FAMILY SEPARATION AND REUNIFICATION UNDER PRESIDENT TRUMP'S ZERO-TOLERANCE POLICY

CATALINA AMUEDO-DORANTES AND JOSE R. BUCHELI[*]

January 11, 2022

Abstract

The past decades have been characterized by sharp increases in the number of families, mainly from Central America's Northern Triangle, apprehended by the U.S. Border Patrol. In an effort to stem those flows, the Trump administration implemented a zero-tolerance policy (ZTP) aimed at criminally prosecuting all adults crossing the border without authorization, regardless of whether they traveled with children or sought asylum upon entry. Thousands of children were separated from their parents, reclassified as 'unaccompanied,' and referred to the custody of the Office of Refugee Resettlement (ORR). We examine how ZTP impacted the volume of unaccompanied minors, their time in ORR custody, and their likelihood of family reunification. We show that ZTP boosted the ranks of unaccompanied minors through family separations, lengthened their time in ORR custody, and reduced their odds of family reunification. Given the growing number of families from the Northern Triangle seeking asylum in the United States, the documented mental health problems of separated children, and the rotating nature of immigration policies based on the administration in place, understanding the implications of policies like ZTP is imperative.

JEL Codes: K37, K38, J15

Keywords: Family separation, family reunification, Zero Tolerance Policy, Unaccomapnied Minors.

[*]Amuedo-Dorantes: University of California Merced, 5200 N. Lake Road, Merced, CA 95343 (email: camuedo-dorantes@ucmerced.edu) (phone: 619-300-6362) (ORCID = 0000-0002-4750-309X); Bucheli: New Mexico State University, 1320 East University Ave., Las Cruces, NM 88003 (email: jbucheli@nmsu.edu) (phone: 505-480-2780) (ORCID = 0000-0002-3311-8086).

"I have put in place a 'zero-tolerance' policy for illegal entry on our Southwest border. If you cross this border unlawfully, then we will prosecute you. It's that simple. If you are smuggling a child, then we will prosecute you, and that child will be separated from you as required by law."[1] (Jeff Sessions, May 7, 2018)

1.   Introduction

The number of unaccompanied minors apprehended by immigration authorities along the U.S.-Mexico border rose by an astonishing 300% over the past decade, from 17,909 in 2010 to a peak of 70,418 children in 2019 (CBP, 2021b). That figure has continued to rise, reaching 144,834 minors during FY2021 (CBP, 2021a). Most studies on the root causes of such an increase point to violence and poverty in the Northern Triangle countries of El Salvador, Guatemala, and Honduras as the primary drivers (Clemens, 2021; UNICEF-UNHCR, 2020). Others have also underscored the role played by policy changes (e.g., Amuedo-Dorantes and Puttitanun 2016). In that vein, we explore the impact of a highly controversial policy from the Trump administration— namely, the Zero-Tolerance Policy (henceforth, ZTP)—on the apprehension of unaccompanied minors through family separations.

On April 6, 2018, then-U.S. Attorney General Jeff Sessions announced a sweeping "zero-tolerance" policy aimed at curtailing the growing flows of families reaching the U.S.-Mexico border, most of whom were turning themselves in to Border Patrol officers seeking asylum. Until then, unauthorized border crossers who were *not* an enforcement priority, as in the case of most individuals in family units, were usually placed in civil removal proceedings for unauthorized presence but not criminally prosecuted (CRS, 2021). This practice changed with the

---

implementation of ZTP, as it required *all* adults entering without authorization to be criminally prosecuted, regardless of whether they traveled with children or sought asylum upon entry.

As adults were referred to the U.S. Department of Justice for prosecution and placed in federal criminal facilities, children were separated from their families to comply with the *Flores Settlement* agreement requiring minors to be held in the "least restrictive setting." Furthermore, following the *2008 Trafficking Victims Protection Reauthorization Act* (TVPRA), minors originating from contiguous countries, such as Mexico, were returned home, whereas those from non-contiguous countries were reclassified as 'unaccompanied' and placed under ORR custody (Ryo and Humphrey 2021), barring "exceptional circumstances." Due to the differential treatment of minors regulated in the *Flores Settlement* agreement and the 2008 TVPRA, ZTP likely raised the number of unaccompanied minors apprehended by U.S. Border Patrol along the border through the separation of thousands of families, most of which were coming from the Northern Triangle (ACLU, 2018).

Even though President Trump issued an executive order on June 20, 2018, ending the policy amid public outrage and political pressure (Department of Justice, 2021), more than 2,000 children were still waiting to be reunified with their families three years later (Interagency Task Force on the Reunification of Families, 2021). To date, despite the damage caused, we have a limited understanding of the extent to which ZTP boosted the ranks of unaccompanied minors through family separations, lengthened the time children were held under ORR custody, and harmed family reunification prospects due to lack of planning and proper communication.

We address that gap in the literature using two datasets gathered through Freedom of Information Act requests from the Department of Homeland Security. *First*, using Border Patrol data on monthly apprehensions of unaccompanied minors along the southwest border by country

of origin, we explore how ZTP increased the number of unaccompanied children through family separations.   To that end, we compare *pre-* vs. *post*-policy changes in the volume of unaccompanied minors from the Northern Triangle, who must remain in ORR custody once separated from their families and reclassified as unaccompanied minors, to *pre-* vs. *post*-policy changes in the volume of unaccompanied minors from Mexico, who are usually returned. We find that, through the separation of families involved in the policy's implementation, ZTP raised the number of unaccompanied minors by 77 percent.

Subsequently, we use a second dataset on unaccompanied minors referred to ORR from October 2015 through October 2019 to explore how ZTP lengthened children's time under the agency's custody and harmed their family reunification prospects. Estimates from survival and competing risks models reveal the very damaging impact of ZTP on both outcomes. We find that children's discharge rate decreased by 38%, lengthening their duration under ORR's custody. Furthermore, their odds of family reunification dropped by 49% and, even one year after being placed under ORR's watch, family reunification remained almost 20% less likely than before ZTP was implemented. According to internal government reviews, the Department of Homeland Security failed to coordinate with other departments, including the Department of Health and Human Services, on the implementation of ZTP and to provide notice or guidance for the separation of children (Department of Justice, 2021). The lack of coordination did not allow ORR to prepare for the increase in the volume of unaccompanied minors, left the department "unable to provide prompt and appropriate care for separated children," and presented operational challenges for facilities that housed immigrant minors (Department of Health and Human Services, 2020). It also caused delays in family reunifications as there were no policies to facilitate communication between children in ORR custody and their parents. In some cases, this resulted in delays of up to

two months before separated minors and their parents could establish contact (Department of Justice, 2021).

Overall, the study provides insight on the impact of the Trump administration's Zero-Tolerance Policy on the volume of unaccompanied minors, the duration of their custodial arrangements, and their odds of family reunification. Given the increasing number of families from the Northern Triangle countries traveling with young children and seeking asylum in the United States, along with the widely documented greater risk of depression, post-traumatic stress, and other mental health problems among children in institutional settings (*e.g.*, Linton, Griffin, and Shapiro, 2017; Carey, 2018), understanding the implications of this type of policy approach to immigration enforcement is well-warranted.

2.   Legislative Background

As recently as FY2011, children traveling alone or as part of a family unit represented only 7% of migrants apprehended while crossing the southwest border. Their share increased almost four-fold (to 25% of all apprehensions) during FY2016 and to 38% by 2019.[2] Most of these minors migrated from the Northern Triangle, escaping widespread poverty and violence exacerbated by political instability, demographic and environmental factors at home (Capps *et al.*, 2019). At the same time, a strong labor market and the possibility of family reunification in the United States provided further incentives for children traveling North. U.S. immigration authorities, who had been largely successful in deterring adult migrants from Mexico through expedited removals and

---

[2] Authors' calculations based on U.S. Border Patrol, "U.S. Border Patrol Fiscal Year 2011 Sector Profile," "U.S. Border Patrol Fiscal Year 2016 Sector Profile," and "U.S. Border Patrol Fiscal Year 2019 Sector Profile." Accessed November 2021. Available at: https://www.cbp.gov/newsroom/media-resources/stats .

the criminal prosecution of reentries, were unable to employ the same strategies in response to the surging flow of Central American families or minors.[3]

To understand how ZTP might have impacted the volume of apprehended unaccompanied minors and their time in custody and family reunification prospects, it is critical to consider the legal framework in which the policy was adopted. There are three key pieces of legislation that regulate the processing, treatment, and release of migrant children detained along the border. These include the *Flores* settlement agreement reached in 1997, the Homeland Security Act of 2002, and the 2008 Trafficking Victims Protection Reauthorization Act (TVPRA) (Ryo and Humphrey, 2021).[4] The *Flores* settlement agreement emanated from a lawsuit filed in 1985 by migrant children against the government to challenge the procedures involved in their detention, treatment, and release. The parties reached an agreement in 1997, according to which children under government custody should be held in the "least restrictive setting." This standard implied that children accompanying adults being criminally prosecuted under ZTP could not be placed in the same facilities.

In 2002, the Homeland Security Act was enacted. This legislation dissolved the old Immigration and Naturalization Service (INS) and created the new Department of Homeland Security (DHS), which included three agencies responsible for the enforcement of immigration law: U.S. Citizenship and Immigration Services, Immigration Customs Enforcement, and Customs and Border Protection. The new law transferred authority over the processing and care of

---

[3] During prior periods of increased unaccompanied minor flows, as during 2014, several measures were adopted to stem the flows, such as information campaigns in source countries to discourage emigration and the creation of the Central American Minors Refugee and Parole Program (CAM). Even though the program, which allowed some Central American children to apply for asylum in their home countries, had a limited reach by being restricted to children with parents legally residing in the United States, President Trump ended it in 2017 and, overall, adopted a more punitive approach.

[4] See Table A1 in the appendix.

unaccompanied minors from the old INS to ORR, under the U.S. Department of Health and Human Services, to ensure that the least restrictive setting would be observed, as regulated in the 1997 *Flores* settlement agreement. Further, children were to be released to parents, family, or other sponsors "without unnecessary delay" when feasible. During ZTP, children separated from prosecuted adults were transferred to ORR custody.

Finally, in 2008, the Trafficking Victims Protection Reauthorization Act (TVPRA) was enacted by Congress. The new legislation contemplated two different procedures for processing unaccompanied minors based on whether they originated from contiguous countries (*i.e.,* Canada and Mexico) or non-contiguous countries. Children in the first group were to be repatriated if there were no grounds for asylum; otherwise, they were transferred to the custody of ORR. However, minors from non-contiguous countries, including the Northern Triangle, were placed under ORR custody, barring "exceptional circumstances." This differential treatment of children, along with growing backlogs in immigration courts due to the criminalization of unauthorized entry into the United States,[5] led to an ever-expanding number of unaccompanied minors being held under ORR custody, as families back home probably assumed their children were staying in the United States permanently (Amuedo-Dorantes and Puttitanun 2016).

Amid this institutional environment, and as flows of both unaccompanied minors and family units seeking asylum increased along the U.S.-Mexico border, the Trump administration announced its Zero-Tolerance Policy in April of 2018. The policy aimed to criminally prosecute *all* adults entering without authorization, including those seeking asylum upon entry, regardless of whether they were traveling with children. In fact, asylum officers were instructed to consider their

---

[5] The criminalization of unauthorized entry into the United States dates to the 1996 Illegal Immigration Reform and Immigrant Responsibility Act (IIRIRA), where "illegal entry" was deemed a misdemeanor and "illegal reentry" was considered a felony. Their prosecution was revived with Operation Streamline in 2005, with immigration cases in the federal court system rising by 159% (Corradini *et al.*, 2018).

unauthorized entry as grounds against their asylum claim (Human Rights Watch, 2018). As parents were prosecuted, their children were separated and reclassified as unaccompanied minors. Family separations would often last for weeks or months while the cases were resolved. When asylum cases were rejected, parents were commonly deported without their children or even knowledge of their whereabouts (Jones, Obser, and Podkul, 2017). This treatment of families, which violated basic human rights and the principle of non-refoulment (OHCHR, 2014), caused public outrage. On June 20, 2018, President Trump issued an executive order ending the policy; however, thousands of children remained separated from their families three years later (Interagency Task Force on the Reunification of Families, 2021). In what follows, we assess how ZTP impacted the volume of unaccompanied minors, the duration of their custodial arrangements, and their family reunification odds.

3. Data and Descriptive Statistics

A) Data on Unaccompanied Minors

We work with data gathered through two separate Freedom of Information Act (FOIA) requests on apprehensions of unaccompanied minors by U.S. Border Patrol and on unaccompanied minors referred to ORR. The first dataset includes aggregate information on over 330,000 apprehensions of unaccompanied minors by month, border sector, and country of origin conducted by Border Patrol along the southwest border from October 2013 through December 2019. These minors encompass children younger than 18 years of age deemed "inadmissible aliens" under Title 8 of the United States Code Section 1227 (Deportable Aliens) while crossing the U.S. border without legal authorization. The dataset includes children traveling by themselves and those

separated from their parents or other adult relatives and reclassified as unaccompanied minors under ZTP.[6]

In Panel A, Table 1, we differentiate among a pre-ZTP period, spanning from October 2013 through March 2018; a ZTP period when the policy was in place from April through June 2018; and a post-ZTP period spanning from July 2018 through December 2019. Throughout the study period, the number of unaccompanied minors from the Northern Triangle apprehended by Border Patrol represented approximately 80% of the flow, increasing by about 1,000 apprehensions per month during ZTP and continuing thereafter, even after the policy had officially ended, albeit at a more moderate rate. In contrast, the number of migrant children from Mexico apprehended every month dropped by 15% during ZTP to barely rise after the policy's suspension. These statistics support the notion that ZTP impacted minors from the Northern Triangle differently than those from Mexico, possibly driven by the fact that 96% of separated families during the policy originated in the Northern Triangle (ACLU, 2018).

As noted in Section 2, children from non-contiguous countries and, in exceptional cases, Mexico are referred to ORR as the agency responsible for their custody and care. ORR determines their temporary placement and, when applicable, reunites them with family members or other sponsors in the United States. Hence, to understand the impact of ZTP on the duration unaccompanied minors remained in ORR custody and on their family reunification prospects, we use a second dataset that includes individual-level information on all children referred to ORR after being detained by Border Patrol between October 2015 and October 2019. The sample

---

[6] Note that, while we cannot distinguish between the two groups, ZTP should have only impacted the volume of reclassified minors after being separated from their families, as children traveling alone were not affected by the policy. Therefore, changes in the overall volume of apprehended unaccompanied minors during the three-month period that the policy was in place should mostly originate from changes in the volume of minors, most of them from the Northern Triangle, separated from their families and reclassified as unaccompanied.

consists of 208,000 minors between the ages of 0 and 18, with the youngest children only a few months old. The vast majority come from Guatemala (45.2%), Honduras (25.6%), and El Salvador (22.7%), followed by Mexico (2.6%) and other countries (3.9%). Over two-thirds of the study population are males, and approximately 12,200 children had not been reunited with their families by the end of the study period. Panel B in Table 1 shows how the number of unaccompanied minors referred to ORR rose by 11% during ZTP, their time in ORR custody lengthened from 41.6 days to 64.2 days, and the share being reunified with family dropped from 95% to 83%.

B)   Additional Data

We gather data from various sources to account for time-varying country-specific traits likely altering the volume of unaccompanied minors apprehended at the border—namely, *push factors*. To account for the role played by violence in the origin countries, we obtain information on homicide rates from the United Nations Office on Drugs and Crime country profiles. In addition, we use Human Development Index (HDI) scores published by the United Nations Development Programme in its annual report to capture economic and human capital development likely impacting children's opportunities in each of these countries. We also gather data on UNICEF's infant and child mortality rates to address differences in access to critical health care and social services in each country, as well as information on each country's employment-to-population ratio from the World Bank to account for labor market conditions and economic opportunities at each origin. The bottom of Panel A in Table 1 presents descriptive statistics for these variables. Throughout the study period, the average homicides rate remained above 33 homicides per 100,000 population, placing the Northern Triangle and Mexico among the most violent regions in the world. In terms of economic opportunities, only 60% of the total working-age population were employed, and the average HDI score stood at 0.68, placing the region in the

medium human development category. In consonance, infant and child mortality rates stood above the average for Latin America and the Caribbean.

Finally, to account for the role of border enforcement, which can undoubtedly impact apprehensions, we gather data on the annual budget assigned by Congress to U.S. Border Patrol for border security operations. In addition, we collect information on the level of interior immigration enforcement and sanctuary policies in the localities where children are held while in ORR custody, which we use when modeling minors' placement in a particular program, as well as their duration in ORR custody and family reunification odds.[7]

4.   Methodology

Our main goal is to learn about the impact that the Trump administration's ZTP might have had on the volume of apprehended unaccompanied minors through family separations, as well as on the duration of children's custodial arrangements and their family reunification prospects. While the descriptive statistics in the prior section address some of these questions, they fail to account for other child, policy, geographic and temporal traits likely impacting these outcomes. In this section, we address that shortcoming.

A)   Unaccompanied Minor Apprehensions during ZTP

We start by assessing the role of the ZTP in boosting the ranks of unaccompanied minors through family separation by estimating the following benchmark model:

(1) $log\ y_{bps,c,t} = \alpha + \beta_1 ZTP_t \times NT_c + \beta_2 Post\ ZTP_t \times NT_c + \beta_3 NT_c + X_{c,t}\beta_4 +$

$\beta_5 BP\ Budget_t + \gamma_{bps} + \gamma_t + \varepsilon_{bps,c,t},$

---

[7] We account for the intensity of local immigration enforcement using the activation of various policies at the county level, as estimated in Amuedo-Dorantes and Bucheli (2020). Data on sanctuary policies are obtained from the Center for Immigration Studies. In our analyses, we use a dichotomous variable to account for the existence of a sanctuary policy in a given jurisdiction.

where $log\ y_{bps,c,t}$ stands for the log of unaccompanied minors apprehended in border patrol sector bps, while migrating from country of origin c, during month-year t. This level of aggregation allows us to account for ZTP's distinct impact on children from the Northern Triangle due to the regulation of those flows, relative to those from Mexico, and for each border sector's location and immigration enforcement history. To estimate the impact of ZTP in shaping apprehensions of unaccompanied minors, we distinguish three periods: (1) an initial period preceding the implementation of the policy between October 2013 through March 2018; (2) a second period (ZTP_t), from April 2018 through June 2018, during which the policy was in place; and (3) a final period ($Post\ ZTP_t$) spanning from President Trump's executive order placing family separations on hold through the end of our sample in December 2019. The period preceding the policy enactment is used as reference. We then interact the dummies indicative of each period with an indicator for whether the children originated from the non-contiguous nations in the Northern Triangle. Following the reclassification of separated children as unaccompanied and the distinct treatment of those minors based on the 2008 TVPRA, the coefficients on these interaction terms inform about changes in the volume of unaccompanied minors due to family separations taking place under ZTP.

Equation (1) also accounts for migration *push* factors, as captured by each origin country's homicide rates, employment-to-population ratios, human development indexes, and youth mortality rates included in vector $X_{c,t}$. In addition, we incorporate information on the monthly average of the U.S. Border Patrol fiscal year budget ($BP\ Budget_t$), as well as month-year and border sector fixed effects to account for unobserved period-specific and time-invariant border patrol sector traits impacting apprehensions. Standard errors are clustered at the (border patrol

sector×country of origin) level to account for variation in apprehensions of unaccompanied minors by nationality and border patrol sector.[8]

Identification hinges on the activation of ZTP being uncorrelated with changes in the volume of unaccompanied minors from the Northern Triangle, relative to Mexico, other than through ongoing family separations. Reverse causality appears unlikely. Based on the Presidential Memorandum of April 6, 2018,[9] the tightening of border apprehensions and prosecutions under ZTP was motivated by an increasing backlog in immigration courts and the supervised release of unauthorized migrants with pending cases. In addition, the attorney general's memorandum directing the adoption of ZTP along the southwest border issued on the same day was alluded to the overall rise in unauthorized crossings, without any mention to distinctions by nationality.[10]

However, ZTP might have affected the country composition of apprehended unaccompanied minors through channels other than family separations. For instance, ZTP could have deterred migrants from certain countries from attempting to cross the border based on their differential treatment under the policy. Given that TVPRA referred minors from the Northern Triangle to ORR custody, children from the Northern Triangle might have been discouraged from crossing into the United States. However, in that case, our estimates of the impact of ZTP would be downward biased, given that almost all separated families came from the Northern Triangle. In addition to addressing some of these concerns through the inclusion of county/month fixed effects and country-specific trends that account for potentially unobserved factors driving changes

---

[8] Results do not change when we compute robust standard errors, instead.

[9] "Ending "Catch and Release" at the Border of the United States and Directing Other Enhancements to Immigration Enforcement," 83 Fed. Reg. 16179 (April 13, 2018)

[10] U.S. Department of Justice. "Attorney General Announces Zero-Tolerance Policy for Criminal Illegal Entry," April 6, 2018. Available at: https://www.justice.gov/opa/pr/attorney-general-announces-zero-tolerance-policy-criminal-illegal-entry.

in the composition of unaccompanied minors apprehended during the three-month period that the policy lasted, we conduct an event-study analysis to check on our two identifying assumptions. Specifically, we estimate the following event study model:

(2) $\quad log\ y_{bps,c,t} = \alpha + \sum_{t=-7}^{-2} \tau_t \cdot 1(ZTP_t = 1) \times NT_c + \sum_{t=0}^{7} \rho_t \cdot 1(ZTP_t = 1) \times NT_c +$

$\quad\quad \beta_1 NT_c + X_{c,t}\beta_2 + \beta_3 BP\ Budget_t + \gamma_{bps} + \gamma_t + \varepsilon_{bps,c,t}$

where the indicator function $1(ZTP_t = 1)$ represents the tth month before or after the implementation of ZTP. Pre-existing differences in apprehensions between children from the Northern Triangle and Mexico are captured by the coefficients in vector τ_t. In turn, the coefficients in vector ρ_t capture the differential impact of ZTP on apprehensions of unaccompanied minors by origin up to six months after its activation.[11] This approach enables us to gauge if, after controlling for factors included in equation (1), apprehensions of unaccompanied minors from the Northern Triangle already differed from those of Mexico prior to the activation of ZTP, in which case one could argue the policy was implemented in response to that difference or, rather, only started to diverge following the policy adoption.

B) **Duration in Custody and Family Reunification during ZTP**

We next examine how the activation of ZTP might have altered the amount of time minors were held in ORR custody and their family reunification prospects due to the administration's lack of planning for large-scale family separations. When examining how ZTP might have impacted the duration of time that children were in ORR custody, we have to adequately address right censoring in our data—namely, the fact that for some children, a discharge is never observed during our study period—as well as the nonnormal distribution of duration data. To that end, we

---

[11] Periods before $t = -6$ and after $t = 6$ are binned up into $t = -7$ and $t = 7$, respectively.

use a semiparametric Cox proportional hazard model, which enables us to quantify the impact of ZTP on the discharge hazard of a child based on personal traits and characteristics of the locality where children were placed as follows:

$$(3) \quad \lambda\big(t|W_{i,c,t}\big) = \lambda_0(t)\exp\big(W_{i,c,t}\theta\big)$$

$$= \lambda_0(t)\exp\big(\beta_1 ZTP_t + \beta_2 Post\ ZTP_t + X_i\beta_3 + Z_{c,t}\beta_4 + \gamma_c + \gamma_m + trend\big),$$

where $\lambda\big(t|W_{i,c,t}\big)$ is the instantaneous failure rate at time t (the "hazard") for the ith child placed in county c. The advantage of the Cox proportional hazard model is that it makes no assumptions about the shape of the hazard over time, which could increase, decrease, or do both at distinct periods. The main assumption is that covariates multiplicatively shift the baseline hazard, but we do not need to make assumptions about $\lambda_0(t)$. Our interest is on how ZTP impacted the discharge hazard, specifically whether it lowered it, lengthening the duration in ORR custody. To that end, vector $W_{i,c,t}$ includes the temporal dummies indicative of when ZTP was in place and the post-policy period. The model also accounts for child-specific traits potentially affecting the placement decision, such as the minor's gender, age, and origin, through vector X_i. In addition, we include information on the enforcement climate in the county, as captured by its level of interior immigration enforcement and the presence of a sanctuary policy ($Z_{c,t}$). They may alter the willingness of family and friends to come forward,[12] extending the duration in ORR custody and postponing family reunification. Finally, we include a time trend, as well as county and month fixed effects and, in alternative model specifications, country-specific time trends.

Subsequently, we explore how ZTP affected children's family reunification prospects. During our study period, close to 94% of minors were reunified with family members. Still, more

---

[12] In some cases, ORR fingerprinted all members of families attempting to sponsor an unaccompanied minor, and then shared this information with ICE (Capps *et al.* 2019).

than 12,000 children aged out or were either removed, ran away, or discharged to immigration or law enforcement agencies. Because our data are right-censored, we do not observe the type of discharge some children ultimately experience. Furthermore, among those discharged, some are reunified with family, whereas others are not. To allow for the multiple failure modes, we estimate the following competing risks model:

$$(4) \quad \bar{h}_1\big(t|W_{i,c,t}\big) = \bar{h}_{1,0}(t)\exp\big(W_{i,c,t}\theta\big)$$

$$= \bar{h}_{1,0}(t)\exp\big(\beta_1 ZTP_t + \beta_2 Post\ ZTP_t + X_i\beta_3 + Z_{c,t}\beta_4 + \gamma_c + \gamma_m + trend\big)$$

where $\bar{h}_1\big(t|W_{i,c,t}\big)$ stands for the probability of family reunification for the ith child in county c happening before time t in the presence of competing risks (alternative discharge types). Similar to the Cox proportional hazards model, it is assumed that the covariates multiplicatively shift the baseline sub-hazard $\bar{h}_{1,0}(t)$, which is left unspecified for greater flexibility. Likewise, the vector of controls, $W_{i,c,t}$, includes the same controls as in equation (3).

5.   Results

A)   Unaccompanied Minor Apprehensions during ZTP

Table 2 displays the results from estimating various model specifications of equation (1). Regardless of the controls included, apprehensions of unaccompanied minors from the Northern Triangle, who are not subject to expedited removal as Mexicans are, significantly rose during the implementation of ZTP. In our baseline specification, we observe a 49% increase in apprehensions of unaccompanied minors from the Northern Triangle, compared to those from Mexico, following the activation of ZTP. This estimate rises to 77% when we account for migration push factors and Border Patrol's budget in column (3). Furthermore, the differential impact of ZTP on apprehensions of unaccompanied minors from the Northern Triangle, compared to those of Mexicans, seems to persist after the policy's suspension.

As noted earlier, an important limitation of the empirical strategy used in Table 2 refers to the possibility of pre-ZTP differential trends in apprehensions of unaccompanied minors from the Northern Triangle relative to those from Mexico. We estimate the event study model in equation (2) to gauge if that was the case.

Figure 1 displays the estimated coefficients (τ_t and ρ_t), along with 95% confidence intervals. All estimates for the periods preceding the activation of the ZTP are close to zero, strongly supporting the lack of differential pre-trends in apprehensions of unaccompanied minors from the Northern Triangle vs. Mexico. In addition, we observe a clear break in this trend immediately after the activation of ZTP—a difference that remains statistically different from zero for most of the next six months. Altogether, the results in Figure 1 support the assumption of parallel trends in apprehensions of unaccompanied minors from the Northern Triangle and Mexico prior to ZTP and, in turn, the interpretation of the policy impacts in Table 2 as causal.

B)   Duration in Custody and Family Reunification during the ZTP

After assessing the impact of ZTP on the volume of unaccompanied minors, we turn to examine how the policy implementation might have altered the *duration in ORR custody* and the children's *prospects of being reunified with family*. To that end, we first estimate the discharge hazard ratios during and after ZTP, relative to the pre-policy period, using a Cox proportional hazard model. Results from estimating the model in equation (3) are shown in Table 3. We estimate various model specifications that progressively include more controls, and our findings prove robust to their inclusion. Based on the most complete model specification in column (4), the discharge rate of unaccompanied children dropped by 38% during ZTP, but recovered in the post-ZTP period.

To better understand the long-term impact of the policy on children's duration in ORR custody, Figure 2 plots the corresponding Kaplan-Meier survival rates. It shows that two months after being transferred to ORR custody, about 38% of unaccompanied minors were still under the agency's watch, relative to 20% before ZTP. Even after the policy's suspension, approximately 25% of the children remained in ORR custody two months after their transfer. In fact, the probability of remaining in ORR custody before, during, and after ZTP only converged to zero eight months after the children were initially transferred to ORR.

We next explore how ZTP impacted family reunification. Table 4 displays the family reunification hazards from various model specifications of the competing risks model described in equation (4). As with prior outcomes, the policy impact appears robust to the inclusion of additional controls. The estimates from the most complete model specification in column (4) reveal that the odds of family reunification during ZTP were 49% lower than prior to the policy's activation, even though they improved after the policy's suspension.

As a final note, Figure 3 underscores the catastrophic consequences of ZTP on these children's family reunification odds by displaying cumulative reunification incidence curves. It shows that only 50% of the children had been reunified with their families two months after being placed in ORR custody, relative to close to 80% prior to ZTP. Perhaps most tragically, one year after being placed under ORR's watch, family reunification remained almost 20% less likely than before ZTP was implemented.

6.   **Summary and Conclusions**

Using two separate datasets on apprehensions of unaccompanied minors and unaccompanied minors referred to ORR gathered through FOIA requests, we examine the impact of the Trump administration's Zero-Tolerance Policy on boosting the ranks of unaccompanied

minors through family separation, as well as on children's duration in ORR custody and their family reunification prospects.

The findings reveal the very damaging impact of the policy in all respects. *First*, the adoption of ZTP resulted in a 77% increase in apprehensions of unaccompanied minors due to family separations, particularly among Central American families. Event studies further confirm how the estimated differential policy impact did not predate its adoption and, most worrisomely, its effect lasted long after its suspension by President Trump in June 2018. *Secondly*, the program also altered the duration children remained in ORR custody by lowering their discharge rate from the agency's watch by 38%. As a result, two months after being transferred to ORR custody, almost double the share of children remained under the agency's watch when compared to before the policy's adoption (38% vs. 20%). Lastly, the odds of family reunification during ZTP dropped by 49% relative to the period prior to the policy's activation. Consequently, two months after being placed in ORR custody, only 50% of the children were successfully reunified with family, as opposed to 80% prior to ZTP. In fact, the odds of being reunified with family were still 20% lower one year after the children were placed in ORR custody than before the implementation of the policy.

In sum, ZTP appears to have had very damaging impacts on children and the treatment they received. Given the potential socio-emotional, behavioral, and health implications of separation, as captured by increased anxiety, depression, post-traumatic stress, and attention-deficit disorders that clinicians have observed in detained children,[13] further attention to the implications of adopting harsh immigration enforcement policies is well-warranted.

---

[13] "A Troubling Prognosis for Migrant Children in Detention: 'The Earlier They'Re Out, the Better.'" *The New York Times*, June 18, 2018. Available: https://www.nytimes.com/2018/06/18/health/migrant-children-mental-health.html.

Declarations

Competing interests: The authors have no competing interests to declare that are relevant to the content of this article.

References

American Civil Liberties Union. 2018. *Family Separation by the Numbers*.
    https://www.aclu.org/issues/family-separation.

Amuedo-Dorantes, Catalina, and Jose R. Bucheli. 2020. "A Look Ahead at the 2020 US
    Elections: The Role of Candidate Diversity in Political Participation." *AEA Papers and
    Proceedings* 110: 436–41. https://doi.org/10.1257/pandp.20201116.

Amuedo-Dorantes, Catalina, and Thitima Puttitanun. 2016. "DACA and the Surge in
    Unaccompanied Minors at the US-Mexico Border." *International Migration* 54 (4): 102–17.
    https://doi.org/10.1111/imig.12250.

Capps, Randy, Doris Meissner, Ariel G. Ruiz Soto, Jessica Bolter, and Sarah Pierce. 2019.
    "From Control to Crisis: Changing Trends and Policies Reshaping U.S.-Mexico Border
    Enforcement." *Migration Policy Institute*.

Carey, Benedict. 2018. "A Troubling Prognosis for Migrant Children in Detention: 'The Earlier
    They'Re Out, the Better.'" *The New York Times*, June 18, 2018.
    https://www.nytimes.com/2018/06/18/health/migrant-children-mental-health.html.

Clemens, Michael A. 2021. "Violence, Development, and Migration Waves: Evidence from
    Central American Child Migrant Apprehensions." *Journal of Urban Economics* 124:
    103355. https://doi.org/10.1016/j.jue.2021.103355.

Congressional Research Service. 2021. *The Trump Administration's "Zero Tolerance"
    Immigration Enforcement Policy*. Vol. R45266.
    https://crsreports.congress.gov/product/pdf/R/R45266.

Corradini, Michael, Jonathan Allen Kringen, Laura Simich, Karen Berberich, and Meredith
    Emigh. 2018. "Operation Streamline: No Evidence That Criminal Prosecution Deters
    Migration." *Vera Institute of Justice*.
    https://www.vera.org/downloads/publications/operation_streamline-report.pdf.

Human Rights Watch. 2018. *Q&A: Trump Administration's "Zero-Tolerance" Immigration
    Policy*. https://www.hrw.org/news/2018/08/16/qa-trump-administrations-zero-tolerance-
    immigration-policy.

Interagency Task Force on the Reunification of Families. 2021. *Initial Progress Report*. U.S.
    Department of Homeland Security. www.dhs.gov/publication/family-reunification-task-
    force-progress-reports.

Jones, Jessica, Katharina Obser, and Jennifer Podkul. 2017. *Betraying Family Values: How
    Immigration Policy at the United States Border Is Separating Families*. Lutheran
    Immigration and Refugee Service (LIRS), the Women's Refugee Commission (WRC), and
    Kids in Need of Defense (KIND). https://supportkind.org/wp-
    content/uploads/2017/03/BetrayingFamilyValues_Feb2017.pdf.

Linton, Julie M., Marsha Griffin, and Alan J. Shapiro. 2017. "Detention of Immigrant Children." *Pediatrics* 139 (5). https://doi.org/10.1542/peds.2017-0483.

Office of the United Nations High Commissioner for Human Rights. 2014. *Recommended Principles and Guidelines on Human Rights at International Borders*. Geneva, Switzerland. https://www.ohchr.org/Documents/Issues/Migration/OHCHR_Recommended_Principles_Guidelines.pdf.

Ryo, Emily, and Reed Humphrey. 2021. "Children in Custody: A Study of Detained Migrant Children in the United States." *UCLA Law Review* 136: 136–211. https://www.uclalawreview.org/children-in-custody-a-study-of-detained-migrant-children-in-the-united-states/.

U.S. Customs and Border Protection. 2021a. *Southwest Land Border Encounters (By Component): Fiscal Year 2021 Stats*. https://www.cbp.gov/newsroom/stats/southwest-land-border-encounters-by-component.

———. 2021b. *U.S. Border Patrol Total Monthly UC Encounters by Sector (FY 2010 - FY 2020)*. Vol. 1517–0721. https://www.cbp.gov/document/stats/us-border-patrol-total-monthly-uc-encounters-sector-fy-2010-fy-2020.

U.S. Department of Health and Human Services. 2020. *Communication and Management Challenges Impeded HHS's Response to Zero-Tolerance Policy*. Vol. OEI-BL-18-. Office of Inspector General. https://oig.hhs.gov/oei/reports/oei-BL-18-00510.pdf.

U.S. Department of Justice. 2021. *Review of the Department of Justice's Planning and Implementation of Its Zero Tolerance Policy and Its Coordination with the Departments of Homeland Security and Health and Human Services*. Vol. 21–028. Office of Inspector General. https://oig.justice.gov/sites/default/files/reports/21-028_0.pdf.

UNICEF-UNHCR. 2020. *Families on the Run*. https://familiesontherun.org.

Table 1: Descriptive Statistics for Unaccompanied Minors, by Period

Panel A: Unaccompanied Minors Apprehended by U.S. Border Patrol			
	Pre-ZTP 10/2013-03/2018	Active ZTP 04/2018-06/2018	Post-ZTP 07/2018-12/2019
Monthly UACs	4,208.72 (2,009.63)	5,078.33 (1,019.49)	5,229.17 (2,330.06)
Monthly UACs from Northern Triangle	3,233.70 (1,864.91)	4,252.67 (1,065.05)	4,341.33 (2,301.34)
Monthly UACs from Mexico	975.02 (265.26)	825.67 (134.36)	887.83 (135.06)
Countries of origin characteristics			
Homicide rates	44.539 (24.317)	35.625 (11.162)	33.833 (9.096)
Employment-to-population ratio (%)	0.594 (0.022)	0.603 (0.031)	0.605 (0.031)
Human Development Index	0.677 (0.054)	0.684 (0.055)	0.686 (0.055)
Under-five mortality rate	19.446 (5.136)	17.782 (4.599)	17.392 (4.487)
Child mortality rate (age 5-14)	3.642 (0.827)	3.518 (0.730)	3.477 (0.705)
Observations	1,944	108	648

Panel B: Unaccompanied Minors Referred to ORR			
	Pre-ZTP 10/2015-03/2018	Active ZTP 04/2018-06/2018	Post-ZTP 07/2018-10/2019
Age	14.599 (3.269)	14.341 (3.517)	14.740 (3.257)
Female	0.318 (0.466)	0.291 (0.454)	0.331 (0.470)
Length of Time in ORR Custody (days)	41.638 (49.112)	64.166 (56.200)	46.797 (41.137)
UACs from Northern Triangle (%)	0.941 (0.235)	0.937 (0.242)	0.925 (0.264)
UACs Reunified with Family (%)	0.948 (0.222)	0.830 (0.375)	0.940 (0.238)
Number of Monthly ORR Referrals	4,729.31 (1,864.03)	5,251.74 (691.21)	6,018.97 (2,233.13)
Observations	111,874	15,467	81,879

Note: Panel A shows summary statistics for the universe of unaccompanied minors apprehended by Border Patrol along the southwest border between October 2013 and December 2019, as well as country-of-origin characteristics included in our empirical model. Panel B presents descriptive statistics for all unaccompanied minors from Mexico and the Northern Triangle (Salvador, Guatemala, and Honduras) placed in ORR custody between October 2015 and October 2019. Sample means, standard deviations in parentheses.

Table 2: ZTP and Unaccompanied Minors Apprehended by U.S. Border Patrol, 2013-2019

Model Specification:	(1)	(2)	(3)
Northern Triangle (NT)	-0.977***	-0.091	-0.091
	(0.305)	(0.776)	(0.776)
ZTP Period×NT	0.489**	0.767***	0.767***
	(0.227)	(0.171)	(0.171)
Post-ZTP Period×NT	0.434*	0.744***	0.744***
	(0.222)	(0.182)	(0.182)
Country of Origin Time-Varying Controls	No	Yes	Yes
Border Patrol Budget for the Fiscal Year	No	No	Yes
Month-Year & Border Sector Fixed Effects	Yes	Yes	Yes
Observations	2,700	2,700	2,700
R-squared	0.546	0.669	0.669

Notes: The period is October 2013 through December 2019. Data on unaccompanied minor apprehensions are aggregated at the (border patrol sector×country of origin×month-year) level. All continuous variables are in logs. All regressions include a constant, and month-year and border sector fixed effects. The pre-ZTP period is used as reference to the ZTP and post-ZTP periods. Country of origin's time-varying controls include the homicide rate, employment-to-population ratio, HDI, and mortality rates for children 0 to 5 and 5 to 14 years old. Standard errors in parentheses are clustered at the (border patrol sector × country of origin) level. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

Table 3: Cox Proportional Hazard Model for Discharge from ORR Custody, 2015-2019

Key Regressors	Discharge Hazard (Robust SE)	Discharge Hazard (Robust SE)	Discharge Hazard (Robust SE)	Discharge Hazard (Robust SE)
Model Specification	**(1)**	**(2)**	**(3)**	**(4)**
ZTP Period	0.508***	0.509***	0.616***	0.624***
	(0.005)	(0.005)	(0.007)	(0.007)
Post-ZTP Period	0.810***	0.812***	1.071***	1.049***
	(0.004)	(0.004)	(0.011)	(0.011)
Child Demographic Controls	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
County Time-Varying Controls	No	Yes	Yes	Yes
Time Trend	No	No	Yes	Yes
Country-Specific Time Trends	No	No	No	Yes
Observations	200,840	200,840	200,840	200,840

Notes: The period is October 2015 through October 2019. The table presents the discharge hazard ratios from a Cox proportional hazards model that examines time (measured in days) to discharge from ORR custody. The pre-ZTP period is used as reference to the ZTP and post-ZTP periods. Child demographic controls include gender, age, and country of origin. County time-varying controls include information on the county's level of interior immigration enforcement and the presence of a sanctuary policy. Robust standard errors in parentheses. *p < 0.1; **p < 0.05; ***p < 0.01.

Table 4: Competing-Risks Model for Family Reunification, 2015-2019

| Key Regressors	Sub-Hazard (Robust SE)	Sub-Hazard (Robust SE)	Sub-Hazard (Robust SE)	Sub-Hazard (Robust SE)
Model Specification	**(1)**	**(2)**	**(3)**	**(4)**
ZTP Period	0.418***	0.418***	0.503***	0.512***
	(0.004)	(0.004)	(0.006)	(0.006)
Post-ZTP Period	0.818***	0.818***	1.073***	1.055***
	(0.004)	(0.004)	(0.011)	(0.011)
Child Traits	Yes	Yes	Yes	Yes
Month Fixed Effects	Yes	Yes	Yes	Yes
County Level Traits	No	Yes	Yes	Yes
Time Trend	No	No	Yes	Yes
Country of Origin Time Trends	No	No	No	Yes
Observations	200,840	200,840	200,840	200,840

Notes: The period is October 2015 through October 2019. The table presents the sub-hazard ratios from a competing-risks model that analyzes time to reunification after a minor is discharged from ORR custody while considering alternative forms of discharge as competing events. The pre-ZTP period is used as reference to the ZTP and post-ZTP periods. Child traits include gender, age, and country of origin. County level traits include information on the county's level of interior immigration enforcement and the presence of a sanctuary policy. Robust standard errors in parentheses *p < 0.1; **p < 0.05; ***p < 0.01.

Figure 1
Event Study for Apprehensions of Unaccompanied Minors Relative to ZTP Activation
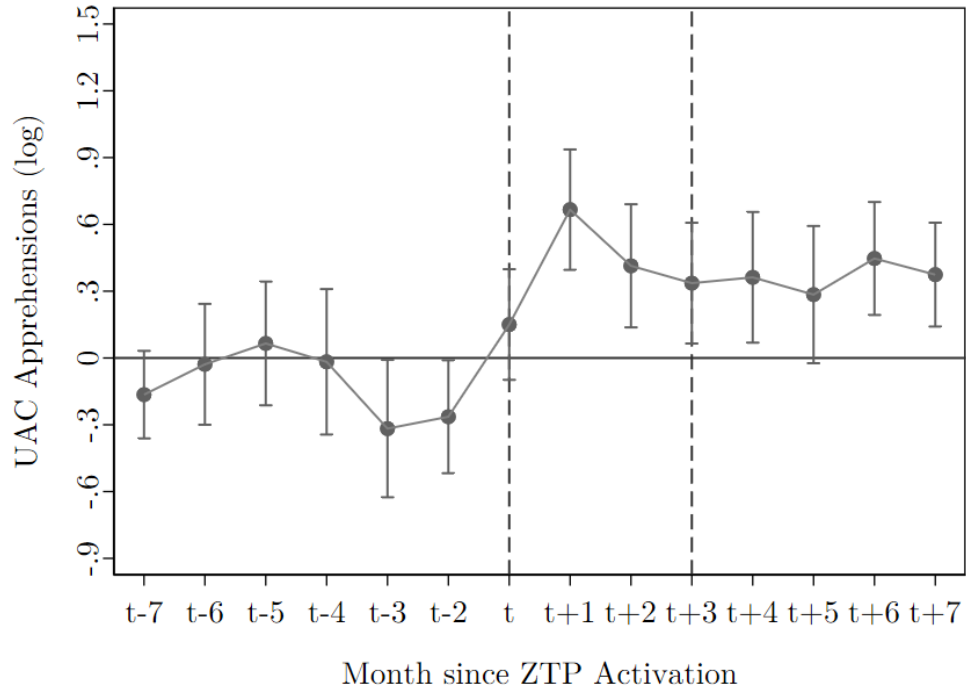
Note: The Zero Tolerance Policy (ZTP) was activated in April 2018 (t) and repealed in July 2018 ($t + 3$). Periods before $t = -6$ and after $t = 6$ are binned up into $t = -7$ and $t = 7$, respectively.

Figure 2
Length of Time in ORR Custody Kaplan-Meier Survival Rates Relative to ZTP Activation
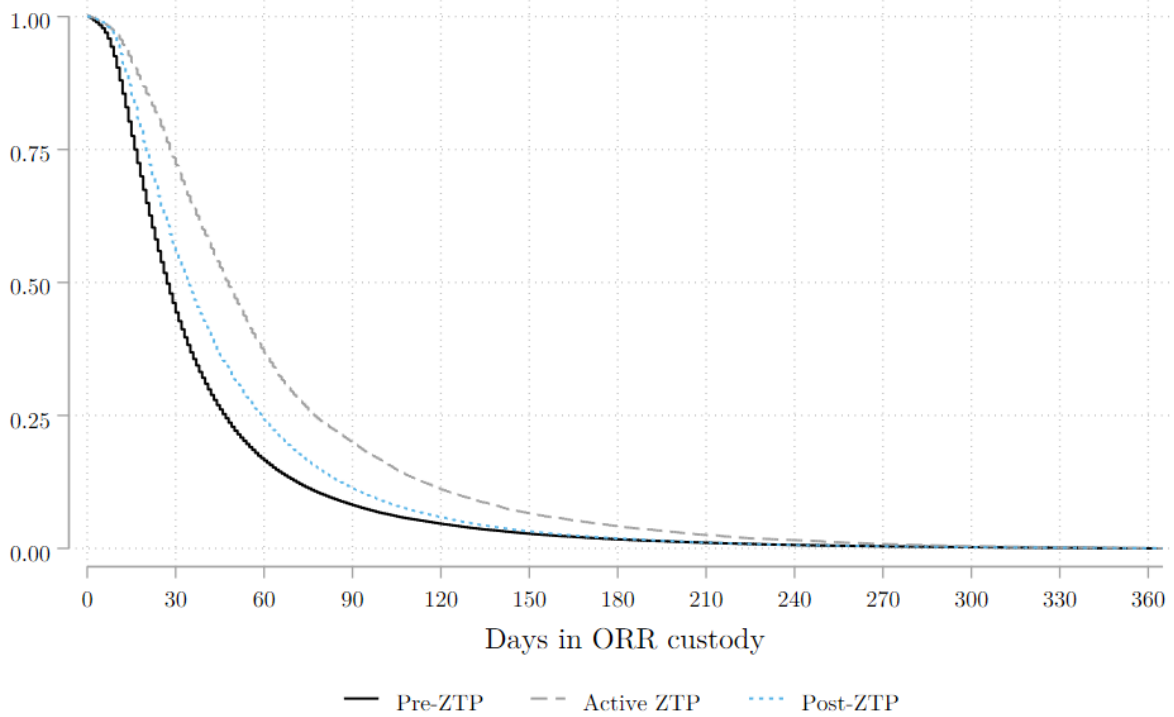
Note: The graph shows the survival rate—*i.e.*, the share of individuals not discharged from ORR custody over time—by initial ORR placement period relative to ZTP activation. For example, the probability of surviving 60 days when the policy was not in place ranged between 20% (pre-ZTP) to 25% (post-ZTP). Conversely, the probability of surviving the same time while ZTP was active reached approximately 38%. The time scale has been trimmed for ease of presentation; days 365-1,300 not shown.

Figure 3
Cumulative Reunification Incidence by Period Relative to ZTP Activation
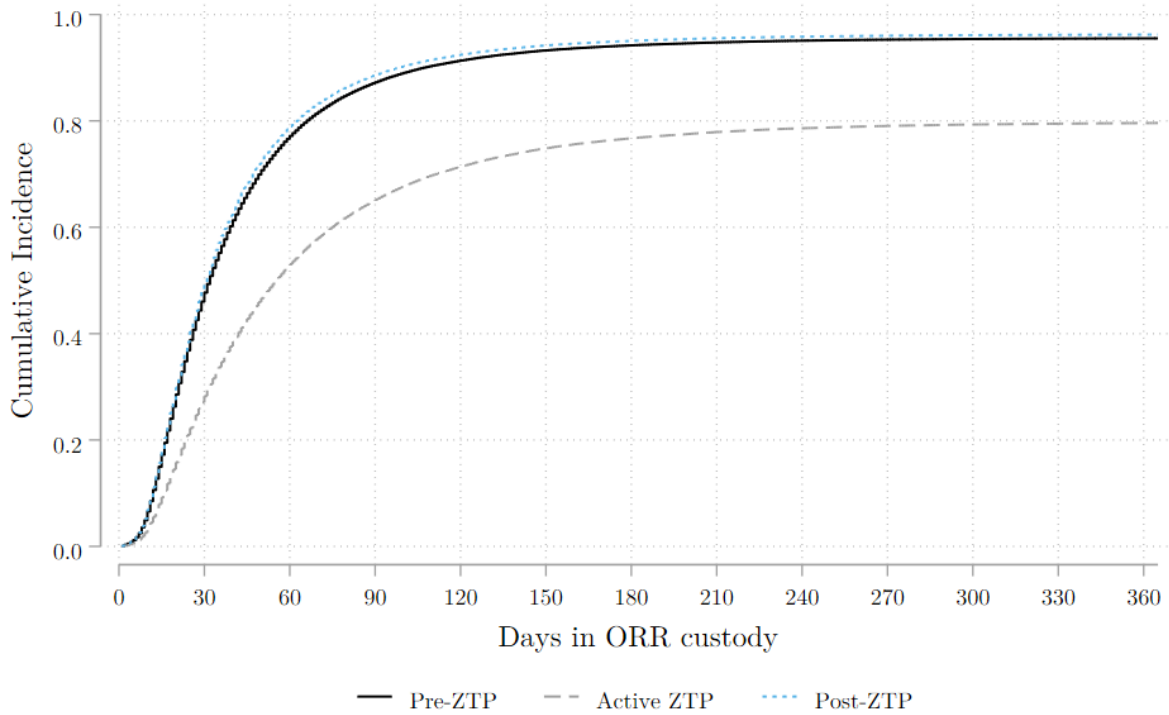
Note: The graph shows the reunification incidence curves by the period when initial ORR placement occurred relative to ZTP activation. For example, the probability of family reunification within 60 days of initial ORR placement was approximately 50% during ZTP, and near 80% in the periods before and after the policy was implemented. The probabilities take into account the possibility that alternative forms of discharge could occur. The time scale has been trimmed for ease of presentation; days 365-1,300 not shown.

APPENDIX

Figure A1
Zero-Tolerance Policy Legislative Framework

Flores Settlement Agreement (1997)	Lawsuit filed in 1985 by migrant children challenging government procedures related to their detention, treatment, and release. According to the agreement, children under government custody have to be held in "least restrictive setting."
Homeland Security Act (2002)	In compliance with Flores Settlement Agreement, the law transferred authority over the processing and care of unaccompanied minors from the extinct Immigration and Naturalization Service (INS) to the Office of Refugee Resettlement (ORR) under the Department of Health and Human Services.
Trafficking Victims Protection Reauthorization Act (2008)	Unaccompanied migrant children from contiguous countries are repatriated if no grounds for asylum. Unaccompanied children from non-contiguous countries are transferred over to ORR custody within 72 hours of apprehension. ORR places children in least restrictive setting.
Zero-Tolerance Policy (2018)	All unauthorized border crossers criminally prosecuted regardless of intention to apply for asylum or whether traveling with minors. Adults are detained in federal criminal facilities, children are separated from their families, reclassified as 'unaccompanied minors,' and referred to ORR custody.