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MONITORING AND EVALUATION SUPPORT FOR COLLABORATIVE LEARNING AND ADAPTING (MESCLA) ACTIVITY

FINAL MIGRATION REPORT

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- Draft 1 – July 14, 2021
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- Draft 3 – August 26, 2021
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ACRONYMS

ASI	Agricultural Stress Index
CBP	Customs and Border Protection
CDC	Center for Disease Control
CDCS	Country Development Cooperation Strategy
CENISS	Centro Nacional de Información del Sector Social
COPECO	Permanent Commission on Contingencies of Honduras
DEC	Development Experience Clearinghouse
DHS	Department of Homeland Security
DO	Development Objective
EMIF	Encuestas sobre Migración en la Frontera de México
EPHPM	Encuesta Permanente de Hogares de Propósitos Múltiples
FAO	Food and Agricultural Organization
FHIS	Fondo Hondureño de Inversión Social
FTF	Feed the Future
FY	Fiscal Year
GBV	Gender-based Violence
GDP	Gross Domestic Product
GOH	Government of Honduras
HLG	Honduras Local Governance
INE	Instituto Nacional de Estadística
IPV	Intimate Partner Violence
IZA	Institute for the Study of Labor
LAPOP	Latin American Public Opinion Project
MESCLA	Monitoring & Evaluation Support for Collaborative Learning and Adapting
NDVI	Normalized Difference Vegetation Index
NORC	National Opinion Research Center
NVMS	National Victimization, Security, and Migration Survey
OFO	Office of Field Operations
OLS	Office of Local Sustainability
PPI	Poverty Probability Index
REDODEM	Red de Organizaciones Defensoras de Migrantes
RLVS	Rural Livelihoods and Violence Study
SEDUC	Secretaría de Educación
SEPOL	Secretariat of Police
SPS	San Pedro Sula
SSRN	Social Science Research Network
UNAH	Universidad Nacional Autónoma de Honduras
USAID	United States Agency for International Development
USBP	U.S. Border Patrol

1. INTRODUCTION

The United States Agency for International Development (USAID)/Honduras Mission seeks to build its knowledge about the determinants and drivers of irregular migration to the U.S. and to better understand how its portfolio affects these drivers. Since 2017, the Monitoring & Evaluation Support for Collaborative Learning and Adapting (MESCLA) Activity has supported the Mission in this task. Particularly, the Activity has sought to help USAID/Honduras better understand the complex and intertwined drivers of migration (such as economic challenges, high violence and insecurity, and weak institutions and impunity), in order to advance learning about the root causes and to ultimately support USAID/Honduras's Country Development Cooperation Strategies or CDCSs (2015-2020 and 2020-2025).

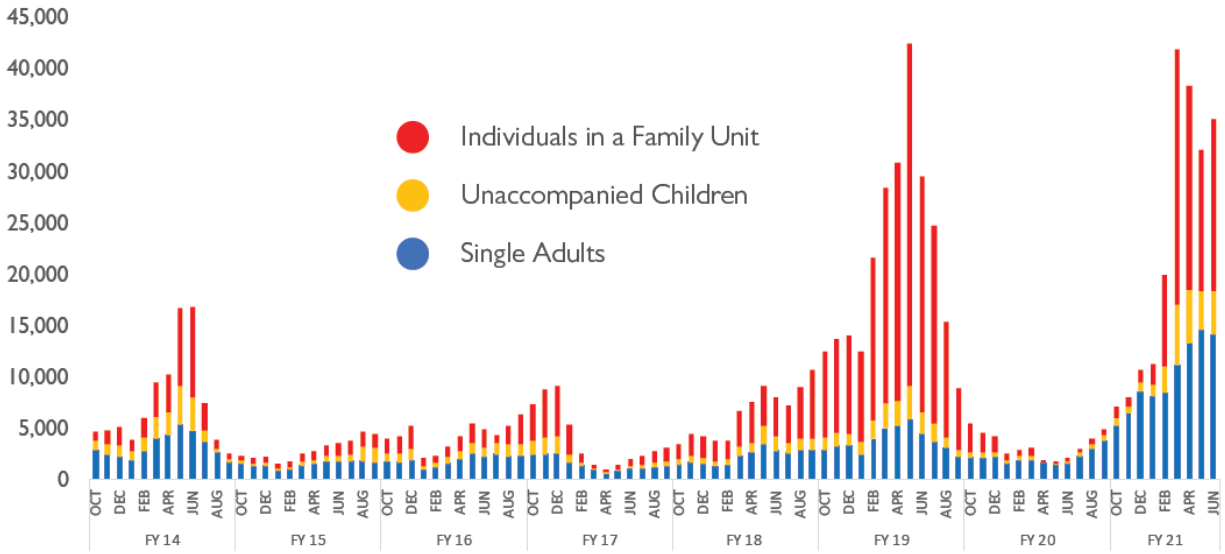
This report is a compilation of MESCLA's migration related learning over the last five years.

2. HONDURAS MIGRATION TRENDS AND CHANGES

Between the beginning of the Fiscal Year (FY) 2014 through June 2021, the Department of Homeland Security (DHS)/Customs and Border Protection (CBP) officials encountered approximately 800,0000 Hondurans at the U.S. southwest border. From mid FY2018 there have been dramatic peaks and troughs in these numbers, with peaks characterized by high numbers of migrants traveling in family units. Family units were the largest category (52%) of encountered migrants for the period 2014-2021.

The following section provides basic context on migration trends, and changes in these trends, from 2013/14 - 2021 to better describe who migrates, from where, and who is returned.

Figure 1: Hondurans Encountered by Customs and Border Protection (CBP) by Travel Status, 2014-2021



Source: DHS/CBP, analysis by USAID

2.1 Migrant Profiles[1]

- Based on DHS/CBP data from January 2013-June 2020, migrants encountered at the border are 40% female and 60% male, with an average age of 20 and 22 years respectively and a modal age range of 16-17. (There was a dramatic spike in the number of migrants encountered at ages 16 and 17 years).
- With respect to returned migrants, very few Hondurans returned by U.S. authorities between January 2016 and June 2020 were under the age of 18 (accounting for less than 2% of U.S. returns, compared to 21% of U.S. border encounters) and only 12% were female (compared to 40% of migrants encountered at the border). During this period, Mexico returned the majority of Hondurans deported by foreign governments (57%), while the U.S. authorities returned 42% of them. (Centro Nacional de Información del Sector Social [CENISS])
- Most Hondurans encountered by U.S. authorities were apprehended after crossing the border. A smaller share were deemed inadmissible at a port of entry, including some of those seeking asylum. Apprehensions made up 94% of those encountered from 2013-June 2019 but the inadmissible category, like the numbers of migrants detained as a part of a family group, increased steadily. Those who made up the inadmissible category were younger and more likely

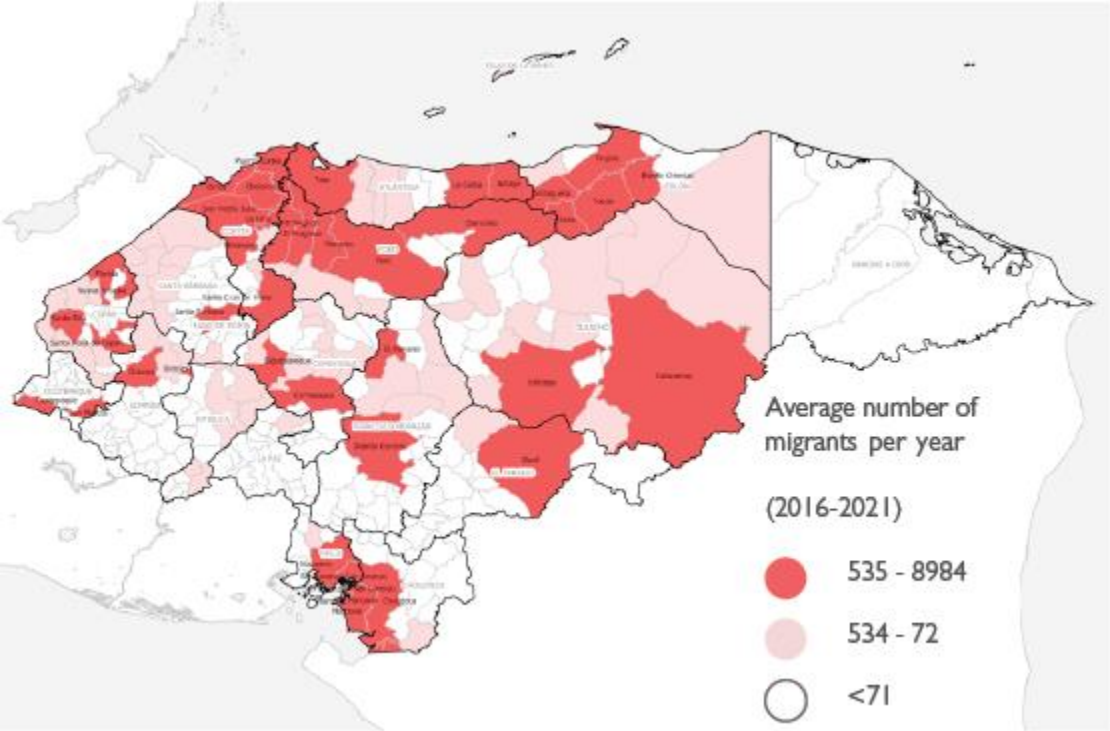
[1] Using CBP and Centro Nacional de Información del Sector Social (CENISS), Encuestas sobre Migración en la Frontera de México (EMIF).

to be female than those apprehended. From October 2020 through May 2021, 65% of inadmissibles processed by the Office of Field Operations (OFO) were traveling in family units, compared to 42% of apprehensions.[2]

- Migrants appearing more than once at the U.S. Border in a 12-month period are classified as repeat migrants and the percentage of repeat migrants/total migrants in a given period is the recidivism rate. In FY2018 and FY2019 this rate averaged 13%. In FY2020 it jumped to 26%, and in FY2021 through June, was running at approximately 37%. This may be due to the implementation of Title 42, the COVID-19 pandemic related Center for Disease Control (CDC) order that allows the DHS to expel migrants to Mexico without immigration processing. It seems that many migrants remain in Mexico and try again.
- Returnees from the five urban high-crime municipalities[3] that USAID targeted in its previous CDCS are less educated than the general population in those areas, and for the two municipalities with occupational data at this level (Distrito Central and San Pedro Sula [SPS]), are less likely to have salaried work in retail or manufacturing than is the general population from those two municipalities.
- Migrants encountered at the U.S. southwest border come from all over Honduras, however, in both urban and Western Honduras areas, some municipalities are bigger and/or denser producers of attempted migrants than others. The map below shows the levels of migration across the country, without accounting for population or geography.

[2] U.S. CBP. U.S. Southwest Land Border Encounters, FY2021 (October-May). Accessed at https://www.cbp.gov/newsroom/stats/southwest-land-border-encounters. Calculations by authors.
[3] Choloma, Distrito Central, La Ceiba, San Pedro Sula, Tela

Figure 2: Average Number of Encountered and Returned Migrants by Municipality 2016 – June 2021



Source: DHS/CBP SW Border Apprehensions, CENISS

3. DETERMINANTS

The drivers of migration are multi-dimensional, interactive and affected by individual, family, community, municipal, national and global factors, including past events and trends. Additionally, drivers do not act in isolation but interact with one another. For example, violence can shape emigration through direct threats to physical safety or through enlarging migrant networks and/or affecting the local economy.

This section about determinants of migration considers migration as measured by DHS/CBP reported encounters[4] with migrant at the U.S. Southwest Border, migrants returned by government authorities to Honduras from Mexico, the United States, Guatemala and other countries reported by CENISS, and also intent to migrate, which is measured in population-based surveys applied in Honduras.

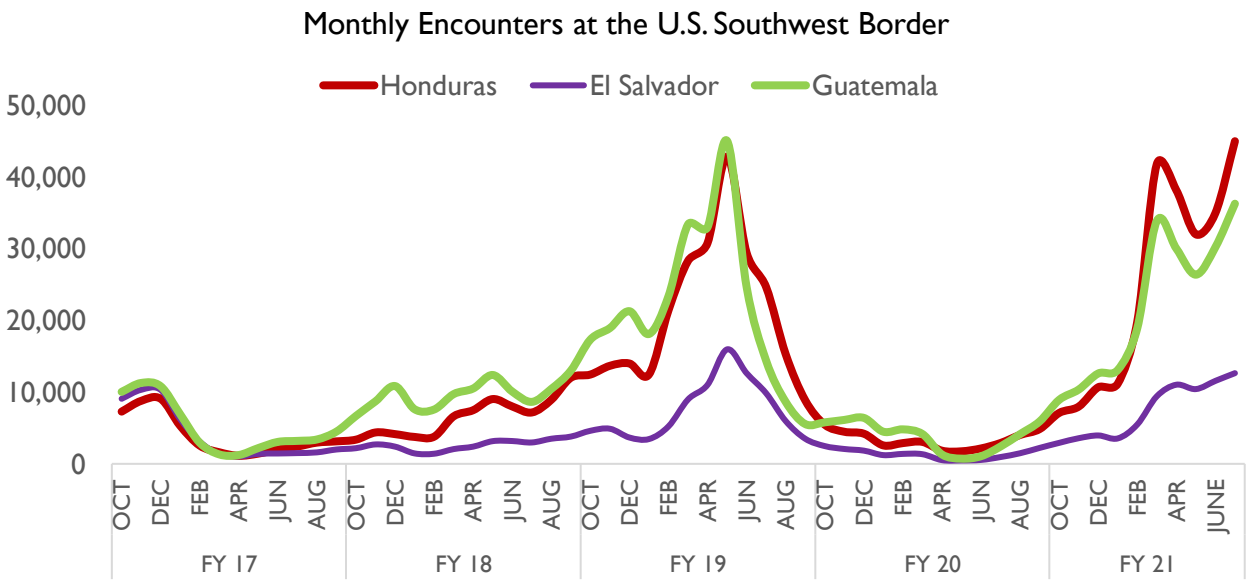
[4] Encounter data includes U.S. Border Patrol (USBP) Title 8 Apprehensions, OFO Title 8 Inadmissibles, and Title 42 Expulsions for fiscal years (FY) 2020 and 2021, Source: https://www.cbp.gov/newsroom/stats/nationwide-encounters.

Intent to migrate is included because studies at the national, regional, and more recently, global levels show a strong association between intent to migrate and actual migration flows with the relationship stronger for those who report having prepared in some concrete way (Docquier, et al. 2014; Tjaden, Auer and Laczko 2018). However, it is important to keep in mind while reading the findings that many more people report intentions to migrate than actually follow through on those plans, possibly because they may have the aspiration to migrate without having the capability to bring those aspirations to fruition. Nonetheless, the strong correlation between intentions to migrate and actual migration flows validates the use of this survey question to help understand migration patterns.

3.1 International and National Level factors

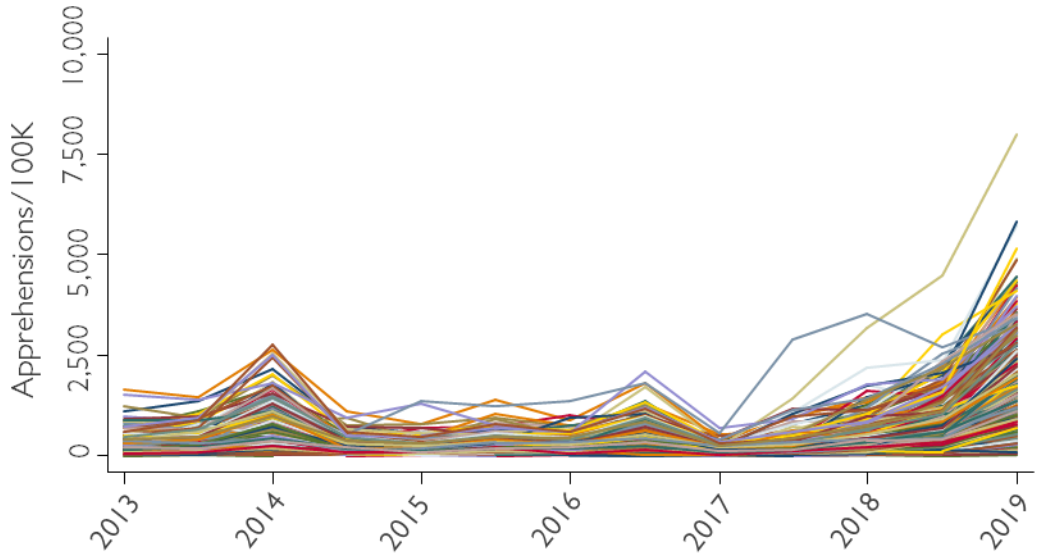
It is clear from Figure 3 below that migration patterns are similar across the Northern Triangle Countries. In Figure 4, each line represents a single municipality in Honduras, indicating that municipal-level migration patterns mostly follow the national level trends. Both those findings suggest that national and international factors that affect municipal migration rates uniformly are crucial drivers of migration patterns. To further illustrate the point that migration rises and falls in unison across municipalities in Honduras, a chart that depicts the highly varied pattern of municipal homicide rates over time is provided for comparison (Figure 5).

Figure 3: Similar Migration Trends Throughout the Northern Triangle



Source: DHS/CBP data, graph created by USAID / Honduras

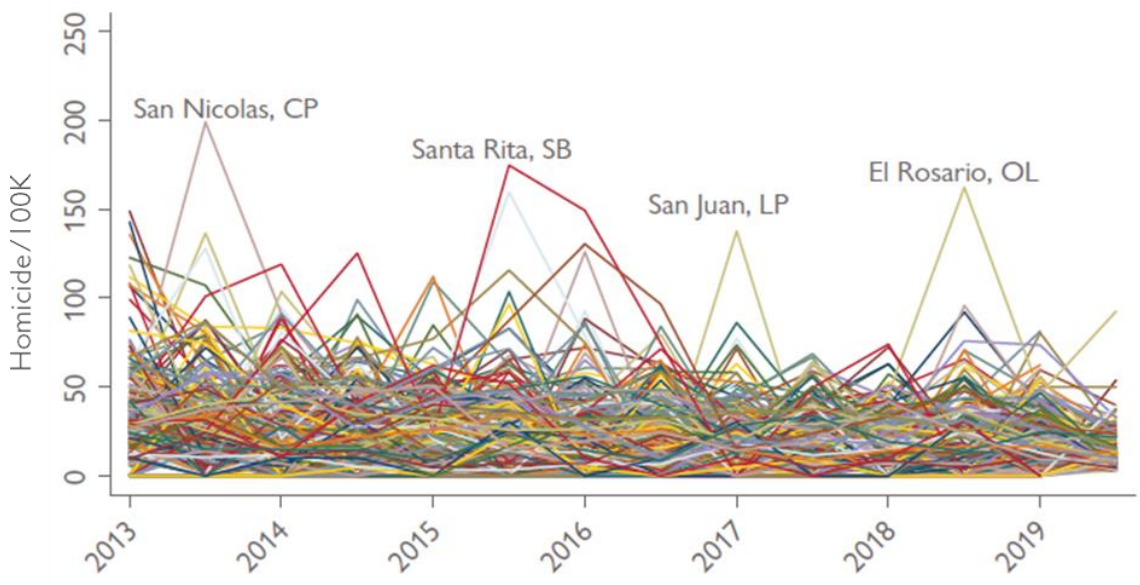
Figure 4: Municipal Apprehension Rates (2013-219)



Note: Each line represents a municipality

Source: DHS/CBP. Analysis and elaboration by MESCLA

Figure 5: Municipal Homicide Rates (2013-2019). All Hondurans Municipalities



Note: Each line represents a municipality

Source: SEPOL. Analysis and elaboration by MESCLA

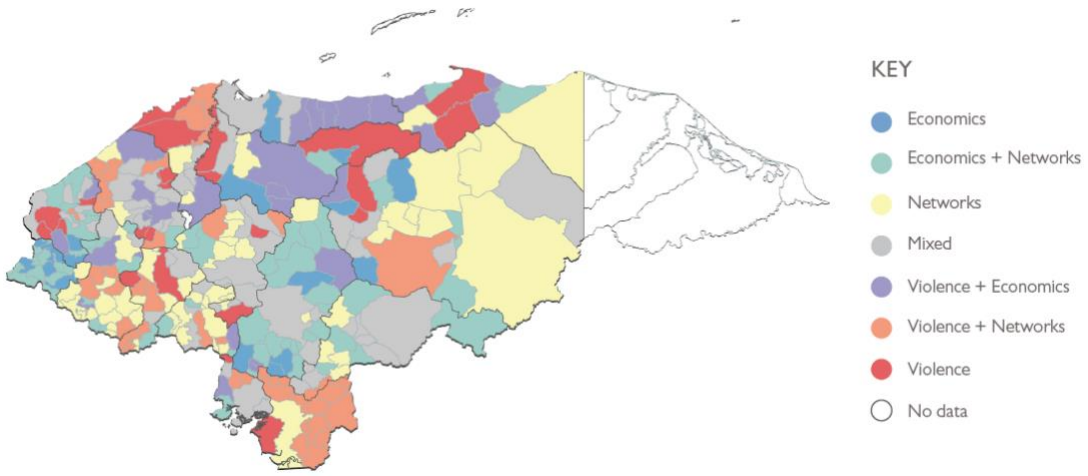
3.2 MUNICIPAL LEVEL FACTORS

Within Honduras, municipal-level migration patterns mostly follow the national trends suggesting that national and international factors affect municipal migration rates uniformly and are crucial drivers of migration patterns. Additionally, drivers do not act in isolation but interact with one another. For example, violence can shape emigration through direct threats to physical safety or through enlarging migrant networks and/or affecting the local economy.

Our analysis begins by assessing the relative importance of economic, violence, and migrant network factors in explaining the variance in cumulative municipal apprehensions rates from 2013 through the first half of 2019. We also assess the relative importance of these sets of factors for each municipality and map the results by identifying the municipalities where one or more sets of factors are much more important than other factors in explaining apprehension rates when compared to other factors. This exercise generates seven categories represented on the map (see Figure 6).

The series of factors presented in the map below explain 57% of the variance in municipal migration rates in the 2013-2019 period. For example, the violence factors explain much more variation in the apprehension rate compared to either economic or network factors for the municipalities shown in "red." This means that a change (positive or negative) in the variables mapped predicts a change in migration. Said another way, a "red" municipality means that any change (positive or negative) in homicides there would explain more of the predicted change in migration at the U.S. border than would a change in either economic or network factors. In the map below, 60% of municipalities have two or more explanatory factors, with family networks being the strongest predictor of municipal migration rates among the variables studied.

Figure 6: Various Migration Drivers Across Honduras



Source: CBP, INE[5], SEPOL

3.3 INCOME/POVERTY/OCCUPATION

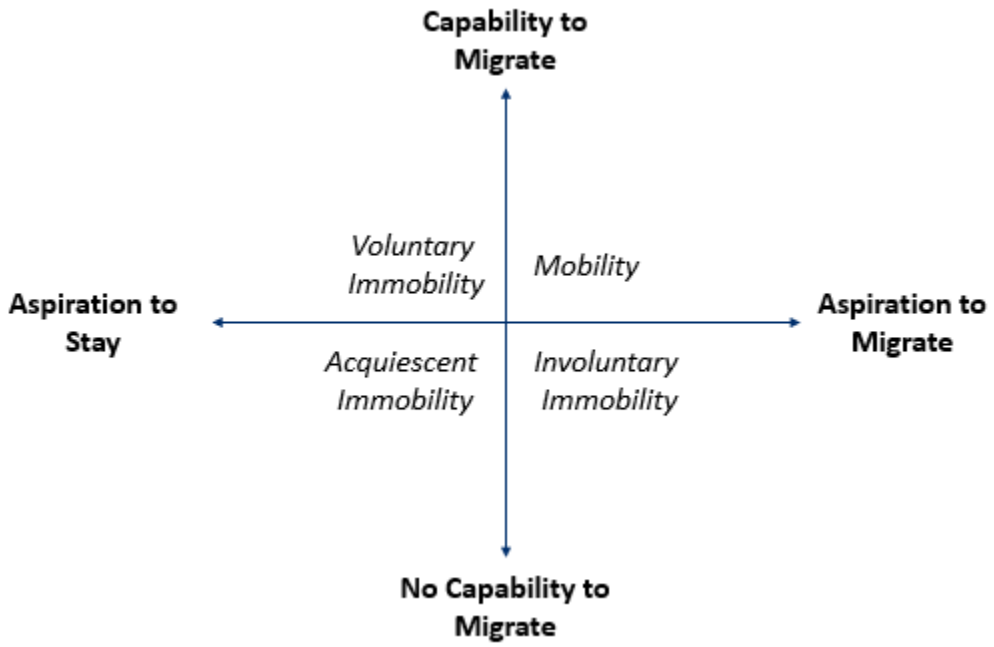
3.3.1 THEORY

The relationship between economic factors and migration is complex. There is considerable evidence that poverty is associated with less, not more migration. At the same time, when asked, migrants overwhelmingly say economic factors as the primary reason for migrating. To better understand this relationship, MESCLA looked both at theories of aspiration, mobility and immobility and studies of historical migration data.

The "aspiration-ability" model was introduced by Carling (2002), whose chief insight was that many people wish to migrate but lack the means to do so: the "involuntarily immobile." In the model, both aspiration and ability are determined by macro (system) level factors including political, economic, and social context—and individual-level factors (Carling and Schewel 2018: 946). Expanding on these ideas, Schewel developed the simple but instructive typology below (2019: 8). The two-by-two matrix in Figure 7 creates four categories of people. Only a combination of capability *and* aspiration results in migration.

[5] *Instituto Nacional de Estadística.*

Figure 7: (Im)mobility Categories Suggested by the Aspiration-Capability Framework



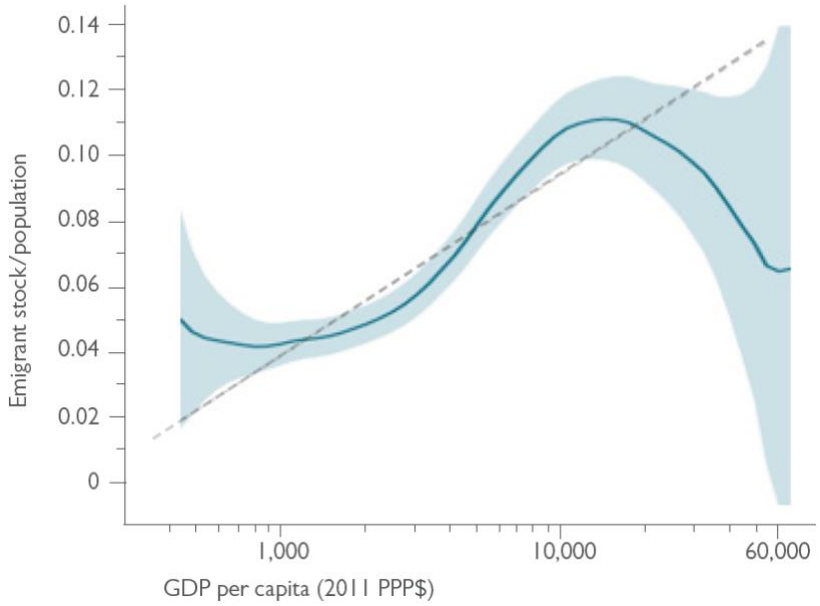
Source: Carling and Schewel 2019

Historical migration data seems to suggest that there are indeed latent aspirations to migrate (involuntary immobility), as there is relatively little migration at the lowest level of Gross Domestic Product (GDP)/capita, then the rate steady increases until it reaches an economic tipping point of about 10,000 USD (U.S.$ GDP/capital at 2011 Purchasing Power Parity) then migration falls (Clemens 2020[6]).

Figure 8 is from Dr. Clemens' 2020 work and looks at all low- and middle-income countries between 1960 and 2019, showing the relationship between the emigration rate and real GDP per capita. The line is the moving average, and the shaded blue represents the 95% confidence level.

[6] Clemens, Michael Andrew, The Emigration Life Cycle: How Development Shapes Emigration from Poor Countries. IZA (Institute for the Study of Labor) Discussion Paper No. 13614, Available at the Social Science Research Network or SSRN: https://ssrn.com/abstract=3679020.

Figure 8: Emigration Rate and GDP/capita



Source: Clemens 2020

Together, Figures 7 and Figure 8 help explain long-term fluctuations and provide a solid theoretical basis for understanding why poorer municipalities in Honduras send fewer migrants, and higher rates of unmet basic needs are associated with lower not higher municipal migration rates.[7]

Nonetheless, in Honduras, economic factors have overwhelmingly been reported as the primary reason for migrating in data collected from migrants returned to Honduras by government authorities (CENISS). Economic factors are also the most common reasons for reported intent to migrate in urban areas and nationwide (Latin American Public Opinion Project or LAPOP 2018, DO1 Victimization 2019, 2019 and National Victimization, Security and Migration survey 2021). Honduran migrants seeking service from the REDODEM (*Red de Organizaciones Defensoras de Migrantes*) network in Mexico in 2019, reported economic motivations (unemployment, poorly paid employment) in 69% of cases.

3.3.2 FINDINGS

- Among migrants who were returned by authorities to Honduras between 2016 and 2020, economic factors were overwhelmingly reported (93%) as the main reason for intent to

[7] Using 2013 census data, MESCLA compiled a municipal Poverty Probably Index. When analyzed in relation to apprehended migrants poorer municipalities sent fewer migrants.

migrate nationwide (family motives accounted for 15% and violence for 5%).[8] Furthermore, a logistic regression show that being food secure but not earning enough to meet other needs is predictive of 71% higher chances of intention to migrate that being food secure and earning enough to cover other needs.

- Food insecurity is a predictive factor of intent to migrate (LAPOP 2018, Rural Livelihood and Violence Study [RLVS] 2020, DO1 Victimization 2020 and the NVSM 2021). Both LAPOP 2018 and DO1 Victimization 2020 showed that respondents experiencing food insecurity were 11% more likely to intend to migrate, while in the National Victimization Survey 2021, 48% reported experiencing food insecurity in the past three months (up from 44% in LAPOP 2018) and were 31% more likely to intend to migrate to the U.S. MESCLA and Pulte Institute at Notre Dame University explored the economic variables that significantly predicted the likelihood of having intent to migrate and found important interactions among them. For individuals and households that are food secure, having insufficient income leads to 71% more likelihood of intent to migrate. Those who are food insecure and not unemployed (work at home/employed) are 123% more likely to intend to migrate than those who are food secure and employed, while those both food insecure and unemployed 376% more likely.

Table 1: Odds Ratio of Having Migration Intentions to the U.S., by Combined Effect of Food Insecurity , Unemployment and Income Sufficiency

Variable	Odds-ratio
No food insecurity, sufficient household income	Reference category
No food insecurity, insufficient household income	1.71***
Food insecurity, respondent not unemployed	2.23***
Food insecurity, respondent unemployed	4.76***

*p<0.10, **p<0.05,***p<0.001

[8] MESCLA-led 2021 National Victimization, Security and Migration survey, USAID.

- According to the 2020 RLVS, authored by Dr. Rebecca J. Williams and Dr. Larry Vaughan at the University of Florida and commissioned by USAID/Honduras, among five rural municipalities in western Honduras, food (in)security was one of the most important predictors of intent to migrate in the study. This was because it directly and indirectly influenced intentions to migrate through its effect on other determinants, including perceptions of community support for youth. The study also identified access to at least one hectare of land as critical for improving food security/resilience.
- A Feed the Future (FTF) Case Study (MESCLA/Zamorano, 2019), done as a complement to the MESCLA FTF evaluation, showed that access to irrigation allowed users to maintain food security. While the case study did not look at access to irrigation and intent to migrate, the 2021 NVSM Survey showed the importance of food insecurity, regardless of employment status, to migration intentions.
- There is some limited evidence[9] that USAID interventions are associated with less intent to migrate. The previous Development Objective 2 (DO2) in the 2015-2020 CDCS aimed to sustainably reduce extreme poverty by increasing production and creating resilience at the household and watershed levels, as well as by improving services and governance. Thus, assessing whether DO2 beneficiaries were less likely to intend to migrate than a comparison group may indicate whether they were better able to deal with shocks to prices, drought, and other factors. Households in municipalities supported by USAID in the previous DO2 departments reported less intention to migrate than the national average. (Honduras Local Governance [HLG] 2018). This tendency was even more pronounced among direct FTF beneficiaries, including across all the comparable age groups (18-23, 24-29, 30-34, and 35+)[10].

[9] The FTF beneficiary survey cited below was not an externally commissioned study as were the two large population-based surveys done by LAPOP Americas Barometer and MESCLA/Vanderbilt for the HLG survey. FTF data collection was undertaken by Activity staff, and it is impossible to control for certain variables that might be separately associated with intent to migrate.

[10] USAID FTF may not be representative of the population in general. They are older and also on selection criteria is access to land, which is some countries is associated with less migration.

Table 2: Comparison of Migration Intentions in 2018

Age Group	18-23	24-29	30-34	>35	Overall Intention to Migrate (weighted by age distribution) LAPOP, survey for FTF and HLG
FTF Beneficiaries	16%	14%	12%	9%	12%
HLG Western Honduras (USAID Target Communities)	29%	35%	28%	17%	24%
LAPOP National level	51%	46%	47%	28%	38%

The Development Objective 1 (DO1) of the 2015-2020 CDCS aimed to improve citizen security in five high crime municipalities. The 2021 NVSM survey showed 55% of respondents nationally intended to migrate in the next three years. By comparison, the DO1 Effectiveness Evaluation, which focused on USAID target communities and whose data was collected at the same time, showed only 36% of respondents intending to migrate. In the *Fondo Hondureño de Inversión Social* (FHIS) 2021 Survey of USAID beneficiaries (urban and rural), intent to migrate was 33%.

Table 3: Comparison of Migration Intentions in 2018

Study	Intentions to Migrate
NVSM 2021	55% (53% for urban population)
DO1 Effectiveness Evaluation 2021	36%
Fondo Hondureño de Inversión Social (FHIS) 2021, Beneficiary Survey	33%

3.4 Drought, Hurricanes and Coffee Price Shocks

3.4.1 Theory

It is plausible to hypothesize that extreme weather events like hurricanes and slow-onset weather patterns like drought will generate more migration and displacement (e.g., Feng, et al 2010). However, scholars are increasingly putting forth the counter-intuitive hypothesis that these sorts of events may

reduce mobility or that effects may not be simple and one-dimensional (e.g., Cattaneo, et al. 2019; Riosmena, et al. 2018; Suckall et al. 2017).

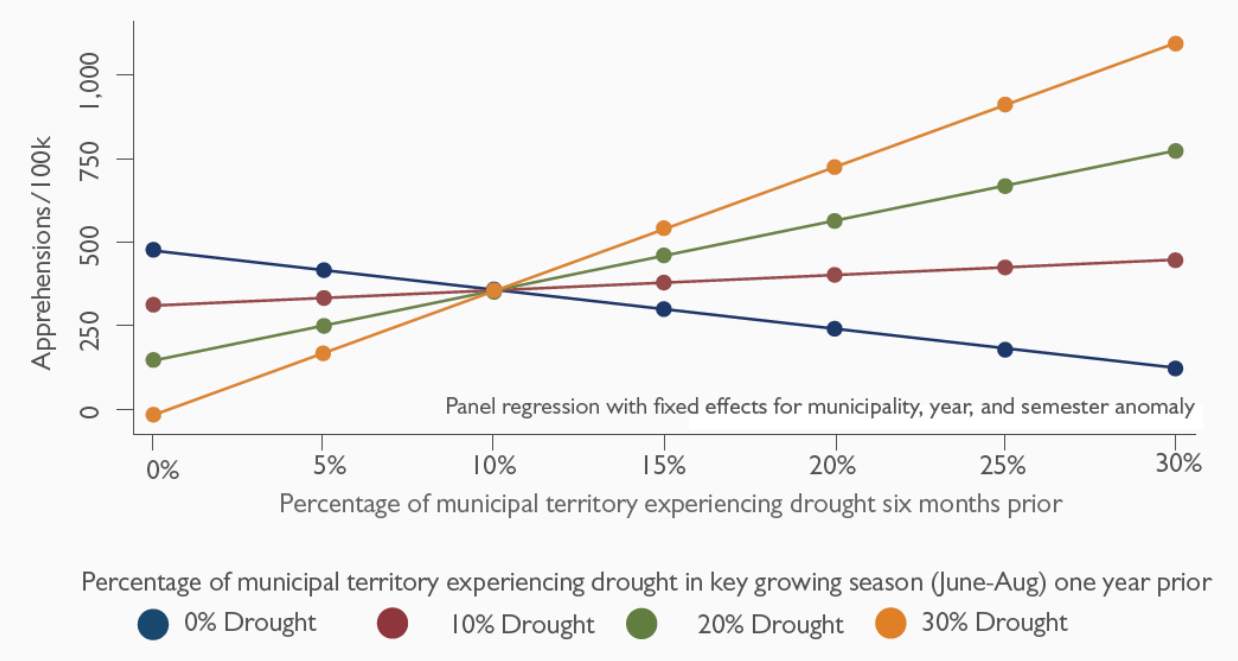
3.4.2 FINDINGS

3.4.2.1 DROUGHT

- Migration from Honduras has become less dominated by urban centers in recent years, possibly due to drought and low coffee prices.
    - More rural municipalities and those with higher shares of workers in agriculture historically have lower migration rates in Honduras compared to less agricultural municipalities. This is still the case, as Honduran migrants are less likely to come from more agrarian municipalities. However, the high urban-high migration relationship has become less clear in recent years.
    - From 2017 through 2020, the average annual increase in the number of migrants returned as a share of municipal population was almost twice as high for the most rural municipalities (26% increase) compared to the least agrarian municipalities (13% increase).[11]
    - In MESCLA's National Victimization, Security, and Migration 2021 survey, a higher share of rural residents (43%) than urban dwellers (37%) reported intentions to migrate

[11]Analysis of Government of Honduras (GOH) returned migrant survey and 2013 census, INE. We separate municipalities into four quartiles based on the percentage of economically active persons working in agriculture. The average share of workers in the fourth quartile was 86%; the average in the first quartile was 34%

Figure 9: Drought has a Long-Term and Cumulative Impact on the U.S. Border Apprehension Rate



Source: DHS/CBP; Normalized Difference Vegetation Index (NDVI) avg. half−yearly and June −August maximum negative anomaly. Analysis by MESCLA.

- Drought: the intensity of drought, amount of territory affected, and successive periods of drought are related to municipal migration rates. This analysis, which tracks changes in municipal-level drought and U.S. border apprehensions over time, uses two different measurements of drought, one reflecting the average drought lagged by six months and one measuring the growing season drought lagged by one year.[12] The analysis tests the interaction between these two measurements to test the hypothesis that the effect of recent drought—here the average level in the period six months prior—may vary depending on what happened during the past growing season. Stated differently, we hypothesized that the effect of drought on emigration would be cumulative, having no effect, or even a negative effect in the short term and a positive effect with successive seasons of drought.

[12] Drought is measured in this analysis using the Food and Agricultural Organization's (FAO) Normalized Difference Vegetation Index (NDVI) measures the "greenness" of ground cover and is used as a proxy to indicate the density and health of vegetation. The growing season average NDVI is the percentage of municipal territory experiencing a high negative NDVI anomaly from June through August. The average high negative NDVI anomaly is calculated for each half-year period as well.

- As shown graphically above, this hypothesis was confirmed, as the effect of drought on apprehensions is conditional on the presence and intensity of drought during the last growing season. Drought drives additional emigration six months later in municipalities that also experienced drought during the previous year's growing season (orange line). In contrast, drought led to fewer apprehensions six months later for municipalities unaffected by drought in the prior year's growing season (blue line).
- Analysis of a different indicator of drought over a longer period of time also showed how increases in drought predict increases in migration, even when controlling for other factors[13]. Analysis shows that home-municipality drought (as measured by the Food and Agricultural Organization (FAO)'s Agricultural Stress Index) has a long-term and cumulative impact on the U.S. border apprehension rate. For example, in the average Honduran municipality,[14] a 10-percentage point increase in municipal drought, sustained over five years, predicts about 90 additional apprehensions in the current year.[15]

3.4.2.2 HURRICANES

While drought is positively associated with migration in Honduras, the association between extreme weather events, specifically hurricanes Eta and Iota, and migration is more difficult to identify in a preliminary analysis of limited data. In spring of 2021, USAID asked MESCLA to test the hypothesis that Hurricanes Eta and Iota (Oct/Nov 2020) were independent causes of international migration. MESCLA used geocoded data from the Permanent Contingency Commission of Honduras indicating the severity of direct impacts from the hurricanes, matching it to the neighborhood/colony level as well as municipal level data. Migration was measured by returnee data from CENISS based on a questionnaire completed by migrants returned via land or air by U.S., Mexican, or other countries' immigration authorities and reports the number of Hondurans returned each month by municipality and neighborhood/colonia.

- Overall, results of the analysis do not show that hurricanes Eta and Iota caused additional international migration, as measured by returned migrants. Controlling for long-term migration trends, seasonal fluctuations, and constant unobserved characteristics of municipalities, some of

[13] Analysis is based on municipality-year panel regression with fixed effects for municipality and year, 2013-first half of 2019. This method holds constant municipal-level factors such as poverty level, existing migrant networks, or population as well as national, regional, or global time trends that uniformly affect all municipalities (e.g., economic or policy effects in the U.S. or Mexico; national-level political factors in Honduras; etc.).
[14] The average municipal size in Honduras is 29,000.
[15] Based on municipality-year panel regression with fixed effects for municipality and year, 2013-first half of 2019. Drought level is based on the FAO's ASI which shows the annual average percentage of arable land in each municipality that experienced agricultural stress during the maize growing season.

our statistical results suggest a negative relationship at municipal level, though it is unclear how this relationship should be interpreted.

- Bivariate analysis at the neighborhood/colonia level did not show any differences in rates of migration in villages or neighborhoods impacted more by the hurricanes compared to those that were not impacted. At the most basic level, this means that people from municipalities and neighborhoods/colonies that were directly affected by the hurricanes were no more likely to migrate and be returned to Honduras by U.S., Mexican, or other countries' immigration authorities than places that were not affected.
- This could be because displacement caused by the hurricanes was primarily internal, as is typical following extreme weather events (see Cattaneo, et al. 2019)[16].
- However, it could also be due to data limitations. There are several important limitations to measuring these effects using data on migrants returned by U.S., Mexican, or other migration authorities abroad.
    - First, there is an unknown lag period between departure from Honduras and possible return, making analysis focused on short term effects problematic.
    - Second, there are far fewer migrants returned that those who leave, which could bias the results if those from some municipalities affected by the hurricanes were less likely to have been removed by the U.S., Mexico, or others. This appears to be especially true in 2021, when returns from the U.S. have been relatively low compared to previous years. Relatedly, we know that those returned by U.S. authorities are not representative of all migrants, as very small shares of the returned are women or minors, compared to the shares apprehended.
- In contrast to this preliminary analysis, the 2021 NVSM Survey asked of those reporting an intention to migrate whether a series of factors were important to that decision. 46% included environmental factors (described as drought, storms, and natural disasters) as reasons for their migration plans.

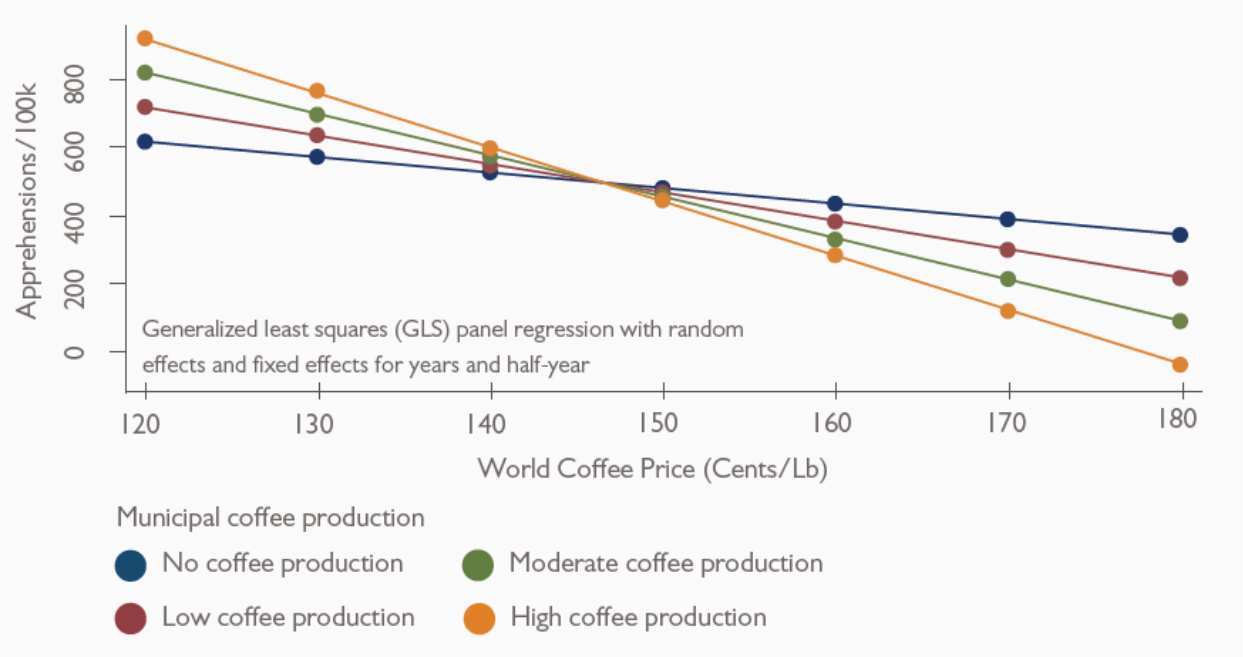
3.4.2.3 COFFEE

Coffee prices are negatively related to U.S. border apprehensions, i.e., apprehensions are lower when coffee prices are higher. But this relationship is weaker where per capita coffee production is lower and

[16] Cattaneo, Cristina, Michel Beine, et al. 2019. "Human Migration in the Era of Climate Change." Review of Environmental Economics and Policy, volume 13, issue 2, Summer 2019, pp. 189–206. doi: 10.1093/reep/rez008

stronger where per capita coffee production is higher (Migration Briefer 2021). If a municipality produces no coffee (blue line), a 20 cent drop in price from USD 1.60 to USD1.40 would result in 22% increase in the municipality's migration rate. If the municipality is a high coffee producer (orange line), the same drop would result in a 120% increase in the migration rate.

Figure 10: Coffee Price Drives Migration Most Where Coffee is More Important to the Local Economy



Source: DHS/CBP; The Honduran Coffee Institute (IHCAFE); U.S. coffee futures, Mild Arabica month−ending price 2013-2019. Analysis by MESCLA

3.5 VIOLENCE

3.5.1 THEORY

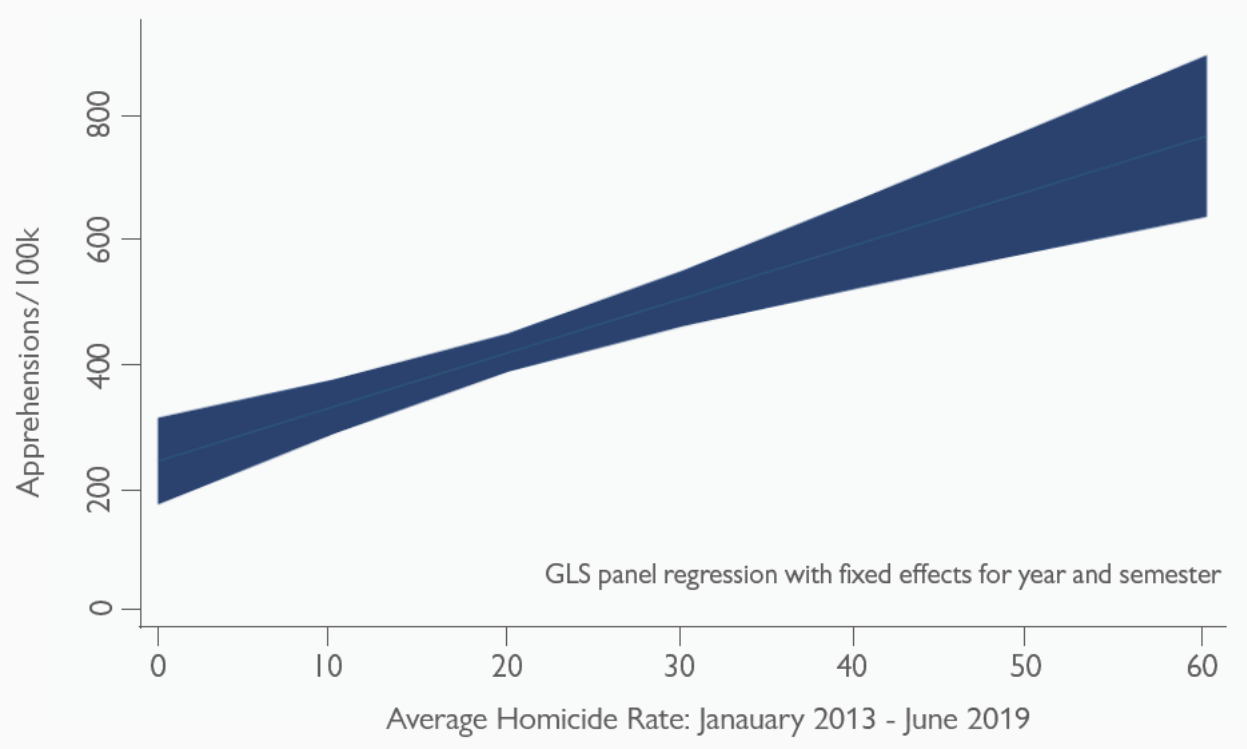
The flight or fight response to danger is well known and underlies thinking behind the relationship between violence and migration. Violence is thought to effect migration directly, through a reaction to immediate threats and indirectly by its impact on migrant networks and effect on local economic conditions.

3.5.2 FINDINGS

From 2010 -2015 there was a dramatic increase in unaccompanied minor migrants from the Northern Triangle arriving at the U.S. border. To better understand the causes of this wave of unaccompanied minor migrants, USAID commissioned Dr. Michael Clemens to conduct an analysis. He found that one additional homicide per year in the region, sustained over the whole 2011-2016 period—that is, a cumulative total of six additional homicides—caused a cumulative total of 3.7 additional unaccompanied child apprehensions in the United States. He also found that due to the diffusion of the migration experience and social networks, violence can cause waves of migration that snowball over time, continuing to rise even when violence levels do not. MESCLA, analyzed data on all Hondurans apprehended at the U.S. southwest border between 2013 and June 2019 and found that:

- Municipalities with higher homicides send more irregular migrants to the U.S. border, even when controlling for other municipal characteristics, like population and poverty levels. (Dr. Michael Danielson, MESCLA 2019 and 2020, see annex.)

Figure 11: Migration Rates Highest from Most Violent Municipalities



Source: DHS/CBP; SEPOL: Registro de fallecidos. Analysis by MESCLA.

- Research that analyzes the relationship between intent to migrate and crime victimization has shown a significant relationship, but not much variation among types of crime victimization as robbery/assault overwhelmingly are the most reported types of crime. (DO1 Victimization Survey 2019/2020, LAPOP, UNAH,[17] Corruption, Migration and Democracy Study 2020, NVSM 2021)
- In the 2019 and 2020 DO1 Victimization Surveys, the 2020 Empleando Futuros Performance Evaluation (youth 17-30), and in the 2021 NVSM Survey, violence is consistently the second most common reason reported for intending to migrate. Among returned migrants, the findings are somewhat different, with family motives being the second most cited reason and violence the third.
- Studies conducted by FHI 360 and LAPOP show that being a victim of crime and corruption are positively associated with intent to migrate, and interestingly, receiving remittances is predictive of being a victim of violence (LAPOP 2018, MESCLA DO1 Victimization surveys 2019/2020, among others).
- Perception of community security is tied to intention to migrate when there is also perception of a low or no availability of on-farm opportunities (RLVS 2020) Looking at three factors about the perception of insecurity (how unsafe a person feels), in urban areas, the DO1 Victimization 2019 survey shows that feeling unsafe in your community (at home, in neighborhood, walking home) and feeling unsafe on public transport is significantly associated with intent to migrate. The NVSM 2021 survey showed the feeling one's community very unsafe was significantly associated with intentions to migrate.
- Gender-based violence (GBV) may also be a significant driver of migration. Women cite violence as a motivation for migrating at higher levels than men. Specifically, women who are returned migrants cite violence as a motivation for migrating at nearly twice the rate of men. (6.1% of women returned by authorities indicated that they had migrated for this reason, as compared to 3.2% of men in the first semester of 2020.) Women involved in the migratory movement experience the dual bias of discrimination as women and as migrants. In such circumstances, young and adolescent girls and young women become vulnerable to abuse and exploitation (*Fondo Centroamericano de Mujer*, 2018)[18].

[17] *Universidad Nacional Autónoma de Honduras.*

[18] Fondo Centroamericano de Mujeres. (2018). *Realidad Migratoria Interregional de Niñas, Adolescentes y Mujeres Jóvenes.* Managua.

- In data from over 20,000 migrants served by REDODEM in 2019, Hondurans reported violence as the motivation for their migration in 25% of the cases. Women however reported violence as a motive in 41% of cases.

3.6 MIGRANT NETWORKS (HISTORY/REMITTANCES)

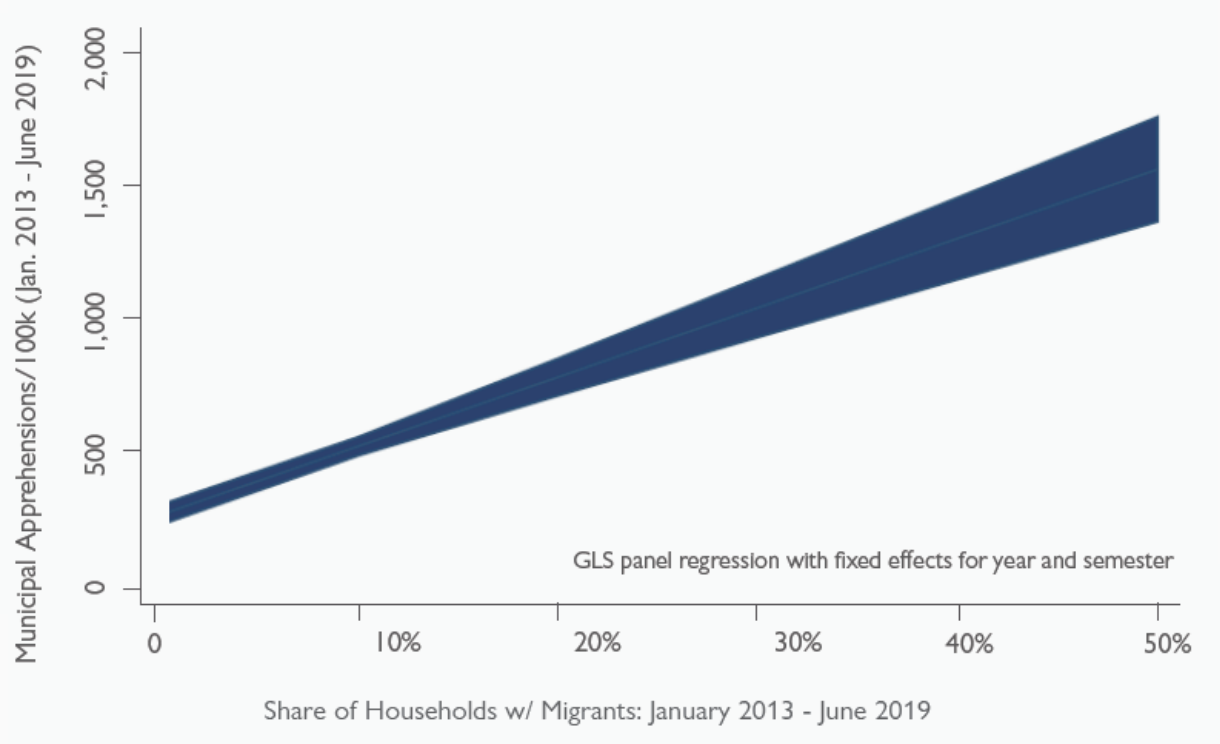
3.6.1 THEORY

Migration networks are thought to affect migration in several ways. Past migration by some family and/or community members may instill in others the desire to migrate and provide the means to do so for some, as well as information about how best to travel, and a destination where people they know live.

3.6.2 FINDINGS

- Among the factors assessed to explain variance in municipal migration rates, migrant networks, a composite measure that includes past migration history and remittance variables, was the most powerful predictive factor of municipal migration rates. This is perhaps easiest to see in the results of multivariate regression analysis showing that municipalities with larger shares of households with family members living abroad when asked in 2013 had higher subsequent apprehension rates at the U.S. border (see Figure 12).

Figure 12: Past Migration Drives Current Migration



Source: DHS/CBP, INE Census 2013. Analysis by MESCLA

- In the January 2021 Honduran Central Bank semi-annual household remittances survey, 96.4% of households affirmed that remittances were used for essential consumption or basic necessities – food, education, health and others. The remaining 3.6% of households highlighted the utilization of remittances for fixed capital investment, basically house repair/construction of their or other family member's houses. Qualitative findings from the FTF evaluation (NORC[19]/MESCLA 2019) support these findings.
- This suggests that remittances mostly are directed to poor families from relatives abroad, and in fact, the DO1 Victimization surveys done in 2019 and 2020 in high crime, poorer neighborhoods of the Distrito Central, SPS, La Ceiba, Tela and Choloma, show a much higher rate of households receiving remittances than the municipal average (DO1 Victimization 2020 and EPHPM[20] INE 2019).

[19] National Opinion Research Center.
[20] *Encuesta Permanente de Hogares de Propósitos Múltiples.*

3.7 EDUCATION

3.7.1 THEORY

Intuitively, one might theorize that more education, through its effect of job opportunities, might be associated with less intention to migrate. However, since development increases in both aspirations and capabilities to migrate, more education in Honduras might be expected to lead to more emigration.

3.7.2 FINDINGS

- According to *"Entendiendo las Causas de la Emigracion Indocumentado en Hogares de Bajo Ingreso en Honduras"* (*Banco Interamericano de Desarrollo* 2015), those with secondary education in Honduras are 10% less likely to say they would migrate without securing a visa than those with no education.
    - This finding is supported by Pew Research Center data from 2015, which finds that among U.S. immigrants over 25 years old, 51% have less than secondary school education (citation).
    - An additional indicator of the potential protective effect of education against migration comes from data from migrants returned to Honduras from Mexico and the U.S. by government authorities from January 2016 to June-2020: 54% of returned migrants over18 years old from the communities in the five urban municipalities previously targeted by USAID had only primary school education or less. For comparison, in the general population over 18 years old from those same municipalities, 35% of survey respondents (EPHPM 2018) report having a primary school education or less. However, the household survey respondent's average age was older than the returnees', so one would expect the overall education level to be lower as education levels have improved in the last ten years.
- In a 2019 study by FHI 360, individuals with complete secondary education or some higher education had lower intentions of migrating than their peers with no formal education or incomplete primary education. The probability of having intentions to migrate for a person with some university education was 9% and for a person with complete secondary education it was 12%, much lower than the 20% among those who have no formal education or some primary education.
- In the 2021 NVSM Survey, having some higher secondary education (grades 10-12) or university education was significantly associated with lower intentions to migrate, and this was also the case among those who indicated they would be willing to migrate without papers/visa.

- There is no doubt that education levels of citizens directly influence overall country development levels which affects migration trends,[21] as well as a household or individual's income/wealth level, which is related to irregular migration, in a sort of bell curve shape. The *Banco Interamericano de Desarrollo* study shows that those with secondary education or more, are less likely to be undocumented migrants. A myriad of other studies show that more education is associated with more income/wealth. More education also is related to less involvement in violence[22], including domestic violence[23]. Thus, education seems to have both direct and indirect effects on the propensity to migrate irregularly.
- A direct effect of migration on education, however, is the poor school performance of returned migrant children who made up approximately 7% of 8th grade students in 2017[24]. Girls and boys who are returned migrants have significantly poorer academic performance than their peers[25]. This may fuel a revolving door of poverty and poverty-driven migration.
- The correlation between the decrease in the number of students (2018 vs 2019) ages six through eleven and 12-17 enrolled in school in a municipality and the number of migrants of these ages from those municipalities apprehended at the U.S. southwest border, on average, is 0.84 for both age groups, suggesting that migration likely explains some of the reduction in school enrollment during that period.

3.8 Citizen Participation, Democracy, and Corruption

3.8.1 Theory

Social and political commitment to community and country can have an independent effect on citizen's likelihood of staying. The quality of the democratic system and its ability to fulfill basic governance responsibilities influence one's consideration of emigration.

- Migration scholarship, inspired by the work of Albert Hirschman, considers the choice people have when faced with unfavorable conditions where they live: they can 1) exit (i.e., emigrate), 2) exercise voice (i.e., seek to change those unfavorable conditions); or 3) remain loyal (i.e., neither exit nor seek change using voice).

[21] Hahn de Hass 2010, Michael Clemens 2017.
[22] López, H. & Serrano-Berthet, R. (2011) *Crimen y Violencia en Centroamérica: Un Desafío para el Desarrollo.* Banco Mundial. Medina, Edwin (2014) *Informe Final del Estudio de Factores de Riesgo y Protección Asociados Con la Afiliación a Maras y El Comportamiento Criminal Entre los Jóvenes Encarcelados y No-Encarcelados en Honduras*. USAID.
[23] GBV Studying DO2, 2018. The DO2 GBV study demonstrated that the more educated the women and their partners, the less at risk she is to be involved in any type of Intimate Partner Violence (IPV) over the prior 12 months and in her lifetime.
[24] Factores Asociados 2017.
[25] *Secretaría de Educación,* or SEDSPS. UC *Factores asociados al rendimiento académico* – Honduras, 2017, pg. 11.

- An important development goal should thus be to ensure that peoples' increased capabilities (via development) are channeled into home-country and community engagement for positive change, rather than to facilitate their emigration, as much migration theory predicts[26].

3.8.2 FINDINGS

3.8.2.1 CIVIC ENGAGEMENT

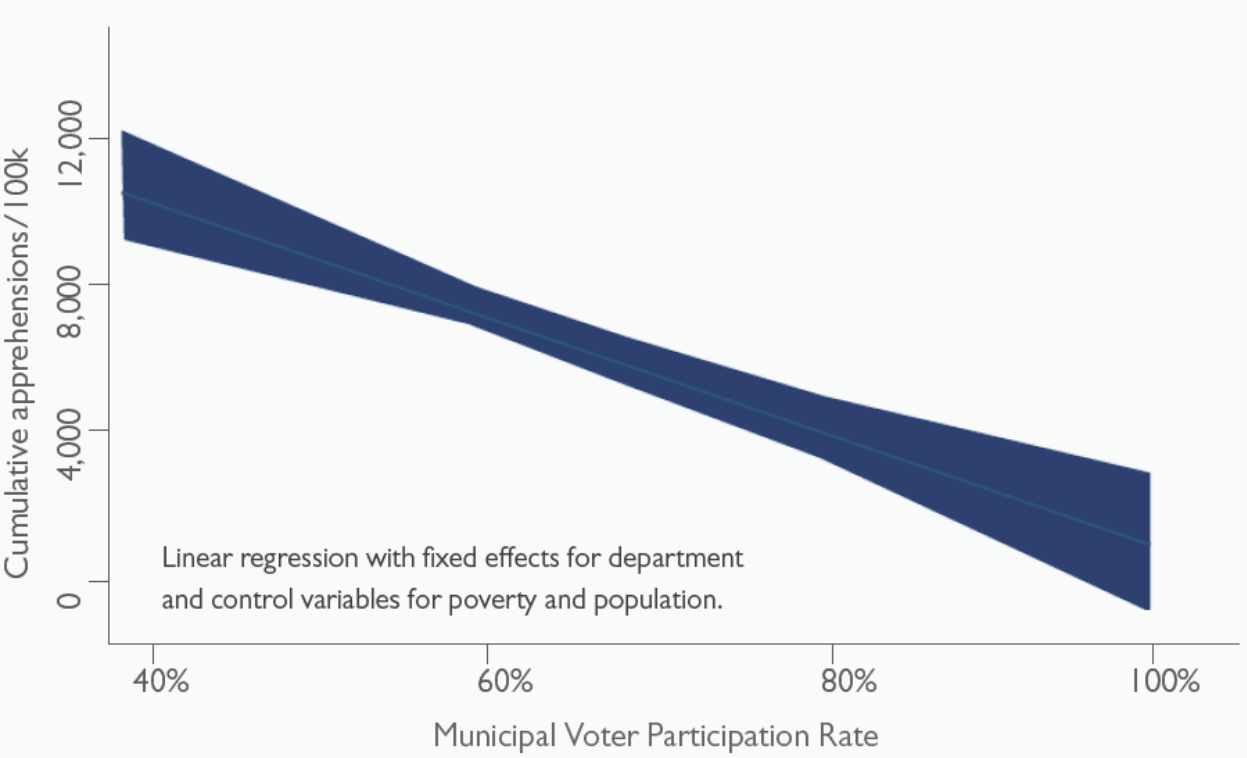
MESCLA measured civic engagement using voting data from the 2013 and 2017 presidential elections, looking at the average participation rate across both elections and the percentage point change from 2013 to 2017.

Key findings are:

- More participatory municipalities emigrated less. This relationship holds across different model specifications and over different periods of time.
    - In one model specification we find that a one percentage point increase in the average participation rate in the 2013-2017 elections predicts a decrease of almost 180 migrants per 10,000 population over the 2013 to mi-2019 period (see Figure 13).

[26] See literature review on civic engagement at: https://pdf.usaid.gov/pdf_docs/PA00XJD5.pdf.

Figure 13: Relationship between Civic Engagement and Migration: More Civic Engagement Leads to Less Migration



Source: DHS/CBP; TSE voter file, 2013 and 2017. Analysis by MESCLA

- Municipalities that became more participatory from 2013 to 2017 were also less likely to send migrants.
    - Specifically, a municipality where the change in the participation rate was one point higher is predicted to have 89 fewer U.S. border apprehensions per 100,000 population from 2013 through June .2019.

3.8.1.2 Corruption and Democracy

- Corruption victimization in LAPOP 2018, FHI 360 2019, and DO1 Victimization 2020 all find that being a victim of corruption is related to intent to migrate. Furthermore, perceptions of an increase in corruption (FHI360) increased the likelihood of intending to migrate.
- Hiskey and Montalvo (2014) analyzed survey data across 22 Latin American countries and found strong and consistent evidence that both the quality of a democratic system and its

ability to fulfill basic governance responsibilities influence the degree to which an individual considers emigration as a viable life strategy.

- MESCLA took an in-depth look at the effect of the quality of the democracy and corruption on Hondurans' intentions to migrate, using FHI 360 and LAPOP survey data and found that corruption victimization, crime victimization, and dissatisfaction with democracy have a strong, significant effect on the probability of an individual having intentions to migrate. The probability of a victim of corruption having intentions to migrate is higher than those who are not victims of corruption (FHI 360, LAPOP). Being a victim of both corruption and crime increases intentions to migrate; however, the effect is more dramatic for victims of corruption and crime who are also dissatisfied with democracy, with intentions to migrate at 57% for the FHI 360 sample and 67% for the LAPOP sample. This is significantly higher than that of their non-victimized peers who are not dissatisfied with democracy, among whom only 18% and 40%, respectively, have intentions to migrate. These are robust findings and support USAID/Honduras's theory of change that greater societal capacity to influence government decisions and a greater government capacity to address basic security and corruption challenges reduce intentions to migrate (refer to links to the USAID Development Experience Clearinghouse (DEC) briefer and paper, in Annex 1).

Table 3: Intentions to Migrate (%) by Experience of Victimization (or not) and Dissatisfaction with Democracy

Experience of Victimization / Dissatisfaction with Democracy	Database	
	FHI 360	LAPOP
Non-Victim of either corruption or crime and satisfied with democracy	18%	40%
Victim of Corruption	29%	49%
Victim Crime	32%	49%
Dissatisfied with Democracy	25%	50%
Victim of Corruption + Crime	47%	58%
Victim of Corruption + Dissatisfied with democracy	38%	59%
Victim of Crime + Dissatisfied with Democracy	42%	59%
Victim of Corruption + Crime + Dissatisfied with Democracy	57%	67%

Source: Logistic regression model estimates, with all other variables held constant

3.9 COMMUNITY ATTACHMENT

3.9.1 THEORY

Strong social networks, social capital, and community institutions help keep people from moving for several different reasons.

- "Territorially restricted" capital is lost when people move and thus is a factor that retains people despite economic incentives to migrate given wage differentials.
- Emigration is less likely where people have more local ties to family and friends.
- Community institutions and structures—including churches, local businesses, public meeting spaces, and voluntary associations—make emigration less likely.

Normally these factors are looked at on the individual level and describe factors that lead a person to choose to stay rather than migrate, i.e., a determinant of why some people are voluntarily immobile. The approach used in our analysis is different and aimed to identify variables at the municipal level of aggregation that are expected to cause individuals living in those places to be more attached to their communities and, as a result, less likely to emigrate, all else being equal.

3.9.2 FINDINGS (MUNICIPAL LEVEL)

Hypothesizing that community attachment operates independently of other drivers of migration, MESCLA (Dr. Mike Danielson) undertook a quantitative, empirical analysis of six groups of municipal-level factors that the literature associates with community attachment. These groups are: 1) civic engagement; 2) social infrastructure; 3) home ownership; 4) land use patterns; 5) community roots; 6) strength of cultural ties.

Several of these groups of variables—together and in some cases in combination—have meaningful and empirically identifiable relationships to each other, and most importantly, to municipal migration rates as measured by U.S. border apprehensions. The most salient findings are as follows[27]:

3.9.2.1 CIVIC ENGAGEMENT

MESCLA found that:

- More participatory municipalities emigrated less. This relationship holds across different model specifications and over different periods of time.

[27] See the full report at: https://pdf.usaid.gov/pdf_docs/PA00XJD2.pdf.

- Municipalities that became more participatory from 2013 to 2017 were also less likely to send migrants.

3.9.2.2 SOCIAL INFRASTRUCTURE

MESCLA analyzed six individual indicators of municipal level social infrastructure, and a "social infrastructure" index combining all six variables. These six indicators are the number of schools as a percentage of youth population in a municipality, the health deficit per 100,000 population[28], the number of health centers (per 100k), the number of cemeteries (per 100k), the number of churches (per 100k), and the number of soccer fields (per 100k). Key findings include:

- Consistent with expectations derived from the community attachment literature as applied here, the analysis finds that emigration was higher in municipalities with a greater healthcare infrastructure deficit. Specifically, we find that a one standard deviation increase in the health deficit per 100k (3.9) is associated with 615 more migrants apprehended at the U.S. border from 2013-2017.
- Contrary to expectations, the "social infrastructure" index variable is *positively* related to the U.S. border apprehension rate. Specifically, we find that a one standard deviation increase in social infrastructure (0.83) is associated with more than 400 additional migrants per 100,000 population from 2013 to 2017. In the 2018-June period, one standard deviation increase in social infrastructure predicted almost 500 additional migrants per 100,000 population.

3.9.2.3 HOME OWNERSHIP

One indicator that is expected to increase attachment to community is the rate of home ownership, as people who own their home are more likely to be rooted to their community and less likely to emigrate, all things being equal.

- The analysis shows that municipalities with higher home ownership rates sent fewer migrants.
    - Specifically, a municipality with a one percent higher home ownership rate is predicted to have sent 110 fewer migrants per 100,000 population from 2013-June.2019.

[28] The health deficit refers to how many health facilities are needed at the municipal level, a function of the overall municipal population and distance to health facilities. (see http://www.sinit.hn/)

3.9.2.4 LAND USE

The MESCLA community attachment study found no significant land use related findings due to limited and, in some cases, no available data. However, the 2020 RLVS Study in five rural municipalities found that owning at least one hectare of land was a variable that explained reduced migration intentions.

3.9.2.5 COMMUNITY ROOTS

It is expected that people who have already migrated, internally or internationally, are less rooted and thus more likely to emigrate.

- Municipalities that had higher percentages of their populations already living abroad in 2013 were considerably more likely to have their members apprehended at the U.S. border between 2013 and June 2019.

3.9.2.6 STRENGTH OF CULTURAL TIES

Finally, the analysis tests the extent to which places with larger shares of indigenous and Garifuna communities, controlling for other factors, sent fewer migrants to the U.S., possibly due to the presence of deeper ties to place and community.

- Municipalities where greater percentages identified as being members of indigenous communities were less likely to have members apprehended at the U.S. border.

3.9.3 MEASURING INDIVIDUAL-LEVEL COMMUNITY ATTACHMENT

Based on this research, MESCLA undertook a review of different rootedness-migration risk indices and tools and discussed pros and cons of the use of these tools for targeting, monitoring and evaluation for USAID/Honduras. This included the development of a compendium of recommended questions proven to measure attachment, intent to stay and intent to migrate that have been validated in Latin America.

To test these scales in the Honduran context, MESCLA decided to include a component of a set of community attachment metrics, known as a "sentiment scale" that measure an individual's community attachment. The sentiment scale measures through agreement or disagreement with the following four statements, which have been shown in other contexts to be significantly associated with more/less intent to stay (Jennings, Krannich, 2013)[29]:

[29] Jennings, Brian and Krannich, Richard, (2013) "A Multidimensional Exploration of the Foundations of Community Attachment among Seasonal and Year-Round Residents*, *Rural Sociology* 78(4), 2013, pp. 498–527 DOI: 10.1111/ruso.12019

1. "I am fully accepted as a member of this community."
2. "If I was in trouble, most people in this community would go out of their way to help me."
3. "Most of the people in this community can be trusted."
4. "I feel this community is a real home to me."

Statement four, or feeling that one's community was one's true home, decreased the likelihood of intending to migrate by 35.3% when holding other factors constant. Other questions were not significantly associated with intent to stay.

3.10 YOUTH

In multiple studies in Honduras, the single most predictive factor of intent to migrate is being under 30. The average age of migrants encountered at the U.S. southwest border between FY2016 and FY2020 is 21 years, the modal age range is 16-17 years old, and the median age is 21. Youth aged 13-29 made up 67% of migrants in the 2016-2020 period.

The NVSM 2021 found that youth aged 18-30 reported a higher rate of intent to migrate than the general population (63% vs 55%) and 83% of those intending to migrate reported a willingness to do so without documentation/visa compared to 78% in the general population. The NVSM Study also looked at how youth intentions to migrate differed from that of the general population. While many factors that predict migration were the same, for youth, having some higher education was predictive of lower likelihood of intending to migrate, whereas secondary education was enough to reduce the likelihood of migration intentions in the general population.

4 CONCLUSIONS AND CONSIDERATIONS

The USAID/Honduras CDCS 2020-2025 goal is ***"A more prosperous, democratic, and secure Honduras where citizens, especially youth, are inspired to stay and invest in their future."*** The Mission aims to contribute to this goal and reduce irregular migration by helping improve socio-economic opportunities, enhance democratic governance and service delivery in a way that explicitly address the corruption challenges, and improve key elements of the justice and security systems to reduce impunity and ensure a more equitable application of the law and human rights protections. Central to the CDCS is a deliberate focus on youth in each of its development objectives.

The findings presented in this report validate much of USAID's current approach to addressing the root causes of migration and offer important evidence to help focus interventions on migration drivers and locations in Honduras, including:

- The recognition that many drivers of migration are international in nature and not affected by the policies and programs of USAID/Honduras. Likewise past events that affect migration, like one's family history of migration are not changeable. Furthermore, economic factors affect migration in complex ways that both deflect and contribute to migration.
- It is important to ensure a geographic focus on areas of high migration and the special targeting of youth is realized in practice. Past family migration and the conditions that contribute to migration are present in those geographic areas, and many of the factors that influence the decision to stay or go at municipal level, like rates of home or land ownership and employment, may be more challenging for youth.
- Finally, it is important for USAID to continue to learn about community attachment as well as intentions to migrate, with a view toward motivating more people to aspire to stay despite having the means to migrate.

ANNEX 1: RELATED BRIEFERS AND DOCUMENTS

LINKS TO DEC

- Migration Briefer 2021- (pending 508 compliance)
- Corruption, Democracy and Migration Briefer – (pending 508 compliance for upload)
- Border Apprehensions and Community Attachment Study
- Civic Engagement and Migration Literature Review
- DO1 Analysis of Victimization, Perception of Security, and Corruption, 2019
- DO1 Analysis of Victimization, Perception of Security, and Corruption, 2020
- DO1 Effectiveness Evaluation
- National Victimization Security and Migration Survey (NVSM), 2021 – (pending completion and 508 compliance for upload)

ADDITIONAL WORKS CITED

- Rural Livelihoods and Violence Study (2020) - Dr. Rebecca J. Williams and Dr. Larry Vaughan, the University of Florida, Commissioned by USAID/Honduras
- Typology of survey questions on aspirations, intentions, preparation, consideration, willingness, necessity and likelihood of migration - Jørgen Carling & Kerilyn Schewel, 2018
- Aspiration/capability analytical framework- Kerilyn Schewel, 2019
- LAPOP AmericasBarometer, 2018-2019 database
- Evaluación sobre el conocimiento y comprensión pública de la relación entre la corrupción y la migración en Honduras - FHI360, 2018
- Simple Poverty Scorecard® Poverty-Assessment Tool Honduras - Schreiner, Mark, 2010.
- Bases de Datos Hogares - INE, 2013 - 2019
- Base de Datos "Índices de Sequía." - Comité Regional de Recursos Hidráulicos, 2012-2020.
- Censo de Población y Vivienda - INE. 2013
- Encuestas sobre Migración en la Frontera de México (EMIF), CBP y Centro Nacional de Información del Sector Social (CENISS), 2013-2020
- U.S. CBP. U.S. Southwest Land Border Encounters, FY2021 (October-May).
- The Emigration Life Cycle: How Development Shapes Emigration from Poor Countries - Clemens, Michael Andrew, IZA (Institute for the Study of Labor), 2020.

- Normalized Difference Vegetation Index (NDVI) - Food and Agricultural Organization's (FAO), 2012-2020
- Human Migration in the Era of Climate Change. - Cattaneo, Cristina, Michel Beine, et al., 2019.
- Realidad Migratoria Interregional de Niñas, Adolescentes y Mujeres Jóvenes. - Fondo Centroamericano de Mujeres, 2018
- Violence, Development, and Migration Waves: Evidence from Central American Child Migrant Apprehensions – Clemens, 2017
- Migration and Development: A Theoretical Perspective - Hahn de Hass, 2010
- Crimen y Violencia en Centroamérica: Un Desafío para el Desarrollo. - López, H. & Serrano-Berthet, R., 2011
- Factores asociados al rendimiento académico - Secretaría de Educación Honduras, 2017
- A Multidimensional Exploration of the Foundations of Community Attachment among Seasonal and Year-Round Residents - Jennings, Brian and Krannich, Richard, 2013

ANNEX 2: DECOMPOSITION ANALYSIS

VIOLENCE, ECONOMIC FACTORS, AND MIGRATION NETWORKS AS DETERMINANTS OF U.S. BORDER APPREHENSIONS OF HONDURANS: A DECOMPOSITION ANALYSIS

INTRODUCTION

This brief research note seeks to compare the relative importance of violence, economic factors, and migrant network effects in explaining the cumulative rate of irregular migration from Honduran municipalities to the U.S. Following Clemens,1 the analysis decomposes the effect of these three sets of factors in Honduras as a whole and spatially, municipality by municipality. The analysis draws on an original dataset containing anonymized records of Hondurans apprehended at the U.S. border from January 2013 through June 2019 and match each apprehension to the residence municipality. This is then combined with municipal and department-level variables measuring security, economic factors, and access to migrant networks.

The analysis finds that migration network-related factors consistently account for the largest share of variance in the cumulative apprehension rate of Honduran municipalities. Economic factors and violence explained similar shares of variance over the whole period. However, economic factors were notably more important from 2013 through 2017 than they were in 2018 and the first half of 2019. Finally, though relatively marginal overall, drought conditions became more important explanatory factors in 2018 and 2019, perhaps accounting for the suggesting the possibility of shifting patterns of Honduran migration from urban to rural areas. Whereas violence and economic factors were statistically significant and helped to explain important shares of variance and are shown to be relevant in municipalities across the country, the central role of migration networks, especially historical municipal migration rates, were significant in more than three-fourths of municipalities, either alone or in combination with other factors.

This research note begins with a discussion of how the dependent variable and different groups in independent variables are measured. The next section presents results from the multivariate regression analyses conducted, the variance decomposition analysis, and the spatial decomposition analysis. The final section discusses the results and concludes.

ACCOUNTING FOR VARIATION IN IRREGULAR MIGRATION RATES FROM HONDURAS TO THE U.S.

The outcome variable (DV) used here is the cumulative irregular migration rate—as measured by U.S. border apprehensions—from 2013 through the first half (h1) of 2019. We arrive at this rate by matching anonymized individual-level data collected by DHA/CBP from the nearly 550,000 apprehensions over this period to the residence municipality in Hondurans. The variable used in the analysis is calculated by taking the sum of U.S. border apprehensions for each municipality and dividing by the average population over the period studied. To normalize the distribution, the analysis adds one to the cumulative migration rate and takes the natural logarithm.2 In addition to estimating models using the cumulative municipal apprehension rate for the whole period for which there are data, models are also estimated for the period of 2013-2017 and 2018 through h12019.

VIOLENCE

The expectation is that emigration rates will be higher from municipalities with higher levels of violence and those that become more violent. The analysis includes two indicators of violence, both based on the number of homicides in each municipality as reported by the Secretariat of the Police (SEPOL). The rate is calculated per 100k municipal population for each year. The first variable is the average annual change in the homicide rate for the period of the analysis and the second variable is the average homicide rate over the whole period.

ECONOMIC FACTORS

We use five variables to account for different factors related to economic wellbeing; two are based on income, two are based on unemployment, and one is a measure of poverty. The naïve hypothesis is emigration rates should be higher where poverty and unemployment are higher or increasing and where incomes are lower or decreasing. However, most migration research suggests a more complicated relationship, with the poorest lacking both aspirations and capability to migrate, while those higher or increasing incomes may still hope for greater opportunity while having a greater capacity to attempt to realize such aspirations through migration.

Poverty is measured at the municipal level by applying the Poverty Probability Index (PPI) to 2013 population census data.[30] Specifically, the PPI is an estimate of the probability that a household has income

[30] The municipal PPI was calculated using data from the XVII Censo de Población y Vivienda of INE and applying the PPI methodology for Honduras; see Schreiner, Mark. "Simple Poverty Scorecard® Poverty-Assessment Tool Honduras." 5 May 2010, SimplePovertyScorecard.com.

below $2.25/day (PPP); and the variable used in this analysis is a measure of the percentage of municipal households below that level.

The income and unemployment data come from Honduras' annual Permanent Survey of Households for Multiple Purposes (*Encuesta Permanente de Hogares de Propositos Multiples*, or EPHPM) and are aggregated at the department level by the author.[31] As such, all municipalities from a given department will have the same value for these variables. This is an empirical necessity since none of these variables are available at the municipal level of detail or in an annual time-series as is available in the EPHPM. However, measuring these variables at the department level makes sense theoretically, as the relevant labor market and economy for determining realistic employment and income generating activities is likely larger than the municipality, unlike violence and poverty, which can vary a great deal within departments (and even within municipalities).

The analysis includes a variable measuring the annual average real per-capita growth of income from all sources reported by respondents to the EPHPM. It also includes a variable for the average per-capita income level of each department over this period. Unemployment change is measured by the period average of annual changes to the unemployment rate. Finally, the analysis includes a variable for the average unemployment rate over the period of study.

DROUGHT

Most of the analyses group drought variables with other economic variables, but where possible we also measure these effects separately. Drought is defined in terms of the departure in the negative direction from median Normalized Difference Vegetation Index (NDVI) for each location. This index is created by the FAO and reports vegetation health based on satellite imaging for each period of 10 days. The municipal-level variables measure the share of municipal territory that experienced very high negative anomalies in the NDVI.[32] The variables used in the analysis are two different averages of these shares. The first is the average drought level over all dekadal (10-day) periods for the entire period studied. The second indicator in this analysis is the dekadal average during the growing season of June through August over the whole period studied. A third variable included in these analyses is an interaction term; the product the all-months average drought and the growing season average drought.

[31] INE. EPHPM, Bases de Datos Hogares. INE, 2013 - 2017. Downloaded from https://www.ine.gob.hn/V3/ephpm/.
[32] CRRH (Comité Regional de Recursos Hidráulicos). "Índices de Sequía." Accessed on September 3, 2020 at: http://asis.infoagro.hn/.

MIGRANT NETWORK FACTORS

We use three variables to account for the extent to which individuals in each department and municipality are linked to international migration, and thus likely have family reunification incentives to attempt migration and greater ability to tap into social networks to facilitate migration.

First, we include a variable for the percentage of families in each municipality that had at least one family member living abroad, when asked in 2013.[33] The second and third variables in this group are generated from the EPHPM data and are thus aggregated at the departmental level.[34] First, we measure the average annual change is remittances sent to families over the period of study. Second, we measure the average annual change in remittance dependency: defined as the share of total income that comes from remittances.

RESULTS

Table 4 presents the results of three pooled ordinary least squares (OLS) regression models. Model 1 focuses only on the violence and economic variables. Model 2 adds in the migrant network variables. Model 3 estimated the impact of interactions between violence and other variables. In all three models the average homicide rate is positively associated with the cumulative enforcement rate ($p<0.01$). The average change in the homicide rate, however, has zero effect on migration. None of the interactions with homicide change were statistically significant in Model 3.

Moving on to the economic variables, average departmental income growth was negatively associated with migration flow in all models. Average real per-capita income was not related to migration when controlling for other factors across all three models. Average change in the unemployment rate was positively associated with migration flow across all three models, but the average unemployment rate across all years had no relationship to apprehensions. In all three models, poverty was negatively associated with the dependent variable, consistent with the hypothesis that the poorest lack that capability and aspiration to emigrate. The drought variables were not associated with migration flow once the migrant network variables were added to the models.

[33] INE. XVII Censo de Población y Vivienda, 2013. Variable calculated by the author using the REDATAM statistical processor at: http://170.238.108.227/binhnd/RpWebEngine.exe/Portal?BASE=CPVHND2013NAC&lang=ESP
[34] INE. EPHPM, Bases de Datos Hogares. INE, 2013 - 2017. Downloaded from https://www.ine.gob.hn/V3/ephpm/.

Table 4: Cumulative U.S. Border Apprehensions, June 2013 – June 2019. Pooled OLS in Cross Section

DV: Border Apprehensions (LN)	(1)	(2)	(3)
Avg. 1yr change in homicide rt.: Δh	-0.0315	-0.0299	-0.714
	(0.0220)	(0.0187)	(1.529)
Avg. homicides/100K	0.0225***	0.0201***	0.0209***
	(0.00485)	(0.00415)	(0.00431)
Avg. 1-yr. real, per cap. income growth[35]: $\Delta \gamma$	-1.72e-05*	-3.61e-05***	-3.47e-05***
	(9.81e-06)	(9.97e-06)	(1.17e-05)
Avg. real income per cap.[I]: $\ln \gamma$	-0.0461	0.228	0.233
	(0.384)	(0.442)	(0.505)
Avg. 1-yr. change in unemp. [I]: Δu	0.533***	0.379***	0.430**
	(0.142)	(0.143)	(0.167)
Avg. Unemployment Rate[I]	-0.00829	0.0606	0.0682
	(0.0580)	(0.0598)	(0.0608)
Probability Poor, 2013: p	-1.828**	-1.236**	-1.051*
	(0.747)	(0.597)	(0.625)
Avg. Growing Season Drought: *k*	-25.45***	-9.557	-8.881
	(7.557)	(6.583)	(6.899)
Avg. Drought: *d*	-0.109	4.206	2.863
	(6.963)	(5.866)	(6.298)
k x *d*	463.4***	175.5	180.2
	(140.9)	(117.1)	(117.6)
Migrant Families Per-100K, 2013: *m*		7.66e-05***	7.78e-05***
		(6.98e-06)	(8.46e-06)
Avg. 1-yr. change in remittance dependency[I]		0.273***	0.279***
		(0.0913)	(0.0940)
Avg. 1-yr real remit. Growth[I]		-0.0448*	-0.0416*
		(0.0231)	(0.0239)
Δh x $\Delta \gamma$			1.25e-06
			(3.36e-06)
Δh x $\ln \gamma$			0.0502

[35] These variables calculated at the department level over the years 2013 through 2018 using the annual EPHPM.

DV: Border Apprehensions (LN)	(1)	(2)	(3)
			(0.0561)
Δ*h* x Δ u			0.191
			(0.300)
Δ*h* x Δ p			0.0474
			(0.128)
Δ*h* x *m*			1.35e-06
			(3.94e-06)
Population (LN)	0.120**	0.157***	0.152***
	(0.0490)	(0.0439)	(0.0449)
Constant	8.106*	3.641	3.473
	(4.594)	(5.282)	(5.992)
Observations	288	288	288
R-squared	0.325	0.574	0.578
Adj. R-squared	0.298	0.553	0.548

* Significant at 90% confidence; ** Significant at 95% confidence; *** Significant at 99% confidence

The migrant network variables have a powerful explanatory effect on cumulative migration. After adding the three migration variables the share of the variance explained increased substantially (from R-squared of 0.298 to 0.553). As previously highlighted, adding these variables reduces the size of the coefficients of the drought variables, which lose statistical significance.

Specifically, the share of families with a migrant abroad in 2013 was positively related to cumulative apprehensions from h12013-h12019, showing how past migration, due to a range of possible mechanisms, generates subsequent. An indicator of the economic importance of migration—but also of the change in the strength of transnational family connections—is the share of total income made up by remittances, referred to here as remittance dependency. The average annual change in remittance dependency at the departmental level was positively associated with cumulative municipal apprehension rates, suggesting that where dependency grew, migration rates were higher, though the direction of causality may be ambiguous.

Table 5 focuses on the variables used in Model 2. Column 1 is the same as the middle column in Table 4. Columns 2 and 3, as labeled, focus on sub-groups of years to allow us to estimate the relationships in the period of very high growth in apprehensions in 2018 and the first half of 2019. Coefficients are in bold when there is a difference from other year breakdowns.

One result that holds across the two time periods (and the whole period from 2013-2019) is that homicide rate is significantly and positively related to apprehension rate. The most violent municipalities continue to be the most likely to send migrants to the U.S. border.

Departmental real per-capita income growth was negatively associated with the cumulative migration rate across all three time periods. While over the whole period, there was no observed relationship between average income and migration, from 2013-2017, places that were on average wealthier (not those that had higher growth) sent fewer migrants per capita. As state above, over the whole period apprehension rate was higher when unemployment had increased more. As Table 5 shows, this result was driven by the relationship from 2013 through 2017, as the relationship is negative and statistically significant for the 2018-19 period. Similarly, while average unemployment was not related to the apprehension rate over the whole period, there was a positive relationship from 2013-2017, but the relationship turns negative from 2018-2019. The municipal poverty rate in 2013 was negatively associated with apprehension rate over all year-breakdowns.

All other relationships are the same across the two year-breakdowns as across the full period, except for the effect of the drought variables. For the 2018-19 period, the drought variables were significantly related to migration. The way to interpret the negative and statistically significant coefficient for "growing season drought" is that, when "average drought" is 0, places where growing season drought was higher saw higher cumulative apprehension rates. In contrast, when the growing season month drought was 0, the average drought level was associated with higher apprehension rates. Likely the most informative estimate of these is the interaction term, which is the product of the two drought variables. The way to interpret this variable is that when both drought variables are high, apprehension rates were higher, and vice versa.

Table 5: Cumulative U.S. Border Apprehensions by Year. Pooled OLS in Cross Section

DV: Border Apprehensions (LN)	2013-19	2013-17	2018-19
Avg. 1yr change in homicide rt.: Δh	-0.0299	-0.0179	-0.00791
	(0.0187)	(0.0119)	(0.00812)
Avg. homicides/100K	0.0201***	0.0148***	0.0175***
	(0.00415)	(0.00288)	(0.00488)

DV: Border Apprehensions (LN)	2013-19	2013-17	2018-19
Avg. 1-yr. real, per cap. income growth[36]: Δ γ	-3.61e-05***	-1.81e-05***	7.06e-06*
	(9.97e-06)	(4.54e-06)	(3.76e-06)
Avg. real income per cap.[1]: ln γ	0.228	**-0.841*** **	-0.0594
	(0.442)	(0.253)	(0.372)
Avg. 1-yr. change in unemp.[2]: Δu	0.379***	0.181***	**-0.335** **
	(0.143)	(0.0543)	(0.161)
Avg. Unemployment Rate[2]	0.0606	0.157***	**-0.171*** **
	(0.0598)	(0.0335)	(0.0446)
Probability Poor, 2013: p	-1.236**	-2.448***	-1.344**
	(0.597)	(0.639)	(0.651)
Avg. Growing Season Drought: *k*	-9.557	5.271	**-12.18*** **
	(6.583)	(6.820)	(4.184)
Avg. Drought: *d*	4.206	-1.042	**12.78*** **
	(5.866)	(3.989)	(4.244)
k x *d*	175.5	-7.127	**109.3***
	(117.1)	(125.7)	(65.02)
Migrant Families Per-100K, 2013: *m*	7.66e-05***	8.30e-05***	7.13e-05***
	(6.98e-06)	(6.47e-06)	(8.30e-06)
Avg. 1-yr. change in remittance dependency[2]	0.273***	-0.364***	0.135***
	(0.0913)	(0.0564)	(0.0275)
Avg. 1-yr real remit. Growth[2]	-0.0448*	0.692***	-0.0805***
	(0.0231)	(0.122)	(0.0103)
Population (LN)	0.157***	0.142***	0.143***
	(0.0439)	(0.0395)	(0.0552)
Constant	3.641	15.45***	7.496*
	(5.282)	(2.926)	(4.365)
Observations	288	288	288
R-squared	0.574	0.615	0.493
Adj. R-squared	0.553	0.595	0.467

Note: Coefficients in **bold** indicate a difference from other year breakdowns. Robust Standard errors in parentheses.

* Significant at 90% confidence; ** Significant at 95% confidence; *** Significant at 99% confidence

[36] These variables calculated at the department level using the annual EPHPM. For 2013-2017 model, variables are computed using 2013-2016 data; for 2018-2019 model, variables are computed using 2017-2018 data.

Variance Decomposition Analysis

To assess the comparative importance of violence, economic, and migrant network factors in explaining the cumulative apprehension rate, the analysis calculates the share of explained variance (R-squared) accounted for by each group of variables in the model. Focusing on the models presented in Table 5, with each of the three breakdowns by years. The R-squared decomposition is based on a postestimation of the Shapley value of five groups of regressors: 1) violence factors, 2) economic factors, 3) drought factors, 4) migrant network factors, and 4) the population control variable. Table 6 reports these results, including a row for the percentage of the variance not explained by the models.

Table 6: Percent of Variance Explained by Different Factors

Factor	2013-19	2013-17	2018-19
Population	2.7%	3.3%	2.2%
Economic	11.6%	14.4%	7.0%
Drought	3.5%	1.8%	5.4%
Violence	10.7%	7.8%	6.4%
Migration Networks	28.9%	34.1%	28.4%
Unexplained	42.6%	38.5%	50.7%
Total R^2	57.4%	61.5%	49.3%

As estimated here, it is evident that migrant network factors are dominant, accounting for more than half (50.3%) of explained variance and 28.9% of total variance across all years. Violence and economic factors explain 10.7% and 11.6%, respectively, and drought alone explains 3.5%. Finally, 2.7% was explained by municipal population size. It is also noteworthy to see that, overall, the model explains more variation from 2013 to 2017 and is less powerful in 2018-19.

Spatial Decomposition

Another way to analyze the relative importance of different factors is through a spatial decomposition analysis. Here, rather than estimating the importance of each group of explanatory factors across all municipalities in the analysis, the analysis assesses the relative importance of each group of factors for each municipality. The method used here, adapted from that used by Clemens (2017, pp. 22-3), while not rigorously developed, makes it possible to visualize and map how different groups of factors are more important in some municipalities than in others.

Based on these three sets of factors and combinations of them, there are seven possible categories of municipalities:

1) those where the effect of *violence* on enforcement rates is ***much*** higher than *economic* or *migrant network* effects;
2) those where *economic* factors (including drought here) are ***much*** more important than *violence* or *migrant network* effects;
3) those where *migrant network* effects are ***much*** more important than *violence* or *economic* effects;
4) those where *violence* and *economic* factors are similar, but both are ***much*** more important than *network* effects;
5) those where *violence* and *network* effects are similar, but both are ***much*** more important than *economic* effects;
6) those where *economic* and *network* effects are similar, but both are ***much*** more important than *violence* effects; and
7) those where all three types of effects are roughly similar.

These categories can be visually represented in Table 7.

Table 7: Categories for Spatial Decomposition

	Violence (v)	Economic (e)	Network (n)
V	Dominant	Weak	Weak
E	Weak	Dominant	Weak
N	Weak	Weak	Dominant
v-e	Strong	Strong	Weak
v-n	Strong	Weak	Strong
e-n	Weak	Strong	Strong
v-e-n	Strong	Strong	Strong

To define and measure these seven categories, we begin by calculating the extent to which each municipality deviates from the mean of all municipalities for each group of factors.

The joint effect of violence-related factors in each municipality is calculated with the following formula:

$$v_i = \left|\hat{\beta}_{\Delta h}\ (\Delta h_{\mathrm{i}}\ -\ \overline{\Delta h}) + \hat{\beta}_{\bar{h}}(\overline{h_{\iota}}\ -\ \overline{\overline{h}})\right|$$

Where v_i is the estimated effect of the violence variables for a given municipality *i*, and $\hat{\beta}_{\Delta h}$ and $\hat{\beta}_{\bar{h}}$ are the estimated coefficients for the average 1yr-change in the homicide rate and the average homicide rate

within each municipality over the period of study, respectively. The values of the variables for each municipality are denoted by Δh_{i} and $\overline{h_t}$ and the cross-sectional averages of each (over all municipalities) are denoted by $\overline{\Delta h}$ and $\bar{\bar{h}}$.

The joint effect of economic factors in each municipality is calculated with the following formula:

$$e_i = \left|\hat{\gamma}_{\Delta\mathrm{inc}}\left(\chi_{\Delta inc,\mathrm{i}} - \overline{\chi_{\Delta inc}}\right) + \hat{\gamma}_{\overline{inc}}\left(\chi_{\overline{inc},i} - \overline{\chi_{\overline{inc}}}\right) + \hat{\gamma}_{\Delta\mathrm{u}}\left(\chi_{\Delta\mathrm{u,i}} - \overline{\chi_{\Delta\mathrm{u}}}\right) + \hat{\gamma}_{\overline{u}}\left(\chi_{\overline{u},i} - \overline{\chi_{\overline{\mathrm{u}}}}\right)\right.$$
$$+ \hat{\gamma}_{k}\left(\chi_{k,\mathrm{i}} - \overline{\chi_{k}}\right) + \hat{\gamma}_{d}\left(\chi_{d,\mathrm{i}} - \overline{\chi_{d}+}\right) + \hat{\gamma}_{\mathrm{kx}d}\left(\chi_{\mathrm{kx}d,\mathrm{i}} - \overline{\chi_{\mathrm{kx}d}}\right)$$
$$\left. + \hat{\gamma}_{pov}\left(\chi_{pov,\mathrm{i}} - \overline{\chi_{pov}}\right)\right|$$

Where $\hat{\gamma}_{\Delta\mathrm{inc}}$, $\hat{\gamma}_{\overline{inc}}$, $\hat{\gamma}_{\Delta\mathrm{u}}$, $\hat{\gamma}_{\overline{u}}$, $\hat{\gamma}_{k}$, $\hat{\gamma}_{d}$, $\hat{\gamma}_{\mathrm{kx}d}$ and $\hat{\gamma}_{\mathrm{pov}}$ are the estimated coefficient for the five economic variables. The values of the variables for each municipality[37] are denoted by $\chi_{\Delta inc,\mathrm{i}}$, $\chi_{\overline{inc},i}$, $\chi_{\Delta\mathrm{u}}$, $\chi_{\overline{u},i}$, $\chi_{k,\mathrm{i}}$, $\chi_{d,\mathrm{i}}$, $\chi_{\mathrm{kx}d,\mathrm{i}}$, and $\chi_{pov,\mathrm{i}}$. The cross-sectional averages of each (over all municipalities) are denoted by $\overline{\chi_{\Delta inc}}$, $\overline{\chi_{\overline{inc}}}$, $\overline{\chi_{\Delta\mathrm{u}}}$, $\overline{\chi_{\overline{\mathrm{u}}}}$, $\overline{\chi_{k}}$, $\overline{\chi_{d}}$, $\overline{\chi_{\mathrm{kx}d}}$, and $\overline{\chi_{pov}}$.

The joint effect of migration network factors in each municipality is calculated with the following formula:

$$m_i = \left|\hat{\eta}_{\mathrm{mig}}\left(\mu_{\mathrm{mig,i}} - \overline{\mu_{mig}}\right) + \hat{\eta}_{\Delta rem\gamma}\left(\mu_{\Delta rem\gamma,i} - \overline{\mu_{\Delta rem\gamma}}\right) + \hat{\eta}_{\Delta\mathrm{rem}}\left(\mu_{\Delta\mathrm{rem,i}} - \overline{\mu_{\Delta rem}}\right)\right|$$

Where $\hat{\eta}_{\mathrm{mig}}$, $\hat{\eta}_{\Delta rem\gamma}$, and $\hat{\eta}_{\Delta\mathrm{rem}}$ are the estimated coefficient for the three migrant network variables. The values of the variables for each municipality are denoted by $\mu_{\mathrm{mig,i}}$, $\mu_{\Delta rem\gamma,i}$, and $\mu_{\Delta\mathrm{rem,i}}$. The cross-sectional averages of each (over all municipalities) are denoted by $\overline{\mu_{mig}}$, $\overline{\mu_{\Delta rem\gamma}}$, and $\overline{\mu_{\Delta rem}}$.

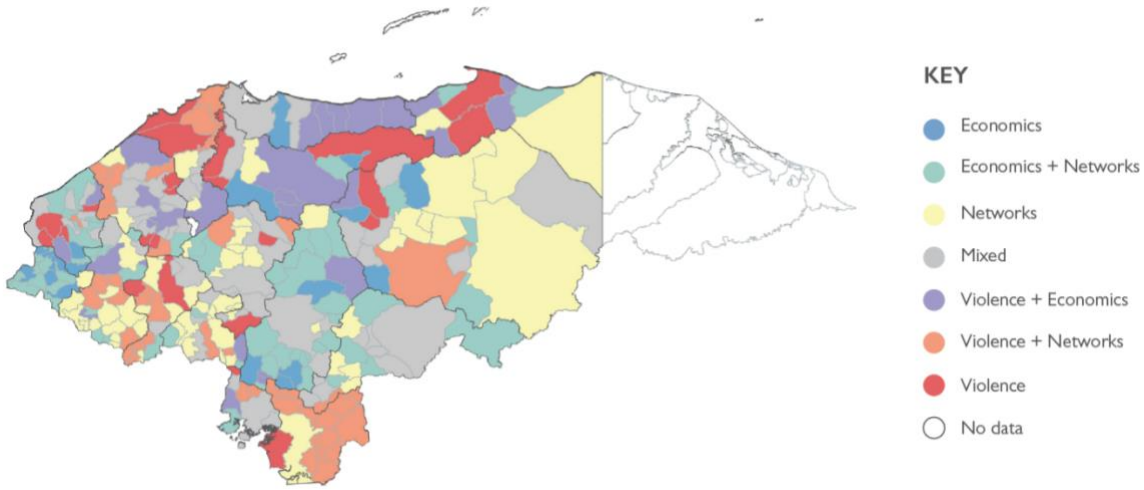
After calculating these values for each municipality, the difference between each pair of factors is calculated. In cases where one set of factors, say violence, is more important than another, say economic, the value will be positive. It would be possible to classify municipalities into three categories, those where violence factors were the most important, those where economic factors were most important, and those where migrant network factors were most important. However, often the weight of two or three sets of factors is quite similar, even if nominally differnet. To reflect this, the analysis defines where a factor, alone or in combination with others, is "much" more important (>>) that others. This is defined as equivalent to the 25th percentile of the total range of estimated impacts, or 0.103.[38] For example a municipality is

[37] For variables based on the EPHPM, these values are the same for all municipalities within the same department.
[38] This is the definition for the full set of years. For 2013-2017 the value is 0.108 and for 2018-h1.2019 it is 0.104.

classified as violence-dominant if, $v_i >> e_i$ AND , $v_i >> m_i$. This method, applied across all possible combinations of factor groups, is used to operationalize the categories presented in Table 6.[39]

It is worth emphasizing that to say that one group of factors (say violence) dominates in explanatory importance in a municipality does not imply that this municipality has higher levels of violence. In some cases, it does, but the weight of violence factors will also be greater for municipalities that have much lower-than-average violence.

Figure 14: Spatial Decomposition of Factors Explaining U.S. Border Apprehension Rate



The seven categories of municipalities, thus defined, are visually represented in Figure 14. Municipalities in red are where violence factors were much more important than the others; those in blue are where economic factors (including drought) were much more important; and municipaliteis where migrant network facotrs were much more important are yellow. Blended colors indicate where the importance of two factors is much greater than that of the third. For example, in green municipalities migrant network and economic factors were roughtly equal to each other but much more important than violence. The municipalities where the importance of all three groups of factors are roughly equal appear in grey.

The spatial decomposition analysis suggests patterns similar to those reflected in the R-squared decomposition analysis. The largest number of municipalities were those where migrant networks were much more important (23%). The next two largest froups were those where networks and economic

[39] It should be reemphasized that the 25th percentile threshold is somewhat arbitrary. For example, if we use a higher threshold, for example one standard deviation (0.267), almost 60% of municipalities fall into the "mixed" category.

factors together were much more important than violence (21.3%); where networks and violence were much more important than economic factors (18.0%); and the mixed category, where no group of factors was much more important that any other group (14.7%). That is, migrant network factors, alone or in combination, were important determinants for the cummulative apprehension rate in more than three quarters (76%) of municipalites. Violence and economic factors together were much more important than migrant networks in 9.3% of municipalites, followed by economic factors alone (8.0%), and violence alone (6.7%).

Discussion and Conclusions

Migration is commonly understood to be a dynamic and multi-causal phenomenon. Many analyses seek to isolate and measure the effect of a single factor hypothesized to drive migration, while attempting to hold others constant. In contrast, the analysis presented here simultaneously measured the relative importance of different hypothesized determinants of migration across municipalities in Honduras. Specifically, it identified the shares of variance in the municipal-level cumulative rate of U.S. border apprehensions accounted for by three sets of factors thought to explain migration: violence, economic factors, and connection to transnational migrant networks. This research note also mapped and presented the results of a spatial decomposition analysis to visually represent the municipalities in the country where different factors, alone or in combination with others, were the most important in shaping migration rates.

The analysis found that from 2013 through the first half of 2019, migrant network factors consistently account for the largest share of explained variance: more than one-third from 2013 to 2017 and close to 30% in 2018 and 2019. Across the whole time-period violence and economic factors (excluding drought) had similar weights (10.7% and 11.6% respectively). However, the importance of economic factors was more than 14% from 2013 to 2017 and became considerably less important (7%) in 2018 and 2019. The importance of violence remained more constant across these subperiods. It is noteworthy that, though small, drought grew considerably in explanatory importance in 2018 and 2019, exceeding 5% and approaching the levels of violence and economic factors.

The centrality of migrant networks and migration history emerged in the spatial decomposition analysis as well, and these factors were relevant either alone or in combination in more than three-fourths of municipalities. This analysis was not constructed to arrive at strong causal claims about the relationships between these groups of factors and the apprehension rate. However, the key contributions are to simultaneously examine the relative importance of different sets of factors for the country on average while visually representing where the apprehension rate is most driven by different factors alone or in combination.

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