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Violence and Migration.
The Role of Police Killings in the Venezuelan Diaspora

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Violence and Migration. The Role of Police Killings in the Venezuelan Diaspora [*]

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Abstract

During the 2010s, Venezuela underwent the worst and deepest crisis of any non-war-ridden country in modern history. The failure of the socialist utopia, the economic crisis, the increasing lack of primary resources, and the dictatorial turn have caused the third, most dramatic, and complex Venezuelan out-migration wave in the past decade. Drawing on exclusive and georeferenced survey data collected in Venezuela and providing information on 21,382 individuals, this paper investigates the role of the police force militarization in the Venezuelan migration crisis of 2018. We find that the higher is the level of authoritative violence - proxied by the share of homicides committed by the security forces - the higher is the likelihood for an individual to migrate. The effect is significant only among males with a lower level of education. Estimates which rely on the travel time from the capital to each state's most populated city as an instrumental variable, are robust to the inclusion of several households, environmental and socio-demographic characteristics, including the overall level of violence represented by the number of violent deaths per 100,000 inhabitants.

1   Introduction

During the 2010s, Venezuela underwent the worst and deepest crisis of any *non-war-ridden* country in modern history (Bull and Rosales, 2020). The failure of the socialist utopia, the economic crisis, the increasing lack of primary resources, and the dictatorial turn, have caused in the past decade the third, most dramatic, and complex Venezuelan out-migration wave. Migration rates have been growing exponentially from 2016 (Fig 1), becoming the largest human mobilization in the region's recent history [1]. Contextually, the overall level of violence has been constantly increasing, and violence itself has become a structural (Kilby, 2013) part of the society in the whole Country. However, a consistent number of works have addressed the impact of Venezuelan migrants on the society and the economy of the neighbouring countries (Anatol and Kangalee, 2021; Knight and Tribin, 2020), we still know very little about the determinants of their choice to abandon their country of origin. The role of violence as independent push factor for international migration, is not yet investigated (Niedomysl, 2011).

   With this paper, we examine whether authoritative [2] violence represents a significant push factor for Venezuelan international migration. Focusing on the regional level, to account for the possible variation across the different Venezuelan states, we aim at proving that, as the percentage of police killings out of the overall level of violence increases, the likelihood that an individual will migrate increases significantly. To investigate this relationship, we first look for trends or patterns among our data using a Linear Regression Model. In addition to the specific individual and household characteristics, our approach considers *ad hoc* regional controls related to the local economic opportunities, demographic, political and geographical characteristics of the Venezuelan states. Our preliminary results suggest that individuals with greater exposure to authoritative violence in their own or surrounding areas are more likely to abandon the country.

   To overcome the endogeneity issue, we turn to an IV strategy using the *travel time from the Capital City* to each state's most populated city to instrument the authoritative violence. Concerning the furthest states, the Capital District and the closest ones, have experienced a higher level of Maduro's loyal armed bodies interventions. These states are

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[1]So far it has been estimated that 5.2 million Venezuelans have moved beyond the border. The most common destination (1.8 million migrants) is Colombia; Peru welcomed 830,000 migrants, Chile 455,000, Ecuador 360,000, and the USA 352,000.

[2]We use the definition of authoritative violence following the one provided by Morrison and May (Morrison and May, 1994). According to the authors, *authoritative* violence includes also the actions of *state-sponsored* actors, such as the so-called death-squad activity, which is often "authorized" by the state, even when the perpetrators are not wearing police or military uniforms or are officially off-duty.

also the ones in which there has been a higher number of anti-government protests and civil unrest. We, therefore, adopt the travel time from Caracas to account for the quality, the ease, and the security of the movements across the Country. Our assumption is consistent with the literature, according to which state violence spreads faster in areas with greater state capacity (defined as a shorter distance from the capital). Pieces of evidence also suggest that, in general, political or state-sponsored violence is significantly higher close to the capital city because rebellions are more effective when they take place closer to the capital itself. Therefore, the state has the incentive to violently control the political discontent in the areas closest to the political seat of the country.

Our main results suggest that the share of violent deaths as a consequence of resistance to the authorities, given the overall level of violence, is a significant push factor for international migration. The effect is significant only among males with a lower level of education and becomes stronger in the case of those individuals who decide to relocate to bordering countries. Estimates are robust to the inclusion of several household characteristics usual in the migration literature.

Several studies have explored the relationship between violence and both internal and international migration. In the first case, Schultz (1971) found that in Colombia, from 1951 to 1964, political homicides were related to an increase in the migration rate. Similarly, Morrison (1993) and Morrison and May (1994) found that political violence was one of the key drivers of internal displacement in Guatemala. Engel and Ibáñez (2007) and Ibáñez and Vélez (2008) identified the violence perpetrated by illegal armed groups as one of the main determinants of internal displacement in Colombia. On the other hand, Moore and Shellman (2006) used data on a sample of countries from 1976 to 1995, and found that state violence targeting civilians produces international refugees, whereas civil war and high levels of dissident violence tend to produce internal displacement. Bohra-Mishra and Massey (2011) studied how armed violence during a period of civil conflict in Nepal influenced domestic and international migration. They found that people migrated only under conditions of extreme violence in which the threats to safety are perceived to exceed the risks of travel. In fact, among the risks faced by individuals in developing countries, state violence-related is especially difficult to insure against. As put by Rodriguez and Villa (2012), when the insurance costs are perceived to be high, even life-threatening, households may choose to migrate to escape them. Finally, Quiroz Felix et al. (2015) showed mixed results: they have suggested that the Mexican drug war has a negative effect on the likelihood of migrating in the country's northern states, but a positive effect in the country's southern and central ones. In general, the literature does not seem to agree on a shared position and seems to

under-investigated the intense inter-developing countries migration flow, taking place in the Southern American macro-region.

As noted (Clemens, 2017), the lack of strong quantitative evidence regarding the relationship between violence and international migration is mainly due to the great variety of the type of violence at the sub-national level, as so as to the difficulties in identifying the sub-national place of origin of both violent stimuli and migrants. Furthermore, analyzing the impact of violence is not only a matter of data *strictu sensu*. Most migration studies concentrate on analyzing the effects of wage differentials and networks on migration decisions of individuals and/or households. However, especially in developing countries, migration decisions could also be influenced by factors such as the risks individuals are exposed to (Rodriguez and Villa, 2012). Each reads stimuli through a process of mediation, driven by personal characteristics, which is not always easy to account for (Becker et al., 2004). With our study, we contribute to the existing literature by providing an analysis based on geo-referenced individual survey data, that allows us to account for the inter-developing countries' migration flows, as so as to grasp the variability at the individual level. In doing this, we provide a novel approach based on the analysis of the proportion of a given type of violence with respect to another.

This paper is organized as follows. In Section 2, we provide a detailed explanation of the process of militarization adopted by President Maduro, and of its role in strengthening the unstable position of the ruling party during the last 10 years.

In Section 3, we present the different sources of data and the variables analyzed, differentiating data and variables used for analyzing migration choice, violence, and regional and households controls. We then present the empirical approach and discuss the main econometric challenges such as the potential omitted variable bias related to the analysis of violence impact.

Section 4 , is devoted to the outline of the results, by presenting the main estimates regarding the coefficients of the main variable of interest.

In conclusion, we provide, in Section 5, a discussion about the main findings, along with their potential implications.

2 The Militarization Process in Venezuela

Venezuela has the highest rate in Latin America of civilians killed by officials (Silva et al., 2019). In 2016, according to the Public Prosecutor Office (Galavís, 2020), public security officers were responsible for 22 per cent of the total number of homicides. Between 2015

and June 2017 there were 8,292 alleged extrajudicial executions. Between 2018 and May 2019, the government reported 6,856 killings by officials during security operations that were classified as "resistance to authority", which may constitute extrajudicial executions (OHCHR 2019 in Galavís (2020)). Such a dramatic soaring of officials' brutality is mainly due to a change in citizens securization policies. The militarization of police is, indeed, one of the key instrument for the transition of Venezuelan system from a democratic to an authoritarian regime (Marsteintredet, 2020; Corrales, 2020; Pareja, 2020; Legler, 2020).
As explained by the Inter-American Commission on Human Rights (Goldman, 2009; Cerna, 2019), the police and the military have different purposes, as well as training, equipment, and skills. As Osse (2006) put it, while the military are trained to use force to kill, the police are *only to shoot to kill as a last resort*. Therefore, the police militarization process [3] occurred in Venezuela, based on the transformation of the civil police into a military body, and on the engagement of the military in domestic security operations, represents a critical factor in the developing of the relationship between Government and citizens (Mummolo, 2018).

In 2015, Maduro's government started resorting to manipulation of laws, as well as the use of the National Bolivarian Armed Forces to repress the opponents, and to assure their ability to govern in such a difficult environment Maya (2014). The National Government approved the Homeland Security Plan, through which President Maduro implemented the militarization of public safety police forces, placing the national police under the control of the Army. In the same year, the Ministry of the Interior headed by Néstor Reverol created a new instrument for the systematic repression of the government opponents: the Operation Liberation and Protection of the People (Operacion de Liberacion del Pueblo, hereafter OLP). According to the United Nations High Commissioner for Human Rights (Galavís, 2020), Venezuelan authorities used such operation as a tool to demonstrate their alleged success in crime reduction. In reality, always according with OHCHR and the media (Marco, 2016), OLP actions have been showing patterns of disproportionate and unnecessary (ab)use of force and violence, producing a relevant number of extrajudicial victims, as reported above. In 2017, under the pressure of the NGOs and the international bodies, Maduro has been forced to cease the OLP. However, to maintain its purposes, he created an elite body

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[3]According to Flores-Macías and Zarkin (2021); Galavís (2020), there are different types of militarization. The first is the one in which the militarized police relies on military tactics and equipment, maintaining a civilian jurisdiction as so as a low-hierarchy structure. The second one is the paramilitary police, operating under military deployment tactics and units, maintaining a civilian jurisdiction and a police rationale. The third one is represented by the *constabularized* militaries, assuming citizen security tasks such as "crime prevention, crime contention, and prison security while reporting to the Ministry of Defence" Galavís (2020):71.

within the new Bolivarian National Police, the Special Action Forces (FAES). FAES became the new form of OLPs, whose work was not focused on reducing crime rates, but rather on constituting a mechanism of social and territorial control, to face citizen unrest, the loss of consensus, and the political discontent due to the severe humanitarian crises. They have been massively employed in the surroundings of the Capital City, in the attempt to secure the central government headquarter and the centres of power of the Federal Administration (Ades and Glaeser, 1995; McDoom, 2014). The worst-affected areas were the *barrios* of Caracas, and the states of Carabobo, Miranda, Aragua, Zulia, Merida, and Anzoategui, low-income communities which have experienced a higher level of anti-government protests.

3   Data and Empirical Approach

3.1   Migration Data

We use the Encuesta Nacional de Condiciones de Vida (hereafter, ENCOVI) to examine Venezuelacitizens'ns decision to migrate out of their country of origin. The survey was carried out by the Universidad Catolica Andres Bello de Caracas between July and September 2018. It is representative by design of the Venezuelan population and provides information about 21.382 individuals, divided into 5,950 households across 22 states (the sample does not include Amazonas and Dependencias Federales [4]). Disaggregated information on migrants, their characteristics and destination, is reported by the household heads, the interview respondents.

Our dependent variable is binary and takes value one if an individual has left the Country between 2017 and 2018. Moreover, we use ENCOVI to draw information regarding households and their members' characteristics. At the individual level, we account for age, education, and gender. We then consider the number of the members of the family, and the level of education of the household head [5].

Fig. 3 maps the percentage of households having a member who migrated between 2017 and August 2018. It shows that the majority of migrants are from states near the capital district and the northwest part of the country. Consistently with IOM estimates, we observe that Colombia is the main receiving country: nearly 40 per cent of Venezuelans who migrated in 2017 lived in Colombia at the time of the survey, whereas 1per cent lived in

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[4]As shown in Figure 2 and Figure 3, we dropped the migration data regarding Portuguesa, because we do not have data on violence for that state.

[5]The variable regarding the education level is a binary one, and takes value 1 if the household head have at least attained a high school diploma.

Peru. The other main receiving countries are Chile, Ecuador, and the US. Migrants are on average younger than those who remains (29 years old with respect to 41 years old), and the majority of them are male. Furthermore, migrants are positively selected compared to the population which remains in Venezuela: 32 per cent has at least a bachelor's degree, whereas only 13 per cent of those who have remained at home are college graduates.

3.2   Homicide data

To proxy the potential exposure of an individual to the authoritative violence, we use data on homicides estimated and made public by the Observatorio Venezolano de Violencia (OVV) [6]. The Observatory collects data on deaths differentiating by their nature: civil and institutional.

In particular, our variable of interest is represented by the share of violent deaths[7] as a consequence of opposition to security forces, out of the total number of homicides per 100.000 inhabitants. This variable represents a proxy for the level of violent repression by the state. We choose this indicator following what was suggested by the World Health Organization (2003) and by the literature analyzing violence in the South American region (Neumayer, 2003; Rivera, 2016). Indeed, homicide is the most extreme form of physical violence, and the crime affecting the most fear and perception of insecurity in Latin America (Ávila, 2018). As put it by Uribe et al. in Martínez Herrera (2020), homicide is the best representation of the type of violence affecting Venezuela, and at the same time the evidence of an extraordinary complex scenario generated by more than one factors. Furthermore, other types of criminal activity such as robbery, theft, and assault are also theoretically relevant, but data on these types of crime are less reliable and are missing for many country-year observations (Rivera, 2016).

Table 1 presents the descriptive statistics of our key variables of interest along with the control variables. We report clustered means and standard deviation at the state level. Fig. 4 maps our variable of interest, the percentage of homicides committed by security forces

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[6]Along with other NGOs, no-profit observatories and universities (e.g. Laboratorio de Ciencias Sociales - LACSO), OVV tries to overcome the lack of official production of data by Venezuelan institutional. As posit also by (Uribe et al., 2016), the data available thanks to such non-institutional analysis are of crucial importance for the analysis of context like the Venezuelan one. If until 2010 OVV's work was mainly relying on statistical predictions (Ávila, 2018), starting from 2016/2017 the observatory has begun applying a more complex methodology collecting information by media, via victimization surveys, by organizing focus groups and in-depth interviews, and by collecting extra-official information from different institutions (OVV, 2017 in Ávila (2018)).

[7]More precisely, OVV estimations provide the number of *muertes violentas* or violent death. A death is classified as an intentional homicide following the International Statistical Classification of Diseases and Related Health Problems published by the World Health Organization.

for 2017. It shows a large variance across states, ranging from 13 per cent to 47 per cent. As shown in the figure, the average level of repression is highest in the northern states close to the Capital District and toward the northwest border with Colombia.

3.3 Estimation Strategy

As discussed in section 2, the years 2017 and 2018 provide a unique context for studying the effect of repressive violence by the Venezuelan government. Given the lack of institutional data in the years prior to 2017 and the consequent impossibility to address variation in the level of violence across time, we focus on the (high) heterogeneity across Venezuelan states. In particular, as shown in the Eq. 1 we want to estimate the impact of an increase in the share of authoritative violence on the probability for an individual to choose to leave the country.

$$Mig_i = \alpha_0 + \alpha_1 AV_j + \alpha_2 H_j + \alpha_3 X_i + \alpha_4 V_h + \alpha_5 W_j + \epsilon_{i,h,j} \tag{1}$$

where Mig_i is a dummy variable that has value 1 if the individual has migrated in the last two years and currently lives outside the Venezuelan border. AV_j is the percentage of homicides as a consequence of opposition to security forces (2017). H_j is the logarithm of the homicide rate at the state level (2017). Vector X_i represents individual characteristics, such as age, gender and education. Vector V_h represents household characteristics, such as household education and household size. W_j is a vector that includes state-level covariates.

To account for those characteristics that vary widely over the years, such as *state education level*, *employment rate* [8] and *income per capita*, we rely on ENCOVI, which represents the most recent source of information at our availability.

We then draw demographic variables from the 2011 National Census. We include the population density, the percentage of the urban population, the average availability of essential services in the state [9], and the share of the indigenous population. The presence of indigenous communities is indeed an important element in understanding the uniqueness of state violence at the regional level. They often become the object of repression by the central government (Briceño-León and Perdomo, 2019), which acts violently to expropriate their lands. By including the distance to the nearest national border, we are also able to take into account the cost of moving out of the country, such as transportation fees, network

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[8]In particular, the state employment rate is calculated using the percentage of employed people aged 19 to 54, and the education level is based on the average number of years of education.

[9]The average access to running water is represented by the percentage of households with at least weekly access to running water

and information availability.

To proxy the access to healthcare, the vector includes an index of the average availability of medicine for each state using the information made available by Encuesta Nacional de Hospitales (ENH, 2017)[10]. By including the number of mines and the GNI, we account for the local industrial structure. Finally, we try to weigh the political situation including a dummy variable equal to 1 if the governor is from the political party opposed to Maduro (Ingram and da Costa, 2019).

However, even if Eq. 1 is based on a complete set of standardized and operationalized variables, as well as on the complete display of households and geographical controls, we use an IV Linear Regression Model to strengthen our as much as possible our estimations.

3.3.1   Instrumental Variable: Travel Time from Caracas

To complete our empirical approach, and to address in the best possible way the potential endogeneity issue, we use the logarithm of the *travel time* (expressed in minutes) required to reach every state's most populated city from the Capital District as instrument for the share of authoritative violence. As we know especially from the media, and as already explained in the Section 2, we observe a higher concentration of the actions of FAES in the Capital District and immediate bordering states, with respect to the furthest ones. Starting from such evidence, we consider the potential difficulties for Maduro's loyal armed bodies to travel across the country in battle array. Figure 4 and Figure 5 seem to confirm this pattern, showing more intense state repression in states closer to Caracas, and along the main traffic routes. We adopt the travel time from Caracas to account for the quality, the ease, and the security of the movements across the Country.

Evidence suggests that political or state-sponsored violence is significantly higher close to the capital city, headquarters of the government and the national police bodies. From a potential insurgent group perspective, rebellions are more effective when they take place closer to the capital city, based on the principle that "spatial proximity to power increases political influence" (Ades and Glaeser, 1995), and especially when this influence is mediated by the threat of violence. In other words, the variable that influences the extent to which

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[10]The Encuesta Nacional de Hospitales showed that in November 2018, 33 per cent of the beds in the country's hospitals were inoperative. Given the inoperability of laboratories, 43 per cent of hospitals in Venezuela do not have the capacity to examine medical tests. In addition, about 70 per cent of hospitals reported experiencing a lack of electrical service and water shortages. Hospitals also experience a shortage of emergency medicines (50 per cent shortage). The ENH is conducted by the "Médicos por la Salud" Observatory and data were collected in the major hospitals in Venezuelan states during the second week of November 2018

an individual or group poses a danger to an incumbent elite is its distance from the seat of political power. This intuitively leads to the conclusion that the state has the incentive to violently control the political discontent in areas closest to the political seat of the country.

Our assumptions are also consistent with the work of McDoom (2014). Analyzing the evolution of Rwanda's civil conflict, the author found that state violence spread faster in areas with greater state capacity (defined as a shorter distance from the capital). Similar evidence is supported by the literature on the logistics of violence. Physical distance is among the most significant drivers of costs (Boulding and Singh, 1962; Sprout and Sprout, 2015; Starr, 1978; Schutte and Donnay, 2014). As the distance between central logistical bases of the army and conflict zones increases, armies divert more resources to non-combat tasks such as escort and supply chain management (Cederman et al., 2009), and more investment becomes necessary to maintain the control. Moreover, Anderton and Brauer (2016), through a district-level analysis of the African context, found that violence against civilians is more intense where logistical costs are low. The author captures logistical costs with two covariates: the road density, or the kilometres of paved primary and secondary roads per square kilometre of area, and the physical distance from the centre of each district to the centre of political and military power in the country.

Even if we do not use a road quality index, and the location of the Capital City in Venezuela should be considered as completely exogenous, we are aware that the *travel time* might display potentially endogenous dimensions. For instance, it might be related to the characteristics of the region in which the road has been built such as the wealth of the state, its geographical characteristics and its economic interests. However, we account for these relationships by including control variables such as the GNI per capita, the state education level, the access to services, the shortage of medicines, the distance from the national borders, the presence of mines, the share of the rural population and the population density. Furthermore, the development of the main roads network is not exclusively driven by socio-economic dynamics, rather influenced by exogenous geographic and territorial characteristics. To further increase the credibility of our instrument, we perform the analysis using the distance from the Capital expressed in kilometres, as shown in Table 6 (columns 1 to 3), and Table 7 (columns 1 to 3). Although all the estimations are confirmed and present higher coefficients, we decided to maintain the *travel time* as the main instrument because we consider it more correct and complete from the theoretical perspective.

As regards the exclusion restriction related to our identification strategy, we argue that being close to the Capital is not a relevant factor in shaping the probability to migrate because of the following main reasons. First of all, even if the area of Caracas is on the

coast and shows a higher concentration of airports in the country, only a negligible part of the migrants [11] we analyze left Venezuela by air and by sea. Second, there is no evidence of historical migratory patterns concentrated in the states closest to the Capital. On the contrary, as shown in Figure 2 and Figure 3, state-level migration rates between 2013 and 2016 are consistently different from those registered between 2017 and 2018. Furthermore, being aware of the literature demonstrating that the economic development of similar countries is positively related to the proximity to the Capital City and that such proximity would make easier the access to network and information about possible countries of destination (Sassen, 2013), we account for these factors through the aforementioned control variables in the model.

In light of this, we are confident in saying that, in the context we are analyzing, and regarding the composition of the migration wave we are looking at, the proximity to the Capital City is positively related to the probability for an individual to migrate out of the Country only through a higher level of authoritative violence.

4   Results

Table 2 presents the results of the OLS estimation, divided according to the gradual inclusion of the control variables grouped as follows: political-economic (Column 2), demographic (Column 3), individual-level (Column 4), and household level (Column 5). Since the main results are positive, significant and the coefficients vary very little, we are confident in excluding the presence of relevant omitted-variable bias. Column 6 and Column 7 of the same table reports the coefficients of, respectively, the Probit and Logit estimations, performed as robustness checks to support the stability and the consistency of the main linear empirical assumptions.

Before presenting the results of the second-stage regression, we discuss the statistical tests designed to assess the appropriateness of our strategy and the associated first-stage estimates. Table 3 provides a set of statistics for the under-identification and weak identification tests. The first is intended to ensure that the excluded instrument is relevant, i.e., that it is correlated with the endogenous variable. The aim of the second is to test the strength of the correlation between the instrument and the endogenous regressor, i.e., whether the IV estimator performs poorly. Since our model includes state-level standard

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[11]According to our estimations performed thanks to the data provided by the Encuesta Dirigida a la Poblaciòn Venezolana que reside en el Pais (see Section 4.1), only the 0,09% of the migration routes mapped within our sample used to abandon Venezuela are by sea, the 3,85% by air, and the 1,47% by foot. The high majority of them (94,59%), are by bus.

errors, the i.i.d. hypothesis is no longer valid and, consequently, we report the appropriate statistics (Ascani et al., 2020) for these cases: the LM and Wald versions of Kleibergen and Paap (2006). The 5 per cent statistical significance of the Kleibergen-Paap LM statistic suggests that we can largely reject the null hypothesis that the equation is under-identified thus corroborating the relevance of our instrument (Table 3). For the identification of weak instruments we adopt the dimension method Stock and Yogo (2005). The Kleibergen-Paap rk statistic F exceeds the critical values for the maximum desired bias of 10 per cent in all three specifications, thus allowing us to reject the null hypothesis that our instrument is weak [12]. Table 3 also reports the estimated coefficients for the first-stage regressions. It shows a statistically strong and negative correlation of our instrument with the percentage of authoritative violence. In line with our previous discussion, this means that states closer to the Capital City experience a higher percentage of homicides committed by authorities, i.e., a more repressive response by the state.

Table 4 presents the second-stage estimates for the IV specification. In Column 2 we consider only migration towards other Latin American countries, excluding those households whose members are migrated outside South America. In Column 3, we report the specification without considering households residing in the Capital District. The coefficient estimates of our variable do not change significantly, showing robustness to both sample restrictions. Such evidence supports our main hypothesis regarding the effect of authoritative violence on migration. The estimates show that, for a 10 per cent increase in the share of authoritative violence, the probability to migrate increases by approximately 0.5 per cent. It is important to notice that we used the overall homicide rate as a control for the general level of violence, which by the way has no significant effect on the probability of migration. Table 4 also reports the coefficients related to the individual and household characteristics. In particular, at both levels, we observe a positive and significant effect of education on the probability to migrate. This confirms that, in the decision-making process, economic and non-economic factors may coexist. The estimates regarding the effect of authoritative violence on our outcome variable do not consistently change across different specifications. As shown in Column 2, and in line with the literature, the effect of education is lower when considering only migrants moving to neighbouring countries.

Concerning the effects of our control variables across different Venezuelan states, according to the literature, one would expect to find a negative relation between some between

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[12]Since heteroscedasticity, serial correlation, and data clustering can affect instrument strength we also compute F-statistic of Montiel Olea-Pflueger and we report the TSLS critical values (Olea and Pflueger, 2013). Again, the F statistic exceeds the critical TSLS value at 5 per cent, thus confirming the result of the Stock and Yogo under-identification test.

employment and the state level out-migration rate. However, as shown in Table 2, the employment rate is positively related to the probability for an individual to migrate. Moreover, while education at the individual level has a positive effect on migration, the state average education level is negatively correlated. Such a peculiar evidence may be due to a misalignment in the local labour market between low skill demand and high skill supply. This would imply that, especially in states where there is a prevalence of labour-intensive employment and low average education, the higher educated individuals are driven to leave in search of better opportunities (Brown et al., 1989; Brown and Goetz, 1987).

Having said that, even if the results are robust to the inclusion or exclusion of the other control variables (Columns 1 to 5 of Table 2), the interpretation of such controls should be taken with caution, as some may suffer from endogeneity issues, and addressing all of them simultaneously is beyond the scope of this paper.

In addition, we try to explore if, according to gender or the level of education, people respond differently to authoritative violence. Columns 1 and 2 of Table 5 show that our variable of interest has a positive and significant effect only on males' decision to migrate, while the migration of females appears to be driven by educational attainment. This result could be due to the fact that men are more likely to be victims of violence by the state [13], while females are pushed out of the country by mostly economic factors. Columns 3 to 5 show that authoritative violence is a push factor only for low-educated Venezuelans, suggesting that the high-educated decide to migrate for factors other than state violence. However, these results deserve further investigation to identify whether this heterogeneity may be due to greater exposure to violence of the low-educated, or whether there is a difference in perception depending on the education of the individual.

4.1 Robustness Check to Whole Household Migration

ENCOVI only accounts for those migrants who have at least a household member left behind. This could imply a loss of representativity of the sample, limiting the validity of our estimations. To overcome such a limitation, we use the Encuesta Dirigida a la Poblaciòn Venezolana que reside en el Pais (hereafter, ENPOVE). The survey, performed at the end of 2018, collects information about 9.847 Venezuelan migrants residing in Peru, which is the second-largest receiving country [14]. In particular, unlike other surveys on Venezuelan

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[13] The Venezuelan Observatory Monitor de Victimas shows that in the Capital District and in the state of Miranda between 2017 and 2018, 92 per cent of victims of police violence were male

[14] ENPOVE was carried out by the Peruvian National Institute for Statistics (INEI) between November and December 2018. It is representative of design of the Venezuelan population residing in Peru. In particular, it was conducted in the five largest cities in the country, where reside 85 per cent of Venezuelans. According

migrants residing in foreign countries, ENPOVE provides their city of origin. This allows us to assess the effect of exposure to pre-migration violence on their decision-making process. Column 4 of Table 4 shows the coefficients regarding the new sample, in which we merged the weighted samples from ENCOVI and ENPOVE [15]. The stability of the estimations, confirms the robustness of our results to the inclusion of households that entirely migrated.

5 Conclusions

In this paper, we investigate the role of political violence as a determinant of Venezuelan migration. To the best of our knowledge, this is the first study evaluating the impact of the authoritarian turn, and the increased level of state repression among the severe economic conditions related to the crisis (Caruso et al., 2021). In particular, we investigate the relationship between authoritative violence and international migration in Venezuela between 2017 and 2018.
Controlling for the overall level of violence and other observable state-level characteristics, and using the travel time from the Capital to each state's most populated city as an instrumental variable for the level of authoritative violence, we find evidence that the share of homicides committed by security forces increases the likelihood for an individual to migrate out of the country. This represents a step forward with respect to the literature finding that political violence alone is not a push factor for international migration, rather for the internal displacement.
As presented in the Section 4, we also find interesting heterogeneous effects across the education level. In particular, our estimations seem to suggest that the impact of authoritative violence is significant only among people with a lower level of education (Table 5, Column 3). This may be due to the fact that, for low-educated individuals, the decision to migrate may be less driven by the search for better economic opportunities, but rather by the need to escape the uncontrolled state violence. Such evidence is also in line with the findings Clemens and Mendola (2020), according to which *self-selection* is lower for migrants who move from one developing country to another. As shown by the estimations performed excluding individuals migrated outside Latin America, the weight of violence in the decision-making to migrate is higher for migrants who choose other Latin American countries as destinations. In other words, the relevance of violence as an independent push

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to IOM estimates, Peru is the second-largest receiving country for Venezuelan migrants; currently about 1 million out of 5.2 million of them live there. Therefore the ENPOVE sample can be largely representative of Venezuelan households that have entirely migrated

[15] We considered only those Venezuelans who declared not to have any left-behind member of their family.

factor seems to decrease with the increasing distance of the destination country.

However, we are aware that our work may suffer from some limitations related to data availability. First, even if we account for a significant heterogeneity in the share of state-sponsored violence, and the magnitude of the migration out-flow across states, we do not have the possibility to account for variation across time. Second, we may miss part of the effect of authoritative violence in the widest states, since we do not account for differences at the municipal level. Nevertheless, being Venezuela a federal state, there exists a concrete homogeneity within each state's borders, especially regarding the relationship with the central regime. Moreover, we also argue that the individual and the households' characteristics play the most relevant role. So, with our approach, we weigh the role of a given characteristic according to the specific state in which the household lives.

With our study, through the quantitative evidence, we aim at highlighting the importance of discriminating between different possible violent stimuli, when addressing the role of violence in individual decision making. To fully accomplish such an aim, however, one should be able to account for perception: as already discussed, individuals follow different patterns of mediation when exposed to a violent stimulus. At the same time, it is important to narrow down as much as possible the geographical unit of analysis and the accuracy of relative contextual data.

As written by Galavís (2020), "[v]iolence in Venezuela is a multifaceted phenomenon that authorities have not only been unable to reduce but have also aggravated". The militarization of the citizens' security represents the failure of a policy whose main outcome is to deprive the Country of a whole generation of the young male labour force, and this represents a severe long term cost. Indeed, human capital is considered the most important determinant of economic growth. Countries that have suffered great losses in physical capital, will experience a painful period of post-war reconstruction and development.

Figures and Tables

	Migrants		Non Migrants	
Individual Level	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Less than High School Diploma	0.24	0.42	0.63	0.48
High School Diploma	0.44	0.50	0.24	0.43
College Graduated	0.32	0.47	0.13	0.34
Age	29.45	9.62	41.70	12.87
Female	0.45	0.50	0.56	0.50
	Full Sample			
Household Level	**Mean**		**Std. Dev.**	
Education of the household head	0.42		0.49	
Household size	3.29		2.12	
State Level				
Homicide rate (2017)	61.52		25.62	
Percentage of homicide committed by authorities (2017)	0.28		0.10	
Education Level (2017)	10.45		1.24	
Employment rate (2017)	0.64		0.05	
Average Income per capita (montlhy/BS) (2017)	755.65		485.83	
Population density (2011)	316.35		942.29	
Percentage of indigenous (2011)	0.02		0.05	
Travel time from Caracas	359.00		183.00	
Percentage of Rural Population (2011)	0.32		0.28	
Shortage medicine in the main hospitals (2017)	0.41		0.21	
Househoulds with access to running water (2011)	0.60		0.17	
Distance from national borders	358.45		183.66	
Governor opponent of Maduro	0.18		0.39	
Presence of Mines (2011)	24.773		92.01	
Gross National Income (1,000 US Dollars, 2011)	9.77		0.23	

Table 1: Descriptive Statistics

Notes: Distance from Caracas is represented by the Minutes of travel time under normal traffic conditions from the Capital District; Household size is measured pre-migration.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	OLS	OLS	OLS	Probit	Logit
Variable of interest							
Homicides committed by authorities (%)	0.054*	0.047**	0.055***	0.053***	0.056***	0.882***	1.459**
	(0.0311)	(0.0185)	(0.0162)	(0.0172)	(0.0167)	(0.3342)	(0.7197)
Homicide rate (Log)	-0.001	-0.002	-0.012	-0.010	-0.010	-0.100	-0.029
	(0.0103)	(0.0092)	(0.0089)	(0.0085)	(0.0082)	(0.1926)	(0.4245)
Individual characteristics							
High School				0.028***	0.010**	0.274***	0.588***
				(0.0055)	(0.0035)	(0.0715)	(0.1584)
College graduated				0.046***	0.022***	0.503***	1.010***
				(0.0056)	(0.0041)	(0.0722)	(0.1515)
Age				-0.009***	-0.009***	-0.104***	-0.172***
				(0.0014)	(0.0014)	(0.0216)	(0.0507)
Age Squared				0.000***	0.000***	0.001**	0.001
				(0.0000)	(0.0000)	(0.0003)	(0.0007)
Female				-0.015**	-0.016***	-0.347***	-0.710***
				(0.0054)	(0.0053)	(0.1033)	(0.2235)
Household characteristics							
Education of the household head					0.046***		
					(0.0068)		
Household size (Log)					0.017***	0.615***	1.345***
					(0.0039)	(0.0755)	(0.1719)
Regional controls							
Governorn is an opponent of Maduro		0.000	-0.005	-0.006*	-0.008**	-0.184**	-0.312*
		(0.0059)	(0.0041)	(0.0036)	(0.0034)	(0.0810)	(0.1705)
State education level (Log)		-0.052***	-0.031	-0.047**	-0.056**	-0.739*	-1.819*
		(0.0173)	(0.0234)	(0.0218)	(0.0217)	(0.4322)	(1.0305)
State Employment		0.323***	0.273**	0.299**	0.321***	7.053***	15.623***
		(0.0615)	(0.1046)	(0.1105)	(0.1072)	(2.0689)	(4.6310)
Average income *per capita* (Log)		0.002	-0.001	-0.002	0.002	-0.082	-0.170
		(0.0029)	(0.0055)	(0.0057)	(0.0053)	(0.1145)	(0.2567)
Population density (Log)			-0.004**	-0.005***	-0.005***	-0.116***	-0.219***
			(0.0014)	(0.0013)	(0.0013)	(0.0346)	(0.0735)
Access to running water		0.027*	0.052**	0.049***	0.046**	0.327	0.179
		(0.0140)	(0.0187)	(0.0166)	(0.0165)	(0.4438)	(0.9208)
Shortage of medicines		0.042***	0.029**	0.033**	0.037***	0.941***	2.119***
		(0.0074)	(0.0137)	(0.0139)	(0.0128)	(0.2033)	(0.4671)
Indigeneous			-0.019	-0.019	-0.024	-5.329***	-11.781***
			(0.0728)	(0.0664)	(0.0636)	(1.8230)	(3.8579)
Rural Population			-0.010	-0.011	-0.012	-0.252	-0.355
			(0.0130)	(0.0125)	(0.0124)	(0.2250)	(0.5310)
Distance from national borders (Log)			-0.001	0.000	0.001	-0.116**	-0.261**
			(0.0024)	(0.0023)	(0.0022)	(0.0505)	(0.1085)
Number of mines (Log)			-0.001	-0.001	-0.001	-0.053**	-0.118**
			(0.0011)	(0.0012)	(0.0011)	(0.0244)	(0.0570)
GNI		0.012	0.023**	0.022*	0.023**	0.830***	1.591***
		(0.0104)	(0.0105)	(0.0117)	(0.0104)	(0.1835)	(0.4226)
Observations	21,382	21,382	21,382	19,776	19,776	8,506	8,506
Capital District observations	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Migration outside LAC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Households migrated	No	No	No	No	No	No	No

Table 2: The effect of authoritative violence on the probability to migrate - OLS, Probit and Logit Models

Notes: Robust standard errors in parentheses and they allow for State Level clustering. Asterisks denote statistical significance:
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

	(1)	(2)	(2)
	Authoritative violence		
Instrumental variable			
Travel time from Caracas (Log)	-0.199***	-0.199***	-0.212***
	(0.0316)	(0.0316)	(0.0283)
Regional controls			
Homicide rate (Log)	0.133***	0.133***	0.107***
	(0.0445)	(0.0445)	(0.0411)
Governorn is an opponent of Maduro	0.325***	0.325***	0.329***
	(0.0394)	(0.0394)	(0.0388)
State education level (Log)	0.345***	0.345***	0.428***
	(0.1327)	(0.1327)	(0.1238)
State Employment	3.326***	3.325***	3.231***
	(0.8122)	(0.8121)	(0.7151)
Average income *per capita* (Log)	-0.080***	-0.080***	-0.092***
	(0.0205)	(0.0205)	(0.0192)
Population density (Log)	-0.215***	-0.215***	-0.039
	(0.0376)	(0.0376)	(0.1007)
Access to water	-0.326***	-0.326***	-0.292***
	(0.1025)	(0.1025)	(0.0974)
Shortage of medicines	0.426***	0.426***	0.416***
	(0.0918)	(0.0917)	(0.0829)
Indigenous	0.088	0.087	0.094
	(0.4128)	(0.4125)	(0.4132)
Rural Population	0.199***	0.199***	0.235***
	(0.0707)	(0.0707)	(0.0726)
Distance from national borders (Log)	-0.059***	-0.059***	-0.070***
	(0.0122)	(0.0122)	(0.0143)
Number of mines (Log)	0.015	0.015	0.017*
	(0.0104)	(0.0104)	(0.0090)
GNI	-0.252***	-0.252***	-0.300***
	(0.0794)	(0.0794)	(0.0828)
Under-indentification	5.28**	5.28**	5.61**
Weak-identification:			
Kleibergen-Paap Wald F-stat	39.56	39.57	56.44
Stock-Yogo 10%	16.38	16.38	16.38
Stock-Yogo 15%	8.96	8.96	8.96
Montiel Olea-Pflueger F-stat	39.56	39.57	56.44
TSLS 5%	37.42	37.42	37.42
TSLS 10%	23.11	23.11	23.11
Observations	19,776	19,716	18,607
Capital District observations	Yes	Yes	No
Migration outside LAC	Yes	No	Yes
Households migrated	No	No	No

Table 3: First-stage estimates of the authoritative violence

Notes: Cluster standard errors at state level. Asterisks denote statistical significance:***$p < 0.01$,**$p < 0.05$,*$p < 0.1$

	(1)	(2)	(3)	(4)
	IV	IV	IV	IV
Variable of interest				
Homicides committed by authorities (%)	0.045**	0.048**	0.046**	0.068*
	(0.0215)	(0.0202)	(0.0214)	(0.0349)
Homicide rate (Log)	-0.008	-0.006	-0.008	-0.023
	(0.0084)	(0.0069)	(0.0091)	(0.0140)
Individual characteristics				
High School	0.010***	0.008***	0.010***	0.012***
	(0.0034)	(0.0028)	(0.0036)	(0.0033)
College graduated	0.022***	0.014***	0.021***	0.033***
	(0.0040)	(0.0038)	(0.0042)	(0.0039)
Age	-0.009***	-0.008***	-0.009***	-0.011***
	(0.0014)	(0.0013)	(0.0015)	(0.0012)
Age Squared	0.000***	0.000***	0.000***	0.000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Female	-0.016***	-0.016***	-0.016***	-0.027***
	(0.0052)	(0.0049)	(0.0055)	(0.0051)
Household characteristics				
Education household of the head	0.046***	0.042***	0.045***	0.055***
	(0.0066)	(0.0062)	(0.0070)	(0.0070)
Household size (Log)	0.017***	0.014***	0.016***	0.149***
	(0.0038)	(0.0035)	(0.0042)	(0.0021)
Regional controls				
Governorn is an opponent of Maduro	-0.006	-0.003	-0.006	-0.018**
	(0.0037)	(0.0031)	(0.0039)	(0.0089)
State education level (Log)	-0.055**	-0.045**	-0.054**	-0.076**
	(0.0215)	(0.0183)	(0.0233)	(0.0384)
State Employment	0.321***	0.359***	0.317***	0.448***
	(0.1102)	(0.1078)	(0.1146)	(0.1298)
Average income *per capita* (Log)	0.001	0.001	0.001	0.024***
	(0.0049)	(0.0046)	(0.0050)	(0.0080)
Population density (Log)	-0.005***	-0.005***	-0.003	-0.003
	(0.0012)	(0.0010)	(0.0159)	(0.0025)
Access to water	0.040**	0.035**	0.041**	0.060*
	(0.0174)	(0.0145)	(0.0181)	(0.0335)
Shortage of medicines	0.038***	0.042***	0.038***	0.042**
	(0.0137)	(0.0128)	(0.0140)	(0.0167)
Indigenous	-0.032	-0.026	-0.031	-0.035
	(0.0640)	(0.0632)	(0.0642)	(0.1441)
Rural Population	-0.012	-0.006	-0.011	-0.001
	(0.0128)	(0.0121)	(0.0130)	(0.0183)
Distance from national borders (Log)	0.001	-0.000	0.000	0.007
	(0.0022)	(0.0022)	(0.0024)	(0.0044)
Number of mines (Log)	-0.001	-0.002	-0.001	0.004**
	(0.0011)	(0.0011)	(0.0012)	(0.0015)
GNI	0.022**	0.016*	0.021**	0.030**
	(0.0094)	(0.0093)	(0.0093)	(0.0150)
Observations	19,776	19,716	18,607	20,868
Capital District observations	Yes	Yes	No	Yes
Migration outside LAC	Yes	No	Yes	Yes
Households migrated	No	No	No	Yes

Table 4: The effect of authoritative violence on the probability to migrate

Notes: Robust standard errors in parentheses and they allow for State Level clustering. Asterisks denote statistical significance:
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

	(1)	(2)	(3)	(4)	(5)
	Female	Male	No educated	High school	College graduated
Variable of interest					
Homicides committed by authorities (%)	0.014	0.119**	0.056***	0.016	0.089
	(0.0140)	(0.0533)	(0.0124)	(0.0449)	(0.0601)
Homicide rate (Log)	-0.001	-0.028	-0.016***	0.014	-0.030
	(0.0057)	(0.0251)	(0.0051)	(0.0163)	(0.0245)
Individual characteristics					
High School	0.018***	-0.002			
	(0.0048)	(0.0039)			
College graduated	0.028***	0.014**			
	(0.0040)	(0.0064)			
Age	-0.009***	-0.010***	-0.004***	-0.016***	-0.015***
	(0.0014)	(0.0023)	(0.0009)	(0.0033)	(0.0032)
Age Squared	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Female			-0.015***	-0.013*	-0.022*
			(0.0036)	(0.0072)	(0.0118)
Household characteristics					
Education of the household head	0.033***	0.060***	0.037***	0.062***	0.076***
	(0.0052)	(0.0097)	(0.0063)	(0.0096)	(0.0091)
Household size (Log)	0.014***	0.019***	0.002	0.048***	0.054***
	(0.0039)	(0.0057)	(0.0018)	(0.0102)	(0.0133)
Regional controls					
Governor is an oppent of Maduro	-0.001	-0.018	-0.010***	0.015	-0.026
	(0.0030)	(0.0111)	(0.0020)	(0.0102)	(0.0183)
State education level (Log)	-0.018	-0.156**	-0.025*	-0.088**	-0.175***
	(0.0136)	(0.0683)	(0.0150)	(0.0450)	(0.0430)
State Employment	0.164***	0.611**	0.147**	0.485**	0.758***
	(0.0580)	(0.2423)	(0.0604)	(0.2278)	(0.2205)
Average income *per capita* (Log)	-0.001	-0.002	0.000	0.011	0.014
	(0.0036)	(0.0101)	(0.0026)	(0.0106)	(0.0101)
Population density (Log)	-0.005***	-0.005	-0.004***	-0.007***	-0.005
	(0.0011)	(0.0040)	(0.0008)	(0.0023)	(0.0039)
Access to water	0.046***	0.048	0.045***	0.037	0.057
	(0.0124)	(0.0549)	(0.0109)	(0.0371)	(0.0601)
Shortage of medicines	0.006	0.085**	0.010	0.080***	0.089***
	(0.0072)	(0.0337)	(0.0083)	(0.0304)	(0.0232)
Indigenous	-0.007	-0.032	0.013	-0.014	0.085
	(0.0356)	(0.1375)	(0.0276)	(0.1456)	(0.0905)
Rural Population	-0.011*	-0.007	-0.011	-0.018	-0.020
	(0.0060)	(0.0338)	(0.0084)	(0.0260)	(0.0256)
Distance from national borders (Log)	-0.002*	0.005	0.000	0.002	0.014***
	(0.0012)	(0.0049)	(0.0011)	(0.0048)	(0.0043)
Number of mines (Log)	-0.002***	0.000	-0.001	-0.000	0.003
	(0.0007)	(0.0025)	(0.0007)	(0.0021)	(0.0025)
GNI	0.030***	0.020	0.015***	0.039*	0.014
	(0.0086)	(0.0196)	(0.0050)	(0.0212)	(0.0194)
Observations	10,973	8,803	12,020	5,095	2,661
Regional Controls	Yes	Yes	Yes	Yes	Yes
Capital District observations	Yes	Yes	Yes	Yes	Yes
Migration outside LAC	Yes	Yes	Yes	Yes	Yes
Households migrated	No	No	No	No	No

Table 5: Heterogeneous effects by Gender and Education

Notes: Robust standard errors in parentheses and they allow for State Level clustering. Asterisks denote statistical significance:
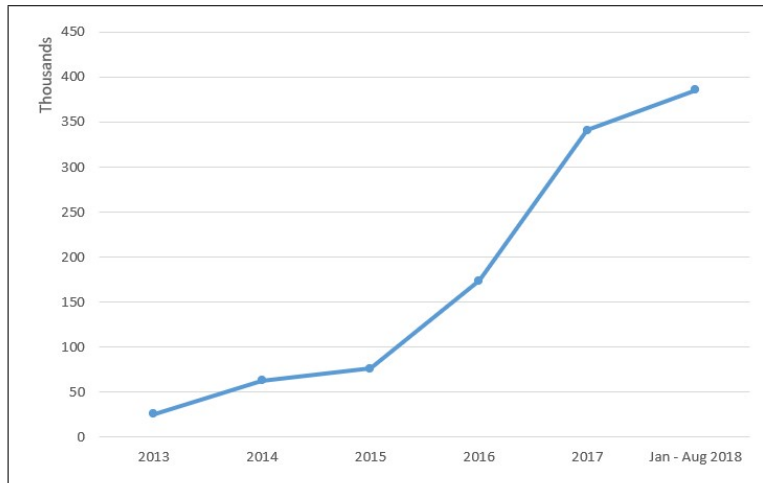*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Figure 1: Migration Trend (2013-2018)
Note: The plot in the figure shows the distribution of migrants by their year of departure from Venezuela.
Source: Authors' calculations using data from ENCOVI (2018).
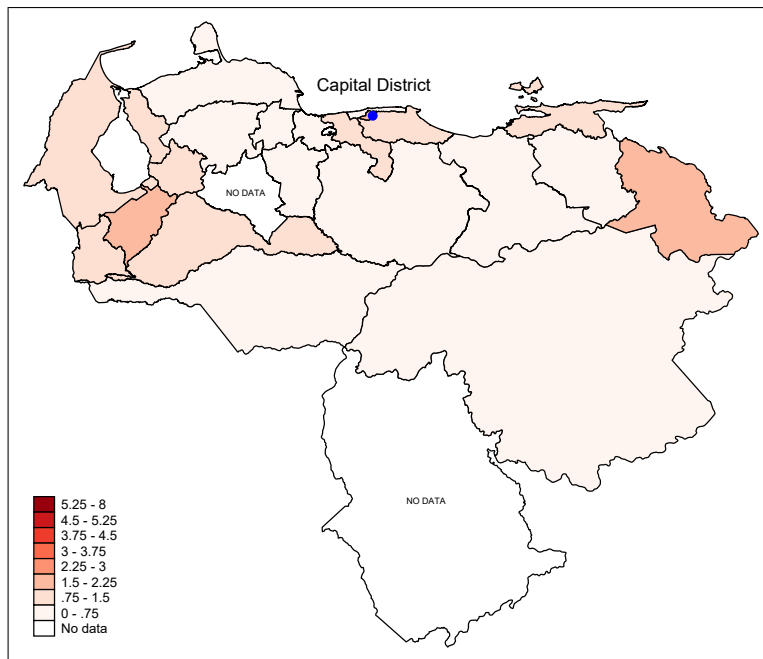

Figure 2: Average State Level Migration Rates (2013-2016)
Note: The map shows the migration rates for each state from the beginning of the Maduro *regime* to 2016, right before the implementation of the national police militarization.
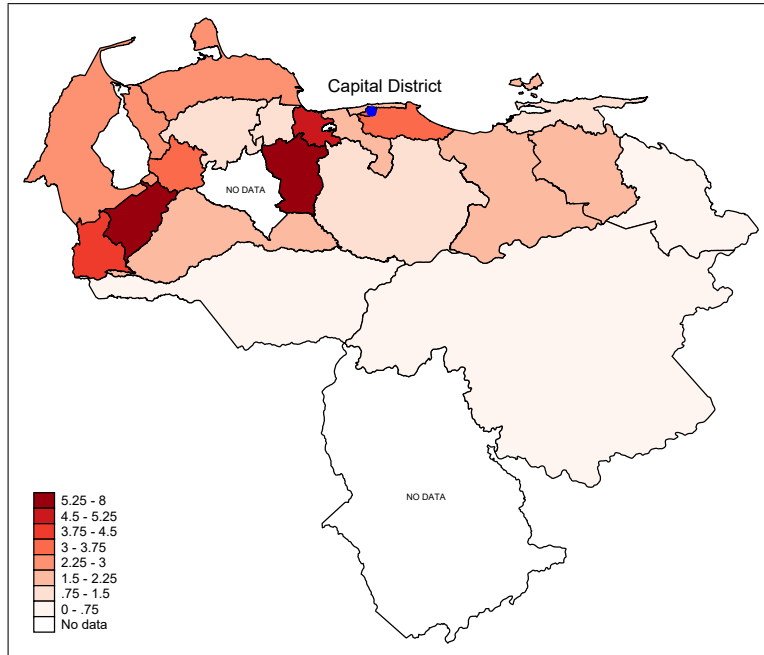Source: Authors' calculations using data from ENCOVI (2018).

Figure 3: Average State Level Migration Rates (2017-2018)
Note: The map shows the migration rates for each state from the year of the implementation of the national police militarization (2017) to the end of 2018.
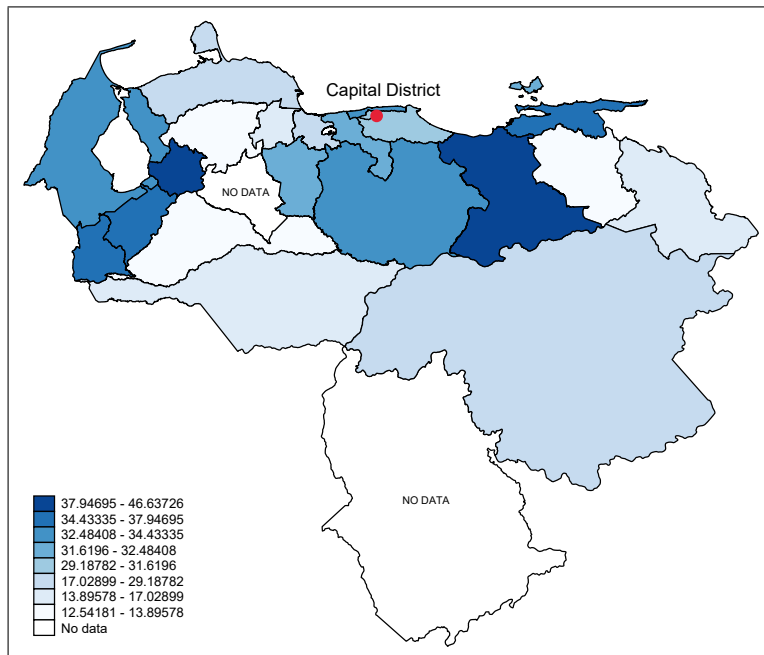Source: Authors' calculations using data from ENCOVI (2018).

Figure 4: Authoritative Violence (2017)
Note: The map shows for each Venezuelan state the percentage of homicides as a consequence of opposition to security forces out of the overall homicide rate in 2017.
Source: Informe Anual de Violencia 2017 - Observatorio Venezolano de Violencia.

Figure 5: Main Roads Distribution
Note: The red lines in the map show the distributions of the main roads in Venezuela.
Source: Geographical Data Repository - World Food Programme.

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Appendix

	(1)	(2)	(3)	(4)	(5)	(6)
	Authoritative Violence (%)			Authoritative Violence (Log)		
Instruments						
Kilometers from Caracas	-0.196***	-0.196***	-0.196***			
	(0.0281)	(0.0281)	(0.0283)			
Travel Time from Caracas				-0.756***	-0.756***	-0.833***
				(0.1448)	(0.1448)	(0.1189)
Regional controls						
Homicide rate (Log)	0.182***	0.182***	0.185***	1.531***	1.532***	1.379***
	(0.0409)	(0.0409)	(0.0412)	(0.2111)	(0.2112)	(0.1902)
Governor is an opponent of Maduro	0.375***	0.375***	0.375***	1.186***	1.186***	1.210***
	(0.0319)	(0.0318)	(0.0324)	(0.1650)	(0.1649)	(0.1554)
State education level (Log)	0.389***	0.389***	0.380***	1.248**	1.248**	1.725***
	(0.1373)	(0.1373)	(0.1405)	(0.6247)	(0.6249)	(0.5648)
State Employment	3.723***	3.722***	3.771***	11.518***	11.511***	10.967***
	(0.9019)	(0.9025)	(0.9677)	(3.9490)	(3.9485)	(3.3728)
Average income *per capita* (Log)	-0.191***	-0.191***	-0.189***	-0.335***	-0.335***	-0.401***
	(0.0299)	(0.0299)	(0.0295)	(0.0851)	(0.0851)	(0.0790)
Population density (Log)	-0.187***	-0.187***	-0.216***	-0.806***	-0.806***	0.208
	(0.0303)	(0.0303)	(0.0723)	(0.1747)	(0.1747)	(0.4431)
Access to water	-0.593***	-0.593***	-0.597***	-1.324***	-1.325***	-1.126**
	(0.1172)	(0.1171)	(0.1193)	(0.5002)	(0.5001)	(0.4534)
Shortage of medicines	0.418***	0.418***	0.423***	1.438***	1.438***	1.378***
	(0.0774)	(0.0774)	(0.0794)	(0.4386)	(0.4384)	(0.3877)
Indigenous	-0.438**	-0.438**	-0.431**	-0.228	-0.229	-0.190
	(0.2063)	(0.2061)	(0.2032)	(1.5515)	(1.5506)	(1.4924)
Rural Population	0.145	0.145	0.141	0.614*	0.613*	0.822**
	(0.0909)	(0.0909)	(0.0889)	(0.3649)	(0.3650)	(0.3661)
Distance from national borders (Log)	-0.104***	-0.104***	-0.102***	-0.242***	-0.242***	-0.304***
	(0.0137)	(0.0137)	(0.0134)	(0.0482)	(0.0481)	(0.0563)
Number of mines (Log)	0.010	0.010	0.010	0.072	0.072	0.086**
	(0.0064)	(0.0064)	(0.0065)	(0.0481)	(0.0480)	(0.0398)
GNI	-0.534***	-0.534***	-0.529***	-0.895**	-0.895**	-1.174***
	(0.0938)	(0.0937)	(0.0912)	(0.3623)	(0.3621)	(0.3592)
Under-indentification	5.65**	5.66**	5.68**	5.13**	5.13**	5.52**
Weak-identification:						
Kleibergen-Paap Wald F-stat	48.54	48.49	47.95	27.27	27.27	49.13
Stock-Yogo 10%	16.38	16.38	16.38	16.38	16.38	16.38
Stock-Yogo 15%	8.96	8.96	8.96	8.96	8.96	8.96
Montiel Olea-Pflueger F-stat	48.54	48.49	47.95	27.27	27.27	49.13
TSLS 5%	37.42	37.42	37.42	37.42	37.42	37.42
TSLS 10%	23.11	23.11	23.11	23.11	23.11	23.11
Observations	19,776	19,716	18,607	19,776	19,716	18,607
Capital District observations	Yes	Yes	No	Yes	Yes	No
Migration outside LAC	Yes	No	Yes	Yes	No	Yes
Households migrated	No	No	No	No	No	No

Table 6: First-stage estimates of the authoritative violence. Robustness Checks

*Notes: Cluster standard errors at state level. Asterisks denote statistical significance:*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$*

	(1)	(2)	(3)	(4)	(5)	(6)
	IV Kilometers from Caracas			**IV** Time Travel From Caracas		
Variable of interest						
Homicides committed by authorities (%)	0.060***	0.061***	0.060***			
	(0.0197)	(0.0201)	(0.0197)			
Homicides committed by authorities (Log)				0.012**	0.013**	0.012**
				(0.0056)	(0.0053)	(0.0054)
Homicide rate (Log)	-0.011	-0.009	-0.011	-0.020*	-0.019*	-0.020*
	(0.0089)	(0.0081)	(0.0096)	(0.0116)	(0.0099)	(0.0119)
Individual characteristics						
High School	0.010***	0.008***	0.010***	0.010***	0.008***	0.010***
	(0.0034)	(0.0028)	(0.0036)	(0.0034)	(0.0028)	(0.0036)
College graduated	0.022***	0.014***	0.021***	0.022***	0.014***	0.021***
	(0.0040)	(0.0038)	(0.0041)	(0.0040)	(0.0038)	(0.0042)
Age	-0.009***	-0.008***	-0.009***	-0.009***	-0.008***	-0.009***
	(0.0014)	(0.0013)	(0.0015)	(0.0014)	(0.0013)	(0.0015)
Age Squared	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Female	-0.016***	-0.016***	-0.016***	-0.016***	-0.016***	-0.016***
	(0.0052)	(0.0049)	(0.0055)	(0.0052)	(0.0049)	(0.0055)
Household characteristics						
Education of the household head	0.046***	0.042***	0.045***	0.046***	0.042***	0.045***
	(0.0066)	(0.0062)	(0.0070)	(0.0066)	(0.0062)	(0.0070)
Household size (Log)	0.017***	0.014***	0.016***	0.017***	0.014***	0.016***
	(0.0038)	(0.0035)	(0.0042)	(0.0038)	(0.0035)	(0.0042)
Regional controls						
Governor is an opponent of Maduro	-0.009*	-0.006	-0.009*	-0.005	-0.003	-0.005
	(0.0046)	(0.0046)	(0.0047)	(0.0037)	(0.0029)	(0.0036)
State education level (Log)	-0.056***	-0.045***	-0.055**	-0.054***	-0.044**	-0.054**
	(0.0208)	(0.0176)	(0.0227)	(0.0207)	(0.0175)	(0.0224)
State Employment	0.321***	0.359***	0.316***	0.334***	0.373***	0.337***
	(0.1031)	(0.1026)	(0.1082)	(0.1068)	(0.1036)	(0.1128)
Average income *per capita* (Log)	0.002	0.001	0.002	0.001	0.001	0.001
	(0.0053)	(0.0050)	(0.0053)	(0.0048)	(0.0045)	(0.0049)
Population density (Log)	-0.005***	-0.005***	-0.003	-0.005***	-0.005***	-0.007
	(0.0013)	(0.0011)	(0.0164)	(0.0012)	(0.0010)	(0.0154)
Access to water	0.047***	0.041**	0.048***	0.041**	0.037***	0.041**
	(0.0173)	(0.0161)	(0.0182)	(0.0173)	(0.0140)	(0.0173)
Shortage of medicines	0.036***	0.040***	0.036***	0.040***	0.044***	0.041***
	(0.0126)	(0.0119)	(0.0130)	(0.0131)	(0.0121)	(0.0134)
Indigenous	-0.021	-0.018	-0.022	-0.025	-0.019	-0.025
	(0.0614)	(0.0619)	(0.0614)	(0.0619)	(0.0605)	(0.0623)
Rural Population	-0.012	-0.006	-0.011	-0.010	-0.004	-0.010
	(0.0119)	(0.0114)	(0.0122)	(0.0121)	(0.0114)	(0.0124)
Distance from national borders (Log)	0.001	0.000	0.001	0.001	0.000	0.001
	(0.0022)	(0.0021)	(0.0023)	(0.0021)	(0.0021)	(0.0023)
Number of mines (Log)	-0.001	-0.002	-0.001	-0.002	-0.002*	-0.002
	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0011)	(0.0012)
GNI	0.023**	0.018	0.022**	0.021**	0.016*	0.021**
	(0.0108)	(0.0107)	(0.0105)	(0.0094)	(0.0094)	(0.0093)
Observations	19,776	19,716	18,607	19,776	19,716	18,607
Capital District observations	Yes	Yes	No	Yes	Yes	No
Migration outside LAC	Yes	No	Yes	Yes	No	Yes
Households migrated	No	No	No	No	No	No

Table 7: The effect of authoritative violence on the probability to migrate

Notes: Robust standard errors in parentheses and they allow for State Level clustering. Asterisks denote statistical significance:
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$