CENTER FOR GLOBAL DEVELOPMENT

The Often Overlooked "Pull" Factor

BORDER CROSSINGS AND LABOR MARKET TIGHTNESS IN THE US

Dany Bahar

Abstract

This study investigates the link between Southwest US border crossings and labor market tightness, measured by the job openings to unemployed ratio, over nearly 25 years (2000–2023). Analyzing monthly data, it finds a strong positive correlation, suggesting that increased border crossings align with greater job availability. Exploiting data across different presidential administrations reveals no statistically significant differences in this relationship, regardless of the President's party. The findings suggest a natural economic adjustment mechanism in which crossings naturally decrease as the labor market cools.

The Often Overlooked "Pull" Factor: Border Crossings and Labor Market Tightness in the US

Dany Bahar

Brown University, Harvard Growth Lab, and Center for Global Development
dany_bahar@brown.edu

Contents

Figures

Tables

1. Introduction

In an era in which migration policies and border security dominate political debates, understanding the dynamics of border crossings into the United States requires a nuanced examination of the economic conditions that drive such movements. Amid the complex interplay of factors influencing migration, this study delves into the pivotal role of labor market tightness in the US, a measure of economic "pull," in shaping the patterns of border crossings over nearly a quarter century.

To do so, I analyze monthly data spanning from December 2000 to January 2024, on the job openings per unemployed person, a proxy for labor market tightness as measured by the Bureau of Labor Statistics, and crossings through the US Southwest border, as reported by Customs and Border Patrol.

In particular, I show how these two series tend to comove, both visually and analytically. The comovement of both series, I find, is much more pronounced over the past few years, when the US has experienced an all-time high in border crossings, as well as an all-time high in labor market tightness. However, during those same years, there is no particular economic shock in the main immigrant-sending countries of an order of magnitude that can explain the rapid increase in border crossings.

Using nearly 25 years of data, I estimate that the elasticity of job openings per unemployed person to border crossings falls between 0.3 and 0.7, depending on whether the estimation is done with level or month-on-month (MoM) differences. I also estimate the elasticity across Democratic and Republican administrations and separately across four different presidential terms: Bush, Obama, Trump, and Biden. I do not find the relationship between border crossings and labor market tightness to be statistically different across different presidential terms. This implies that the economic foundations of border crossings transcend conventional political narratives.

The insights gleaned from this study have significant implications for the discourse on migration policy. By demonstrating the critical importance of economic "pull" factors, particularly labor market tightness, the findings challenge the prevailing policy of focusing *only* on enforcement and assistance to migrant-sending countries as primary means of reducing irregular border crossings. These findings indicate that the provision of legal pathways to satisfy labor market demands is part of the solution, consistently with recent work by Clemens (2024).

As such, in the presence of tight labor markets, the surge in border crossings observed during 2022 and 2023, based on the results of this paper, would have occurred in a similar magnitude regardless of who was sitting at the White House at the time, a Democrat, or a Republican.

The findings also suggest that what is often perceived as a "border crisis" is, in many respects, a manifestation of the US economy's labor demands. As such, intense periods of border crossing

will tend to significantly slow down after the local labor market cools off. In this sense, my findings highlight the potential of aligning immigration policies with labor market needs, suggesting a paradigm shift towards facilitating legal pathways for migration in response to economic demand.

In sum, this study contributes a vital economic perspective to the conversation on migration, advocating for policies that recognize the intrinsic link between the US labor market's needs and the patterns of border crossings. As the United States grapples with the challenges and opportunities of migration, embracing an economically informed approach to immigration reform could pave the way for a more balanced, effective, and humane management of cross-border movements.

2. Simple framework to understand border crossings

The canonical model explaining migration motives discusses as the main determinants the earnings differentials between the origin and destination locations, and the costs of moving (Sjaastad, 1962). In general, one can think of the determinants of migration choices in terms of three factors: push, pull, and cost of migrating.

Push factors are the conditions at the location of *origin* that incentivize emigration, such as the low earning potential. We can think of a more generous definition of push factors that go beyond earnings and include, for instance, safety considerations or natural disasters (many of which would arguably be reflected in earning potential).

Pull factors, in turn, are the conditions at the *destination* that attract immigration, such as the high income potential (relative to origin). Other pull factor are, for example, the presence of family and friends (e.g., networks more generally) in the country of destination.

The cost of migrating is all about the journey: How costly it is in terms of money, time, personal safety, etc. It can also encompass the idea that not all attempts to cross the border are successful (in economic terms, under these circumstances the cost would be infinite).

For decades, the United States has struggled with policies to deal with undocumented migration that originates mainly from crossings on the Southwest border of the country, which have fluctuated significantly over the past two and a half decades, as shown in the monthly time series plotted in Figure 1 (see Section 3 for details of data sources). As can be seen in the figure, border crossings are characterized by periods of peaks usually followed by periods of drops in the number of border encounters. As expected, the significant drop in crossings due to mobility restrictions during the peak of the COVID-19 pandemic during 2020 shows up clearly in the figure.

As can be expected, in times of "peaks," such as the record-high crossings during 2022 and 2023, the border dynamics permeate the political conversation. In fact, immigration has become the most important issue for voters in America in 2024 according to recent Gallup polls (Jones, 2024).

Especially around these "peaks," there are also heated discussions about policies to implement to reduce the crossings. Most of the discussion surrounding policies typically centers around only two out of the three factors named above: the push factors and the cost of migrating.

FIGURE 1. Southwest border crossings time series
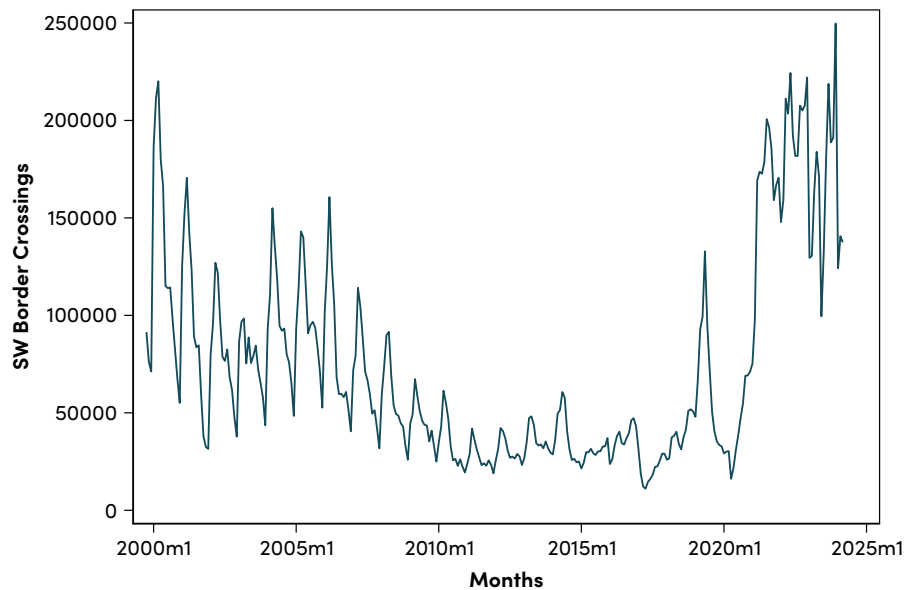
Note: The graph plots the monthly time series of total encounters at the US Southwest border. The observations include data from October of 1999 to March of 2024.

Among the policies that aim to deal with the push factors are providing financial and technical assistance to the countries of origin for most immigrants, namely Mexico, countries in Central America, and most recently countries hosting Venezuelan immigrants such as Colombia, for example, to improve conditions in those economies. This in turn, presumably, would improve earning potentials subsequently reducing the incentive to emigrate. In the case of countries in the Northern Triangle, many of the policies are also aimed at reducing violence and conflict, which are considered to be an important push factor driving out-migration. Some other policies, such as creating a wall along the Southwest border as championed by President Trump and the invoking of Title 42 both during the Trump and Biden administrations, are intended to increase the cost of migrating, with the aim

of physically stopping immigrants at the border and with that deterring other immigrants from embarking on the journey.[1]

FIGURE 2. Job openings rate time series
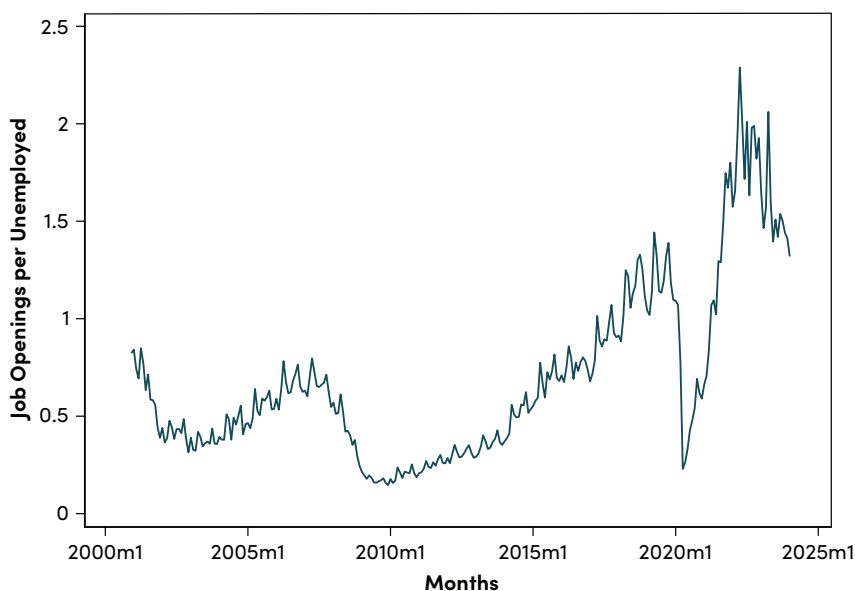
Note: The graph plots the monthly time series of Job Openings per Unemployed Person. The observations include data from December 2000 to January 2024.

However, an important aspect has been largely missing from this discussion: Pull factors. Figure 2 plots the monthly time series of the job opening rate, which is the number of job openings per unemployed person in the United States, from late 2000 to early 2024. This is considered to be the best proxy for the tightness of the labor markets. The higher the number of openings per unemployed person, the more workers are needed in the economy. The figure, interestingly enough, is remarkably similar to Figure 1, although with less seasonality.

The rest of this paper aims to show that, indeed, a crucial determinant of border crossings, even if often overlooked in public discussion, is the pull factor represented in the conditions of the US labor markets. Accordingly, the policy discussion surrounding border crossings must expand to include different components from the ones discussed today, which typically center on push factors and cost of migrating.

This is not to say, of course, that push factors and the cost of migrating do not matter. They do, as has been empirically shown (see Grogger and Hanson (2011), for example). In fact, many

---

1   While it is hard to measure the effectiveness of these policies in reducing migration flows, there are reasons to believe they would be ineffective. For once, improving economic conditions could result in more, not less, emigration, as shown by Clemens and Mendola (2020) as people gather more resources to pay for the journey or to survive the first few months in a new location, for example. At the same time, when it comes to the border wall, a recent study by Allen et al. (2019) shows that the existing wall did not have a large effect on the choice of whether or not to migrate for migrants.

immigrants decide to migrate because of their low income potential at home or to flee violence and conflict. In addition, arguably, the number of incremental crossings over the Darién gap over the past few years is considered to be a signal to other immigrants that the path, while extremely hard and dangerous, is actually possible, resulting in more flows. However, this study focuses on the pull factor as represented by the dynamics of the US labor market, without the intention of invalidating other determinants. The data suggest, as shown below, that this pull factor—while often overlooked—is a significant determinant of these flows that should not be ignored.

3. Data sources

The data for the analysis come from two main sources.

First, data on monthly border patrol encounters collected by the US Customs and Border Patrol.[2] The data measures encounters at the border as defined by US Customs and Border Protection. It counts all interactions with individuals attempting to enter the US at points of entry or who are apprehended between ports of entry. In this study, I only focus on encounters at the Southwest border, which I interchangeably also refer to as "crossings" throughout the paper. The data were downloaded for each month from October 1999 until March 2024.

For labor market dynamics, I rely on data from the Job Opening and Labor Turnover Survey (JOLTS) by the US Bureau of Labor Statistics.[3] The data include job openings and the number of unemployed individuals per month for the United States as a whole. These data were downloaded from December 2000 to January 2024. With these data, I calculated the job openings ratio, which is the number of job openings per unemployed person on a monthly basis.

All data were downloaded in raw format (that is, not seasonally adjusted).

Note that Appendix A shows that results are robust to aggregating the data in quarters, instead of using monthly variation that tends to be more noisy.

4. Analysis

4.1 Crossings and labor markets

To describe the data, two main time series of interest are plotted: labor market tightness—as measured by the ratio of job openings to unemployed—to the number of crossings through the

....

2   Data from FY2000 until FY2020 is accessible through this URL: https://www.cbp.gov/sites/default/files/assets/ documents/2021-Aug/U.S.%20Border%20Patrol%20Monthly%20Encounters%20%28FY%202000%20-%20FY%20 2020%29%20%28508%29.pdf. Data for the most recent years are available from: https://www.cbp.gov/newsroom/stats/ nationwide-encounters.
3   The data can be downloaded from their website https://www.bls.gov/jlt/.

US Southwest border, from December of 2000 to January of 2024. I present three visualizations of these two time series in Figure 3.

The upper panel presents the raw data. A careful look at it shows how the Southwest border encounters seem to be much more volatile than the job openings per unemployed person, though overall they seem to have some relationship. Both series are integrated of order 1. When the Engle-Granger cointegration test was applied in these two series, the test produced a test statistic of –18.829, way above the critical value of –4.024 at the 1 percent significance level. This result suggests the presence of cointegration between the series, indicating that they share a long-term equilibrium relationship.

The middle panel shows the trends of both series using the Hodrick-Prescott (HP) filter. When excluding the short-term variation, it can be appreciated from the figure how there is a relationship with levels between the two series. However, to better analyze comovements, it is suggested to do so on stationary versions of the series, which is what I present in the lower panel.

The lower panel plots the month-on-month (MoM) difference between the two series (i.e., February 2007 minus February 2006). This visualization not only helps to visualize the series in a stationary form, but also reduces seasonality as it differentiates within the same month in the previous year. The graph shows that, indeed, particularly after 2015, both series show an important degree of comovement (consistent with being cointegrated as described above).

These descriptive figures support the main finding of this study: Pull factors, represented by the tightness of the US labor market, are a significant determinant of the number of border crossings on the US Southwest border.[4]

4.2 A closer look into the recent period

In this section, I examine the time frame from 2018 to 2023, highlighting how the COVID-19 global pandemic's distortions may have significantly impacted the dynamics under discussion, potentially extending their effects up to the present day. This interval is particularly notable as it encompasses periods when border crossings surged to unprecedented levels, with the exception of 2020 and 2021, the years that marked the pandemic's peak. An interesting observation from this era is the pronounced simultaneous movement of two key series, as depicted in Figure 4. Here, the left panel presents the raw data, while the right panel illustrates the MoM variation.

....

4   In turn, of course, labor market tightness could be affected by the crossings (by most likely reducing it, if anything). However, with the US labor force in 2024 estimated to be more than 160 million people, the crossing of 2 million individuals—most of which, but not all are in labor force age—seems to be able to only affect labor market tightness marginally, at most.

FIGURE 3. Southwest border encounters and labor market tightness
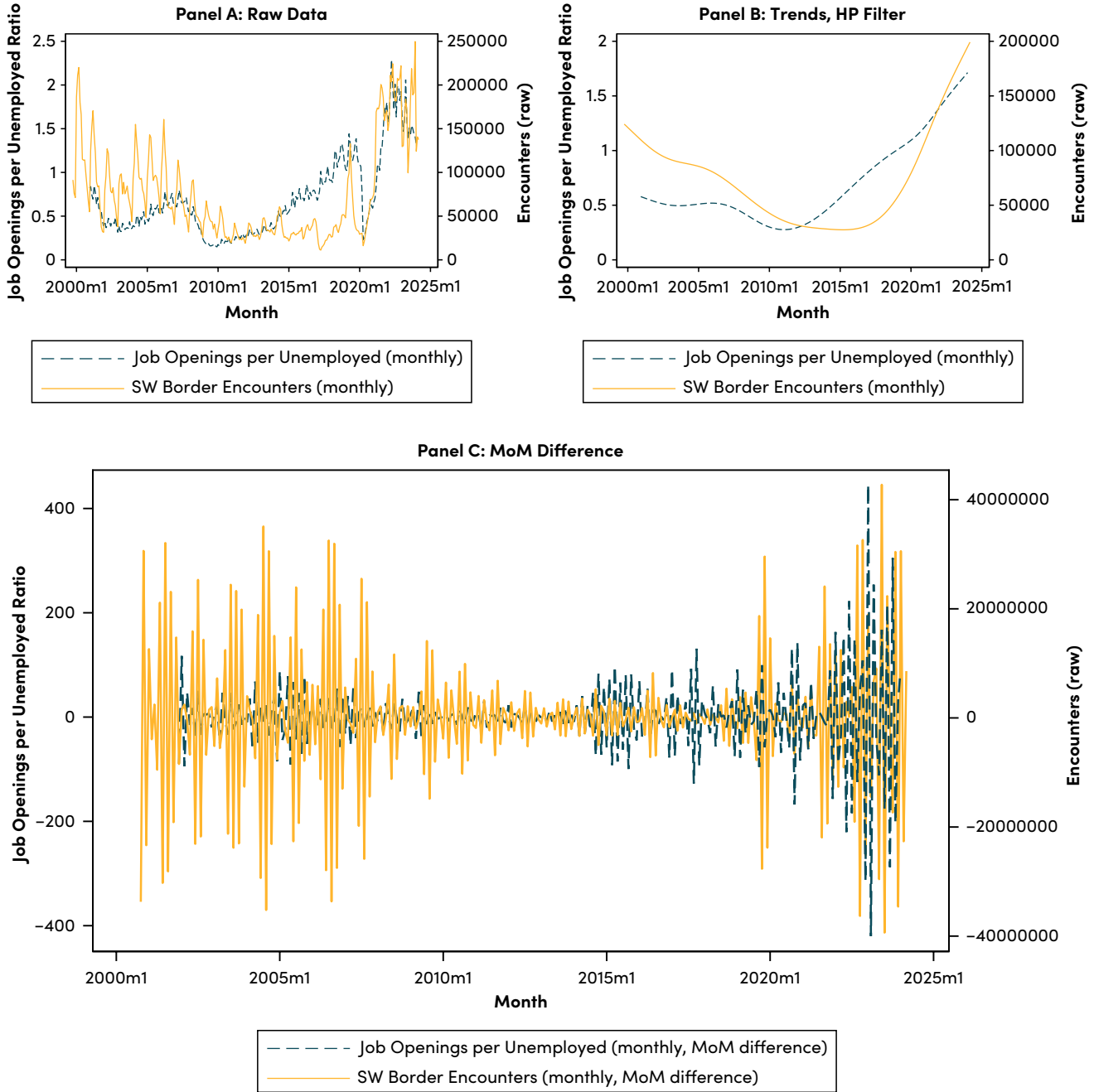
Note: The figure presents several versions of two time series: border crossings through the US Southwest border (continuous line) and job openings per unemployed person (dashed line). Panel (a) presents plots the series using the raw data; Panel (b) plots the trends computed after applying a Hodrick-Prescott (HP) filter on each series; and panel (c) plots the series after applying a MoM difference. The observations include data from December 2000 to January 2024.

FIGURE 4. Southwest border encounters and labor market tightness (2018 to 2023)
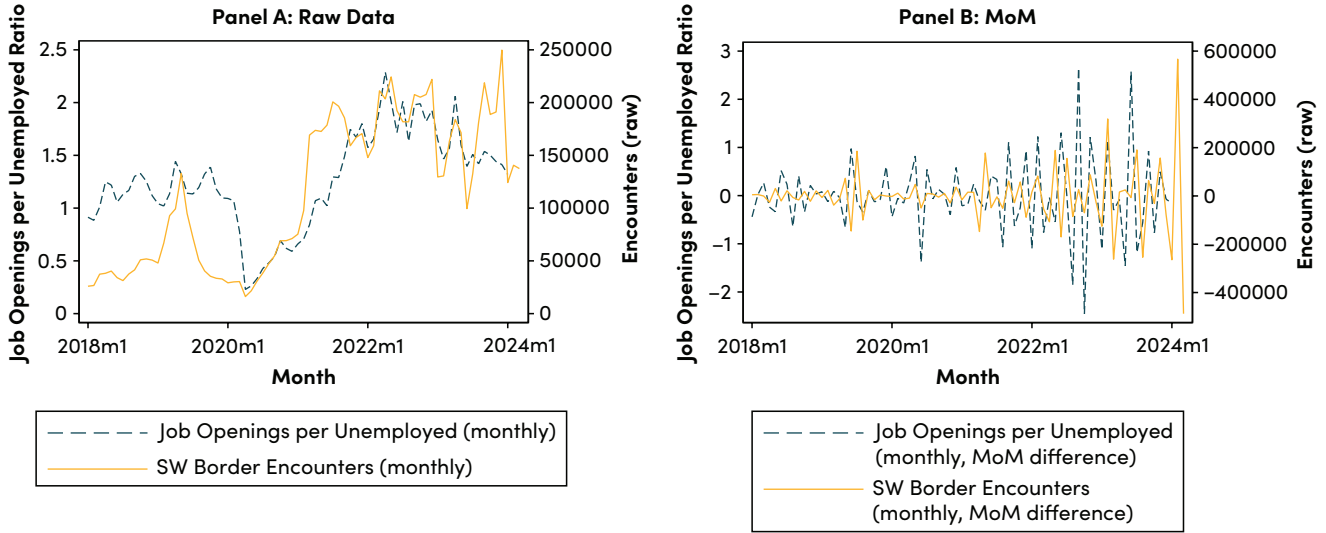
Note: The figure presents several versions of two time series: border crossings through the US Southwest border (continuous line) and job openings per unemployed person (dashed line). Panel (a) presents plots the series using the raw data; Panel (b) plots the series after applying a MoM difference. The observations include data from January 2018 to January 2024.

FIGURE 5. Encounters at Southwest border by immigrant citizenship (2020–2023)
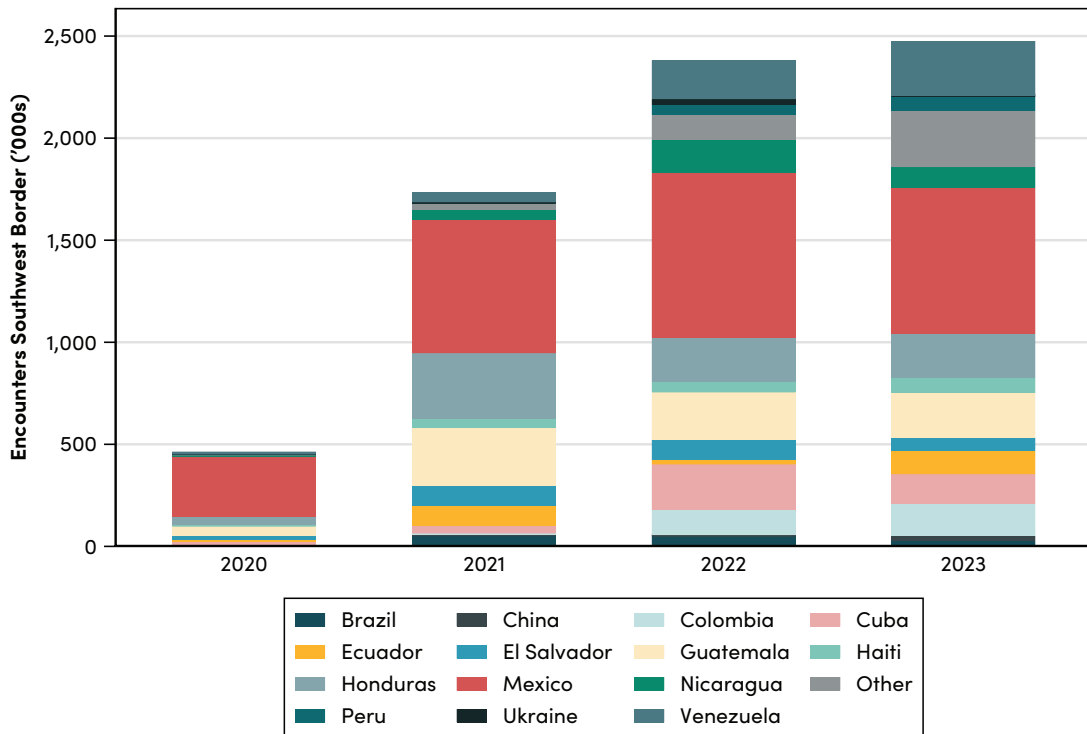
Note: The graph plots the total encounters through the southwest border for fiscal years 2020, 2021, and 2023 by citizenship, using data from US Customs and Border Patrol. The category "others" include citizens from India, Philippines, Russia, Türkiye, and from the rest of the world.

Figure 5 visualizes the total number of encounters through the Southwest border for fiscal years 2020, 2021, and 2023 by immigrant citizenship.[5] The record high crossing rates during the most recent period include immigrant citizens of many countries, but the vast majority are citizens of Mexico, countries in Central America, and, more recently, Venezuela, as the figure suggests.

Despite these record-high crossing rates during the specified period, there were no significant changes in the push factors from migrant-sending countries, such as marked economic downturns or any other significant events, of an order of magnitude that could account for the unprecedented surge in US border crossings, overshadowing the rise in labor market tightness as a main factor acting to attract border crossings.
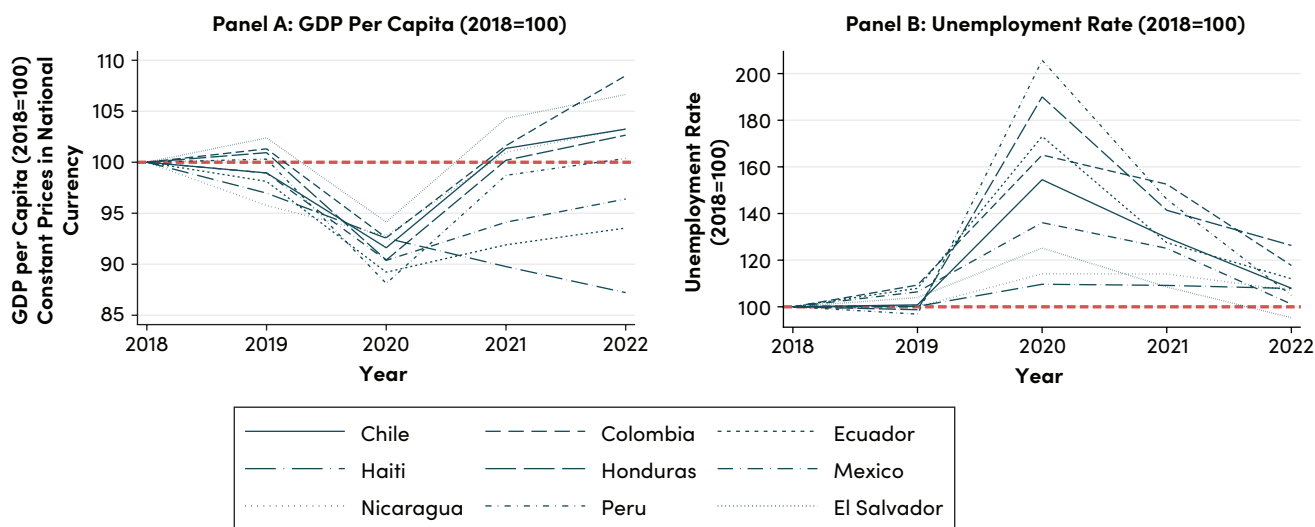
FIGURE 6. GDP per capita and unemployment rates, 2018 to 2022

Note: The left panel illustrates the evolution of GDP per capita (in national currency using constant prices) from 2018 to 2022 for several countries in the Americas. The right panel illustrates the evolution of the unemployment rates for the same period and the same countries. All values are normalized so that the 2018 GDP per capita and the 2018 unemployment rate equals 100. Data is sourced from the World Development Indicators by the World Bank.

To illustrate this point, the left panel of Figure 6 presents the evolution GDP per capita (as a proxy for overall economic conditions) of the primary countries of immigrant origin in the Americas, and the right panel shows the evolution unemployment rates of these countries between 2018 and 2022 (after which the data is not yet available). The countries Chile, Colombia, Ecuador, and Peru are included due to their status as important hosts of Venezuelan immigrants and refugees, since many Venezuelans could be migrating to the US from third countries as they struggle to integrate and make a living there. In these figures, the indicators are indexed to be 100 in 2018.

Interestingly, GDP per capita data suggest that all of these economies largely recovered or are on track to recovery from the COVID-19 recession, with Haiti being a notable exception. Haiti remains

....

5   The data was downloaded from https://www.cbp.gov/sites/default/files/assets/documents/2023-Nov/nationwide-encounters-fy20-fy23-state.csv.

embedded in a deep recession, exacerbated by significant political instability. However, Haitian migrants made up a relatively small fraction of the overall immigrant population crossing the US border.[6] Notably absent from this figure is Venezuela, which has emerged as a significant source of US immigrants after years of humanitarian and political crisis. Official data is not available, but credible media sources indicate that Venezuela's economy has seen growth in recent years, following a staggering 70 to 80 percent reduction in GDP (see Reuters (2024)). Consequently, while Venezuela continues to be a critical source of migration, the outflow from Venezuela is believed to have decelerated, with the majority of Venezuelan migrants entering the US likely originating from third countries in the region, such as Chile, Colombia, Ecuador, and Peru (in the figure). This emphasis on pull factors aligns with findings by Carare et al. (2023), who analyzed the determinants of border crossings from the Northern Triangle, concluding that local labor market conditions in the US indeed play a substantial role after controlling for push factors.

The right panel plots the unemployment rate in these countries. Although most countries are not back to their 2018 levels, all are already on a clear path to recovery.

Overall, while lack of economic opportunity at home is a clear push factor when it comes to immigration decisions, the aggregated data does not support that there has been such a deterioration over the last couple of years in the conditions of the sending countries of an order of magnitude that can explain the unprecedented surge in immigration, without adding into the mix the labor market conditions in the US, which have reached levels of tightness not seen for at least 25 years.

To be clear with these claims, I am not discarding the fact that push factors exist and that they are important determinants of current flows. For instance, the political and humanitarian crisis in Venezuela continues, and is expected not to be resolved anytime soon, especially since Nicolá Maduro is expected to remain in power even after the not free nor fair elections in 2024. With this in mind, more Venezuelans could be expected to flee the country. In turn, there is validity to the narrative that there are important bottlenecks in the socioeconomic integration of Venezuelan immigrants and refugees in other hosting countries in the hemisphere, and this could create the conditions for them to choose to relocate to another country, such as the US.[7]

However, the main point here is that despite these dynamics in the countries of origin, the tight labor market in the US seems to be a crucial determinant of these flows and should not be ignored by policymakers.

---

6   Based on data from US Customs and Border Patrol reporting crossings by nationalities between fiscal years 2020 to 2023, Haitian immigrants were 2.72% of all immigrants crossing the southwest border in FY2021, 2.26% in FY2022, and 3.07% in FY2023.
7   See Bahar et al. (2022) for a study on integration bottlenecks for Venezuelans in Colombia.

4.3 Estimations

To quantitatively explore the relationship between the two series, I estimate the elasticity between the two, as follows:

$$log\_crossings_{my} = \beta_{levels} log\_openings_{my} + \eta_m + \gamma_y + \varepsilon_{my} \tag{1}$$

where the subscript *my* indexes a month-year period. $log\_crossings_{my}$ is the total crossings during that month-year in log transformation, and $log\_openings_{my}$ is the job opening rate during that month-year period, also log transformed. The log transformation allows us to deal with outliers in the distribution and, at the same time, allows us to interpret β as an elasticity. ε_{my} represents the error term. In this specification β_{levels} represents the elasticity to be estimated.

The estimation also includes month fixed effects (η_m) and year fixed effects (γ_y) to control for monthly seasonality and common year-long shocks to both variables.

However, in compliance with the standards of time series analysis, I also estimate an Autoregressive Distributed Lag (ARDL) model using MoM differences.[8] The model to be estimated is:

$$\Delta log\_crossings_{my} = \beta_{MoM} \Delta log\_openings_{my} + \Delta log\_crossings_{my-1} + \Delta log\_openings_{my-1}$$
$$+ ECT_{my-1} + \varepsilon_{my} \tag{2}$$

Also, here the subscript *my* corresponds to a month-year period, same as in (1). Δ represents MoM differences; and ECT_{my-1} represents the error correction term, which is nothing more than the residual regression of $log\_crossings_{my}$ in $log\_openings_{my}$ lagged by one month. This term represents the long-term equilibrium relationship between the two variables, which is added as a control.[9] In general, the inclusion of these controls allows us to interpret the estimated value of β_{MoM} as a short-term elasticity.

The results are presented in Table 1. The results show how, when measured in levels or MoM differences, there is a positive and statistically significant elasticity between job openings and border crossings. In particular, when using levels, this elasticity is 0.7, implying that a 10 percent increase in labor market tightness is associated with an increase of 7 percent in border crossings. When using MoM differences, the elasticity is about 0.34, a smaller elasticity, but based on changes, not levels. Thus, a 10 percent increase in labor market tightness levels from a year ago is associated with an increase in border crossings compared to a year ago of 3.4 percent. Although we cannot necessarily interpret these numbers as purely causal, they nevertheless reinforce the idea that local labor market conditions in the US serve as a significant pull factor in the decision of hundreds of thousands of immigrants crossing the border every quarter.[10]

....

8 The purpose of the MoM difference instead of only first-differences is not only performing the analysis using series that are stationary, but also to reduce seasonality.

9 The inclusion of this control is important in this setting where the two series are cointegrated.

10 There are other factors that can explain the flows, too, and this analysis is not meant to claim that labor market tightness is the only one. The results represent a robust and strong partial correlation across over two decades of data. Further, some endogeneity concerns should be reduced with the inclusion of fixed effects in some specifications (for example, fixed effects by year controlling for yearly policy changes that affect both crossings and labor markets).

Table 2 estimates the same specifications (1) and (2), but using crossings for each one of the nine different crossing points of the US Southwest border. These crossings are Big Bend, Del Rio, El Centro, El Paso, Laredo, Rio Grande, San Diego, Tucson, and Yuma. Note that these crossings are in different states: Big Bend, Del Rio, El Paso, Laredo, and Rio Grande are located in Texas. El Centro and San Diego are located in California. Tucson and Yuma are located in Arizona. The job opening rate variable in all these estimations remains measured at the national level.

TABLE 1. Elasticity of crossings to labor market tightness

DV: Border Crossings (logs)		
	Levels	MoM
Job Openings Rate (logs)	0.698 (0.177)***	0.342 (0.096)***
N	276	265
R^2	0.86	0.85
Month FE	Y	N
Year FE	Y	N

Notes: The first column estimates Equation (1), which uses levels and includes month and year fixed effects. The second column estimates the ALDR model of Equation (2) using MoM values. The second column includes non-reported controls, which are lagged values (by one quarter) of the MoM crossings and openings (in logs) as well as the Error Correction Term explained in the main body of the text. Robust standard errors are presented in parenthesis. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

The results show that the positive elasticity between crossings and labor market tightness across all crossing points is high, though in a few cases the statistical significance is not consistent across both panels. However, in general, this exercise shows that the positive relationship between crossings and labor market tightness is not specific to a given crossing point or to a given state, but rather a phenomenon that is generalizable.

5. Results by presidential terms

In this section, my aim is to measure whether the implementation of different border policies, proxied by Democratic and Republican administrations over the past nearly 25 years, significantly alters the positive and robust relationship between labor market tightness and border crossings established above.

Figure 7 plots for each month the total encounters of the Southwest border on the vertical axis (using a logarithmic scale), and the measure of labor market tightness on the horizontal axis (also on a logarithmic scale). The markers distinguish between the months in each of four US administrations: George W. Bush (with data from December 2000 to December 2008), Barack Obama (January 2009 to December 2017), Donald Trump (January 2017 to December 2020), and Joe Biden (January 2021 to January 2024).

TABLE 2. Elasticity of crossings to labor market tightness, by crossing point

	Bigbend	Delrio	Elcentro	Elpaso	Laredo	Riogrande	Sandiego	Tucson	Yuma
Panel A: Border Crossings (logs) in Levels									
Job Openings Rate (logs)	0.181	0.706	0.521	0.750	0.483	0.709	0.528	0.656	1.024
	(0.165)	(0.230)***	(0.184)***	(0.197)***	(0.182)***	(0.166)***	(0.149)***	(0.179)***	(0.238)***
N	276	276	276	276	276	276	276	276	276
R^2	0.85	0.92	0.87	0.93	0.82	0.84	0.92	0.90	0.91
Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Panel B: Border Crossings (logs) in MoM									
Job Openings Rate (logs)	0.631	0.160	0.133	0.391	0.313	0.383	0.148	0.056	0.002
	(0.129)***	(0.110)	(0.138)	(0.118)***	(0.150)**	(0.080)***	(0.133)	(0.123)	(0.179)
N	266	266	266	266	266	266	266	266	266
R^2	0.07	0.01	0.00	0.05	0.03	0.06	0.01	0.00	0.00
Month FE	N	N	N	N	N	N	N	N	N
Year FE	N	N	N	N	N	N	N	N	N

Notes: Panel A estimates Equation (1), which uses levels and includes month and year fixed effects. Panel B estimates the ALDR model of Equation (2) using MoM values. Regressions in Panel B include non-reported controls, which are lagged values (by one quarter) of the MoM crossings and openings (in logs) as well as the Error Correction Term explained in the main body of the text. Each column presents the estimation using data for crossings in each one of the 9 crossing points along the southwest border. The labor market tightness data is measured at the national level and is the across all columns. Robust standard errors are presented in parenthesis. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

There are a few things worth noting in this figure. First, overall, and as described by the dashed line, which represents the fitted line assuming a quadratic relationship, there is a positive relationship between encounters and labor market tightness. The convex shape of the fitted line suggests that this correlation is stronger for periods where labor market tightness is highest. If immigrants were to have incentives to cross the border when labor markets are tight, we intuitively would expect these crossings to increase even more at higher levels of labor market tightness.

Second, there is no clear Republican effectiveness in managing the border for a given level of labor market tightness, as perhaps the public narrative suggests. For similar levels of labor market tightness, there were fewer crossings during the Obama administration than during the Bush administrations.

Third, while it is true that the number of border crossings during the Biden administration has been the highest recorded, it is also true that no other administration over the past nearly 25 years has faced such a tight labor market.

FIGURE 7. Labor market tightness and border encounters, by US administration
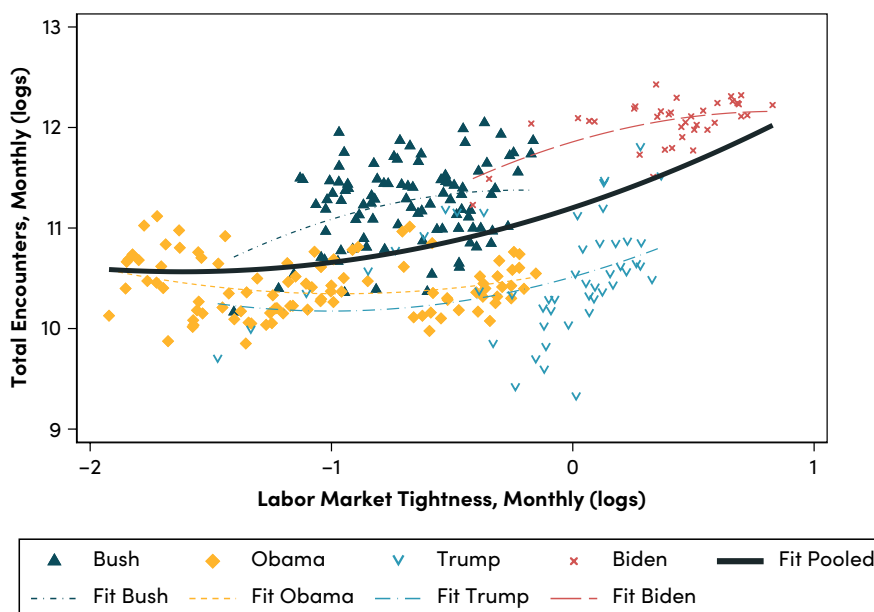
Note: The graph plots the levels of total encounters at the US Southwest Border by quarter (in logs) against the level of Labor Market Tightness as measured by the number of job openings per unemployed person by month (in logs). The observations include data from December 2000 to January 2023. The markers indicate each month occurring under one of four presidential administrations: Bush, Obama, Trump, and Biden. The figure includes a fitted quadratic line between the two variables for the pooled sample (continuous line) and separately for the observations corresponding to each administration (dashed lines, see figure legend).

Finally, it is impossible to ignore the fact that the figure suggests that the observations during the Trump administration years seem like outliers, as most observations are below the fitted line. However, it is worth considering that some of these periods coincide with the peak of the COVID-19 global pandemic, where migration was at an all-time low globally and labor markets were adapting to the new realities on the ground in terms of social distance and isolation, directly affecting labor markets.

But beyond that, a careful look at the relationship between the two variables throughout the Trump years suggests that, while there were fewer crossings *overall*, the positive relationship between crossings and labor market tightness is still there. This is clearly seen in the fits represented by the thin dashed lines in Figure 7. The positively sloped fitted line for the observations that correspond to the Trump administration shows the existence of a positive relationship between crossings and labor market tightness, despite being below the fitted line for the pooled sample. In fact, the different fitted lines in the figure show that such positive relationship exists for every presidential administration, perhaps with the only exception of the Obama years, when the slope is somewhat flatter.

A better way to test for this more rigorously, making sure the results are not driven by seasonality or idiosyncratic fluctuations, is to estimate an expanded version of the specifications (1) and (2) using the totality of the dataset but allowing for different elasticities according to the different presidential terms through interaction terms. Table 3 presents these results.

Columns 1 and 3 of Table 3 show that the point estimate of the elasticity between the two series (in levels or in MoM differences) is positive. Both numbers are similar to the elasticities estimated in Table 1. In both cases, importantly, the interaction of the variable of interest with a Democratic administration (namely Obama and Biden as opposed to Bush and Trump in this sample) is estimated as statistically insignificant. This means that, effectively, the elasticity is statistically the same across Democratic or Republican administrations.

## TABLE 3. Elasticity of crossings to labor market tightness, by presidential term

DV: Border Crossings (logs)				
	Levels	Levels	MoM	MoM
Job Openings Rate (logs)	0.711 (0.219)***	0.787 (0.168)***	0.360 (0.112)***	0.226 (0.109)**
Job Openings Rate (logs) × Democratic Admin	−0.046 (0.230)		−0.046 (0.087)	
Job Openings Rate (logs) × Bush		0.218 (0.254)		0.026 (0.139)
Job Openings Rate (logs) × Obama		−0.263 (0.255)		0.166 (0.112)
Job Openings Rate (logs) × Trump		−0.266 (0.342)		0.216 (0.100)**
Job Openings Rate (logs) × Biden		0.000 (.)		0.000 (.)
N	276	276	265	265
R^2	0.86	0.86	0.85	0.86
Month FE	Y	Y	N	N
Year FE	Y	Y	N	N

Notes: This table allows estimate different elasticities for different periods. Columns 1 and 3 of this table estimate an expanded version of Specification (1) and (2), respectively, that includes an interactions of main independent variable with a dummy that is equal to 1 for periods where there is a Democratic administration. Columns 2 and 4 includes interactions with dummies for periods that coincide with the term of each president since January 2000 until January 2024. Columns 1 and 2 include month and year fixed effects. Columns 3 and 4 include non-reported controls, which are lagged values (by one month) of both he MoM crossings and openings (in logs) as well as the Error Correction Term explained in the text. Robust standard errors are presented in parenthesis. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Columns 2 and 4 allow for a different elasticity for each administration, with the Biden administration serving as the omitted category. In both cases, in levels or MoM, the elasticity of border crossings to job openings is estimated to be positive, but there is no statistical difference when looking at the premiums of these elasticities across different presidencies. The only exception of the Trump presidency in Column 4 that is estimated as positive, implying that the relationship between crossings and labor market was even stronger, not weaker, during the Trump years. This confirms the above observation that even if overall crossings were lower throughout that whole period, it was still the case that crossings increased during times of tight labor markets and vice versa, the same as during all other administrations.

These results are also visualized in Figure 8, which shows the estimated elasticities for the periods according to each administration derived from the results in Table 3. The left panel presents the results using levels, while the right panel presents the results using MoM differences. Here, it is clear that the elasticities, all with positive point estimates, are not statistically different from each other based on a 90 percent confidence interval represented by the whiskers.

FIGURE 8. Estimated elasticity per presidential term
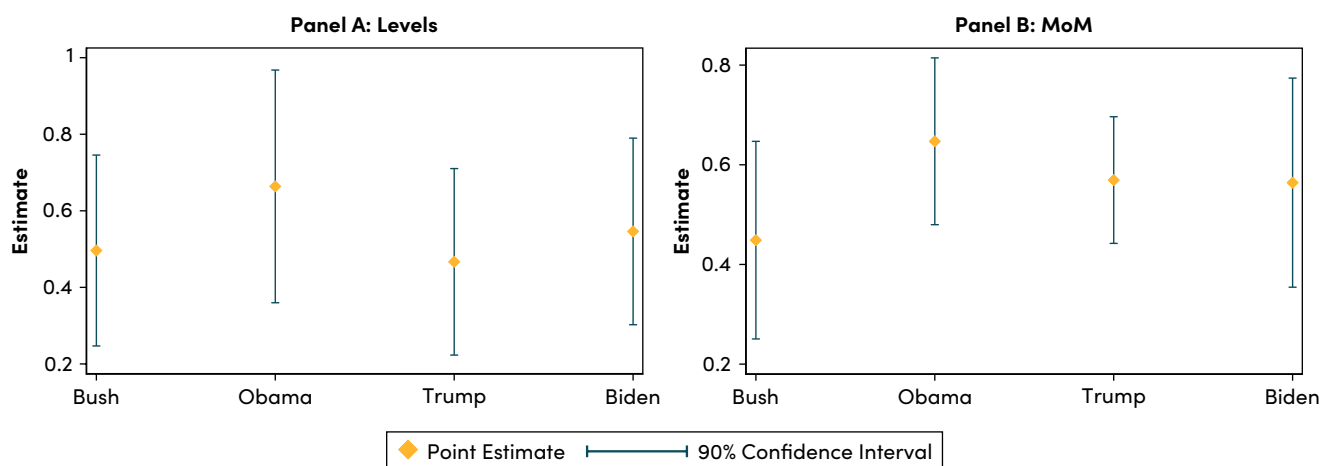
Note: The figure presents the elasticity estimates (β) for the relationship between border crossings and labor market tightness for data corresponding to the months of each presidential administration (Bush, Obama, Trump, and Biden). The left graph plots estimated elasticities based on levels, from specification (1); and the right graph plots estimated elasticities based on MoM, from specification (2). The whiskers represent 90 percent confidence intervals based on robust standard errors.

There is one main takeaway from these estimations: The evidence from the data indicates that the relationship between border crossings and job openings remains consistent over time regardless of whether there is a Democrat or a Republican in the White House. One can, therefore, infer that the US would have experienced a surge in border crossings in 2022–2023 even if there was a Republican sitting in the White House.

6. Concluding remarks

This study illuminates the intricate relationship between economic conditions within the United States and border crossings, revealing a strong positive correlation between labor market tightness and the frequency of border crossings. This relationship underscores the significant role of economic "pull" factors in driving migration patterns toward the US, transcending the influence of varying political administrations and policies over the past quarter century. The persistence of this correlation in different presidential terms underscores the primary role of economic forces in shaping migration trends, rather than the fluctuating political or administrative landscape.

Moreover, the data suggest that had there been a Republican instead of a Democratic administration post 2020, we likely would have seen a very similar surge in border crossings as the ones observed since 2023 given the unusually large labor market tightness in the country.

The findings enrich the dialogue on migration by emphasizing the pivotal influence of the US labor market's condition on border crossings. The observed dynamic suggests that what is often perceived as a "border crisis" is, in many respects, a manifestation of the US economy's labor demands. This challenges the conventional focus on policies that attempt to physically stop immigrants (through border walls, for example) or targeting the economies of migrant-sending countries to improve their economic conditions. Instead, it points to the necessity of reevaluating and potentially expanding legal migration channels in response to the US labor market's demands.

A bipartisan, economically informed approach to immigration reform is imperative. Such an approach should not only accommodate the immediate labor market needs but also anticipate future demographic shifts, ensuring that the US remains competitive and vibrant. An expansion of legal pathways that could satisfy labor demand, as shown by Clemens (2024), would result in a reduced flow of irregular crossings.

In conclusion, the economic interaction between labor market conditions and migration patterns offers a compelling reason to rethink current immigration policies. Embracing a more inclusive, economically driven framework for immigration can transform perceived crises into opportunities for growth, stability, and mutual benefit. This study calls for continued nuanced research on the economic underpinnings of migration, urging policymakers to consider the broader economic imperatives driving cross-border movement.

References

Allen, Treb, Cauê Dobbin, and Melanie Morten. "Border Walls." 2019. Working Paper.

Bahar, Dany, José Morales-Arilla, and Sara Restrepo. "Economic Integration of Venezuelan Immigrants in Colombia: A Policy Roadmap." Center For Global Development, 2022. URL: https://www.cgdev.org/publication/economic-integration-venezuelan-immigrants-colombia-policy-roadmap.

Carare, Alina, Catherine Koh, and Yorbol Yakhshilikov. "Northern Triangle Undocumented Migration to the United States." IMF Working Paper WP/23/17, International Monetary Fund, 2023. https://www.imf.org/en/Publications/WP/Issues/2023/01/27/Northern-Triangle-Undocumented-Migration-to-the-United-States-528663.

Clemens, Michael A. "The Effect of Lawful Crossing on Unlawful Crossing at the US Southwest Border." Working Paper 24-10, Peterson Institute for International Economics, 2024. https://www.piie.com/sites/default/files/2024-04/wp24-10.pdf. JEL Codes: F22, J61, K42.

Clemens, Michael A. and Mariapia Mendola. (2020). "Migration from Developing Countries: Selection, Income Elasticity, and Simpson's Paradox."

Grogger, Jeffrey, and Gordon H. Hanson. (2011). "Income Maximization and the Selection and Sorting of International Migrants." *Journal of Development Economics* 95(1):42–57. https://www.sciencedirect.com/science/article/pii/S0304387810000647.

Jones, Jeffrey M. "Immigration Surges to Top of Most Important Problem List." 2024. https://news.gallup.com/poll/611135/immigration-surges-top-important-problem-list.aspx.

Reuters. "Venezuela Economy Grew 5% in 2023, will Reach 8% this Year—Maduro." 2024. https://www.reuters.com/world/americas/venezuela-economy-grew-5-2023-will-reach-8-this-year-maduro-2024-01-15/. Accessed: 2024-03-26.

Sjaastad, Larry A. (1962). "The Costs and Returns of Human Migration." *Journal of Political Economy* 70(5):80–93. http://www.jstor.org/stable/1829105.

Appendix A. Using quarterly data

Despite using monthly level data for most of the results in the main body of the paper, this section shows that when using quarterly level data on crossings and labor market tightness, I arrive at qualitatively and quantitatively similar results.

Figure A1 reproduces Figure 3 and visualizes the comovement of the two series in levels, detrended or in QoQ differences (i.e., Q1 of 2021 minus Q1 of 2020). Consistently, when the Engle-Granger cointegration test was applied in these two monthly series, the test produced a test statistic of −8.656, above the critical value of −4.024 at the 1 percent significance level. This result suggests the presence of cointegration between the series also at the quarterly level.

Table A1 reproduces the results shown in Table 1 using quarterly time series instead of monthly ones. Naturally, the number of observations is smaller, reducing statistical power for the estimations. However, the elasticities computed both in levels and in QoQ show results similar to those in the main body of the paper.

Figure A2 replicates Figure 7 using quarterly data. Even with fewer observations, the same patterns are observed. There is a positive relationship, using raw quarterly data, between crossings and labor market tightness. And, even in the Trump years, which seem to be below the fitted line, there is a positive relationship within those observations.

Table A2 replicates those of Table 3 but using data aggregated by quarter, rather than by month. The results are robust to this change, while the sharp drop in the number of observations makes some estimates less precise.

FIGURE A1. Southwest border encounters and labor market tightness, quarterly data
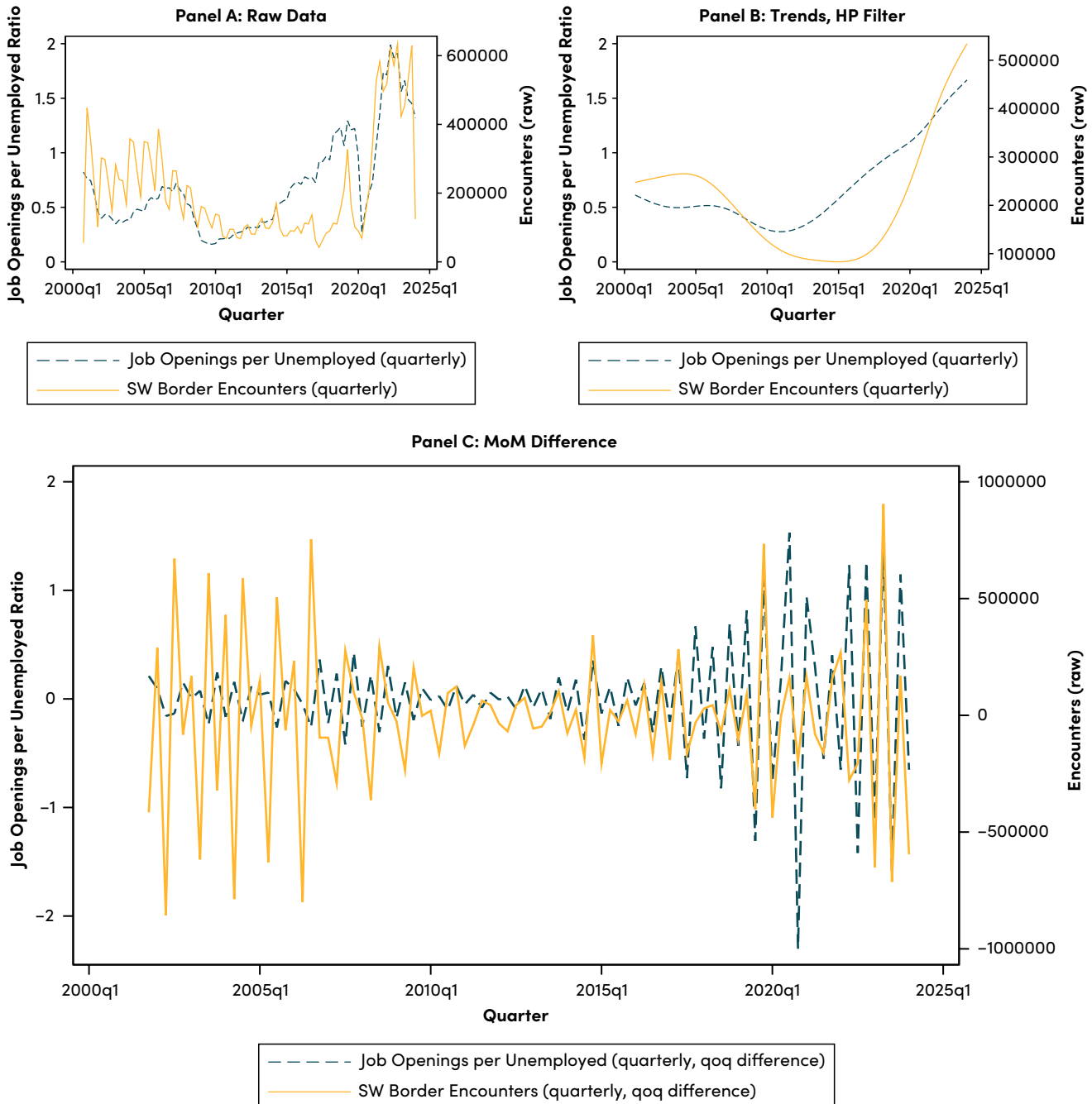
Note: The figure presents several versions of two time series at the quarterly level: border crossings through the US Southwest border (continuous line) and job openings per unemployed person (dashed line). Panel (a) presents plots the series using the raw date; Panel (b) plots the trends computed after applying a Hodrick-Prescott (HP) filter on each series; and panel (c) plots the series after applying a QoQ difference.

FIGURE A2. Labor market tightness and border encounters, by US administration (quarterly data)
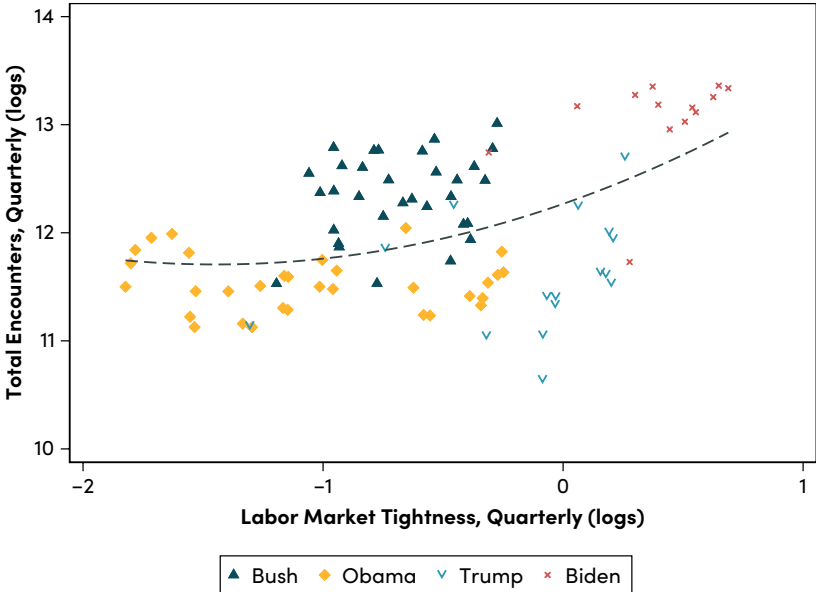
Note: The graph plots the levels of total encounters at the US Southwest border by quarter (in logs) against the level of Labor Market Tightness as measured by the number of job openings per unemployed person by quarter (in logs). The observations include data from Q4 2000 to Q1 2024. The markers indicate each quarter occurring under one of four presidential administrations: Bush, Obama, Trump, and Biden. The figure includes a fitted quadratic line between the two variables.

TABLE A1. Elasticity of crossings to labor market tightness (quarterly data)

DV: Border Crossings (logs)		
	Levels	QoQ
Job Openings Rate (logs)	0.648	0.386
	(0.351)*	(0.110)***
N	92	89
R^2	0.88	0.57
Quarter FE	Y	N
Year FE	Y	N

Notes: The first column estimates Equation (1), which uses levels and includes quarter and year fixed effects. The second column estimates the ALDR model of Equation (2) using QoQ values. The second column includes non-reported controls, which are lagged values (by one quarter) of the QoQ crossings and openings (in logs) as well as the Error Correction Term explained in the main body of the text. Robust standard errors are presented in parenthesis. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

TABLE A2. Elasticity of crossings to labor market tightness, by presidential term (quarterly data)

DV: Border Crossings (logs)				
	Levels	Levels	QoQ	QoQ
Job Openings Rate (logs)	0.659 (0.452)	0.731 (0.264)***	0.383 (0.102)***	0.481 (0.303)
Job Openings Rate (logs) × Democratic Admin	−0.038 (0.466)		0.178 (0.252)	
Job Openings Rate (logs) × Bush		0.260 (0.535)		−0.017 (0.826)
Job Openings Rate (logs) × Obama		−0.351 (0.479)		0.172 (0.437)
Job Openings Rate (logs) × Trump		−0.231 (0.618)		−0.112 (0.250)
Job Openings Rate (logs) × Biden		0.000 (.)		0.000 (.)
N	92	92	89	89
R^2	0.88	0.88	0.58	0.58
Quarter FE	Y	Y	N	N
Year FE	Y	Y	N	N

Notes: This table allows estimate different elasticities for different periods. Columns 1 and 3 of this table estimate an expanded version of Specification (1) and (2), respectively, that includes an interactions of main independent variable with a dummy that is equal to 1 for periods where there is a Democratic administration. Columns 2 and 4 includes interactions with dummies for periods that coincide with the term of each president since Q4 2000 to Q1 2024. Columns 1 and 2 include quarter and year fixed effects. Columns 3 and 4 include non-reported controls, which are lagged values (by one quarter) of both the QoQ crossings and openings (in logs) as well as the Error Correction Term explained in the text. Robust standard errors are presented in parenthesis. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.