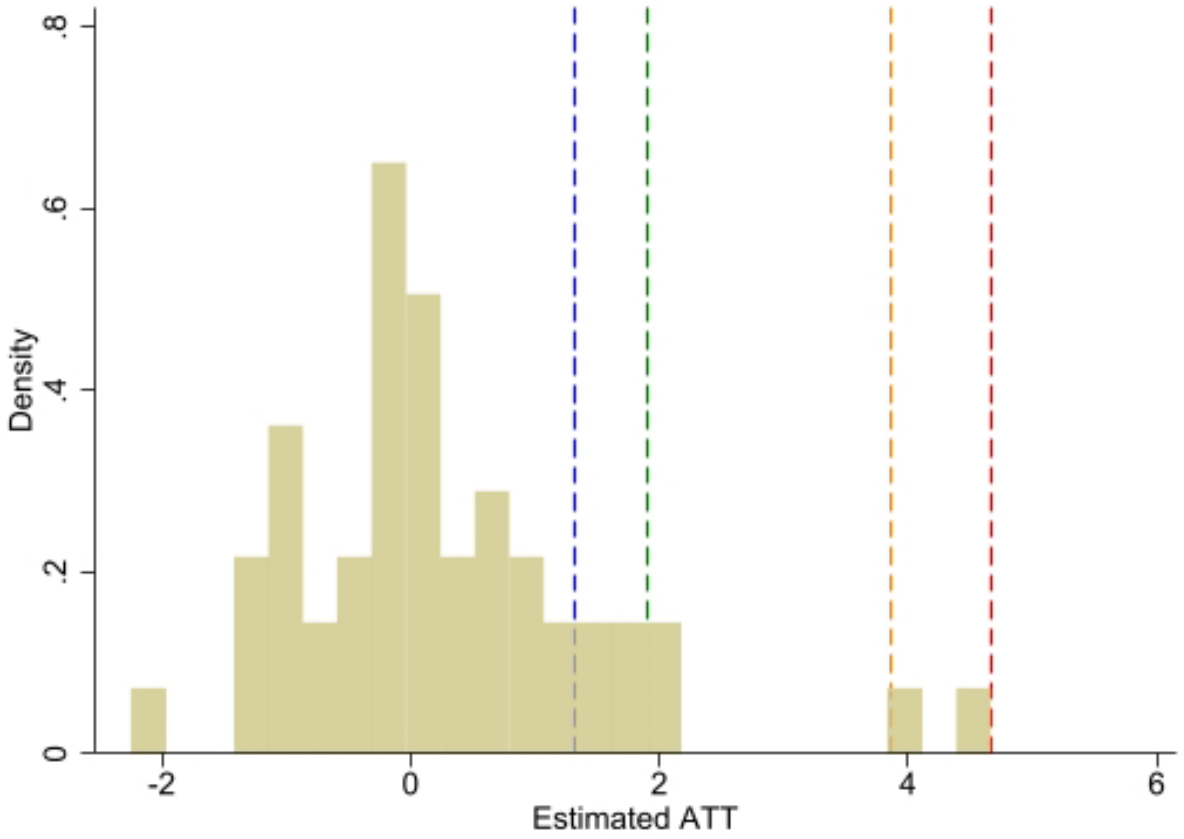
Note: The figure shows the share of CBP encounters with migrants along the U.S.-Mexico either between or at ports of entry that resulted in a Title 42 expulsion for the countries indicated for the period April 2020 through August 2024. Title 42 was terminated in May 2023. The parole process began in October 2022 for Venezuela (orange dashed vertical line) and in January 2023 for Cuba, Haiti, and Nicaragua (red dashed vertical line).

Appendix Figure 9. Placebo estimates of the ATT for countries in the donor pool for the synthetic difference-in-differences model of effect of CHNV program on Border Patrol encounters with migrants between ports of entry along U.S.-Mexico border



Note: The figure shows the estimated ATT from assigning, one by one, each of the 96 countries plus "other" in the donor pool a treatment date of January 2023 and estimating the SDID model. The estimated ATTs for the CHNV countries are included in the histogram and indicated by the dashed vertical lines. From left to right, the red dashed vertical line is the estimated ATT for Cuba; green for Nicaragua; orange for Venezuela; and blue for Haiti.

Appendix Figure 10. Placebo estimates of the ATT for countries in the donor pool for the synthetic difference-in-differences model of effect of CHNV program on number of inadmissible migrants at ports of entry along U.S.-Mexico border



Note: The figure shows the estimated ATT from assigning, one by one, each of the 46 countries plus "other" in the donor pool a treatment date of January 2023 and estimating the SDID model. The estimated ATTs for the CHNV countries are included in the histogram and indicated by the dashed vertical lines. From left to right, the blue dashed vertical line is the estimated ATT for Haiti; green for Nicaragua; orange for Venezuela; and red for Cuba.