ABSTRACT

Overseas employment provides multiple socioeconomic benefits for families and communities in sending countries. But communal violence can potentially disrupt these flows, causing lasting damage to local and national economic development. *Under what conditions does political violence – and particularly low-intensity sectarian conflict – increase or decrease economic migration?* This paper argues that the level of militant control over local political and social institutions conditions whether individuals emigrate for work. Using statistical analysis of Pakistani data on overseas employment and political violence, it finds that attacks by transnational/Islamist militants on local political institutions substantially reduce economic migration. Attacks against non-political targets have no significant effect, further emphasizing the importance of local institutions.

Keywords: Employment Migration, Insurgency, Economic Migration, Pakistan, Political Violence, Communal Violence

INTRODUCTION[1]

Overseas employment has multiple benefits for families and local communities in sending country. Workers bring home valuable skills; remittances buffer receiving households from socioeconomic shocks; and communities can develop stronger political institutions. However, the literature on economic migration is often divorced from that examining migration created by political violence, like internal displacement and refugee flows. But approximately 15.4 percent of remittances are sent to countries facing persistent conflict.[i] Foreign employment is especially important to these countries, where workers typically earn several times the average national wage, relieving financial pressure on households and governments. Consequently, this paper asks: *Under what conditions does political conflict – and particularly low-intensity communal violence – increase or decrease economic migration?*

This paper argues that in-group control over local political and social institutions structures migratory incentives for out-groups. Overseas employment decisions are typically made at the household, not individual, level. Families balance the financial benefits of sending members to work abroad against the physical security benefits of those individuals remaining in-country. With stronger institutions, local residents are better able to organize collectively, reconstitute social networks following attacks, and resist militant expropriation. This cushions households against sectarian violence, increasing the benefits of overseas employment. By contrast, when militants disrupt these institutions, out-group households prefer to keep members in-country for physical security and social support. Moreover, following the literature on mass migration, conventional warfare substantially reduces overseas employment, as residents flee high-intensity conflict.

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I assess the theory using statistical analysis of communal attacks in Pakistan from 2005–2014. Pakistani data on economic migration is centrally collected and uniformly defined, and a large network of private companies facilitates overseas employment for lower- and middle-class individuals. During this period, Pakistan also experienced a wide range of political violence, including insurgencies, assassinations, CIA-implemented drone strikes, and conventional warfare. The models evaluate four different forms of violence to distinguish their competing effects. The results support the theory: sectarian control – proxyed by transnational militant attacks on political targets – substantially reduces out-group economic migration. These results are robust to corrections for extreme values on covariates, unit interdependence, and omitted variables. Communal violence against *non*-political targets does not have a statistically significant effect, further emphasizing the importance of local institutions.

The following section identifies three shortcomings in the literatures on migration and political violence, prompting a new theory. Section 3 outlines the data used in the statistical tests, the results of which are provided in Section 4. The final section concludes with this paper's contribution to empirics and policy.

ECONOMIC MIGRATION AND POLITICAL VIOLENCE

Migrants embark on overseas employment for a variety of personal, family, and economic reasons. Prominent among these is increased income, with overseas workers typically earning several times their home country's average wages.[ii] Much of this returns as remittances. For Pakistan, this paper's empirical focus, 496,286 people worked abroad in 2016, sending back US$19 billion. In other words, 0.7 percent of the country's workforce generated nearly 7 percent of its GDP. (Hussain and Anjum, 2014)

Unlike natural resource rents or foreign aid, this income directly enhances the financial power of recipient families, enhancing their social status and buffering socioeconomic shocks. The funds are generally devoted to productivity-enhancing activities like education, generating longer-term returns. (Kapur and McHale, 2012) Individual workers gain critical skills, as well as social benefits like better marriage prospects. This has the added socioeconomic benefit of raising the human capital stock upon their return. Entrepreneurs leverage newfound diasporatic links with the host state to establish trade and investment companies. Communities sending workers abroad often develop stronger political institutions, and the additional financial resources can loosen constricting patronage systems. (Li and McHale, 2009; Pfutze, 2009) Generally, economic emigration is a driver of socioeconomic activity in the home country.

Political violence disrupting these flows therefore has a large socioeconomic impact. The scholarly and policy literatures focus on large-scale displacement due to high-intensity fighting or climate change.[iii] But the impetus to flee is not necessarily clear under communal conflict, which is sporadic but enduring. Residents can accommodate militant groups while continuing to live their lives,[iv] avoiding the costs and uncertain outcome of migration. Dreher, Krieger and Meierrieks (2011) find that skilled labour disproportionately leaves following terrorist attacks, in part because they have the resources to do so.

Moreover, sectarian groups often seek to control, not displace, residents. Prevailing models of counterinsurgency emphasize the role of non-combatants in supporting or inhibiting militant operations, durability, and capabilities. (Mao, 1937; Trinquier, 1961; Taber, 1965; Galula, 1964; Sepp, 2005; Petraeus, 2006; Cassidy, 2008; Kalyvas, 2006) Residents' tacit or active support is necessary to provide such groups with financing, secure bases of operation, and defence against counterinsurgent surveillance. Militants can achieve this control through the selective use of force and positive inducements like promises of autonomy, anti-corruption drives, or social service provision. (Kydd and Walter, 2006) In essence, residents are the domain over which militants and counter-militants contest because of their financial, military, and political utility. Locals therefore face more complex migratory decisions compared to those under high-intensity conflict.

Critically, Semyonov and Gorodzeisky (2005, 2004); Massey (1990, 1994); Massey et al. (1993); and Stark (1984) argue that households, not individuals, act as maximizing agents when considering economic migration. That is, "the household unit acts collectively to increase the pool of economic resources for the benefit of all members of the household." (Semyonov and Gorodzeisky, 2005, 48) Under high-intensity conflict, all household members face the same incentives to flee. But under sectarian conflict, households can "allocate" members to different roles based on characteristics like gender, age, and health.

Finally, the literature on forcible migration typically looks at effects in the receiving country. Salehyan and Gleditsch (2006) examines refugees as a vector of conflict diffusion in host states, while Bove (2015) finds that migration from terror-prone countries increases the likelihood of such attacks in the receiver.[v] In short, migrants bring violence with them. But Kapur and McHale (2012) find that migration has equally important effects on the sending country. Funding and people flow between diasporas and sending communities, with Li and McHale (2009) arguing that these movements can disrupt or improve political and economic institutions at home. Remittances also loosen patronage networks, granting residents a measure of independence from existing socioeconomic constraints. (Pfutze, 2009)

Given these departures from existing theory, we need a new account of communal violence and economic migration. I argue that variation in militant control of political institutions determines whether households send members abroad for work. (Weiner, 1992-1993) This aligns with findings on insurgency/counterinsurgency and economic development, where the degree of social service provision, the robustness of economic institutions, and the extent to which insurgents can co-opt or capture public institutions and networks determines their operational success and capabilities. (Berman, Shapiro and Felter, 2011; Kalyvas, 2006; Gaibulloev and Sandler, 2008) The stronger local institutions are, the more households can operate within clearly-defined social rules and security expectations to maximize their income through economic migration. The weaker or more coercive these bodies are, the more households must account for physical safety rather than income generation. Communal violence – which I define as organized, coordinated, physical attack across politically salient social cleavages of religion, ethnicity, ideology, and/or language – is integral to these strategies. Sectarian groups attack out-groups to establish control or seize resources; dissuade or defeat challenges; demonstrate power to residents, other sectarian groups, and military forces; and displace or co-opt existing networks and institutions. (Kalyvas, 2006; Kfir, 2014; Nasr, 2000)

Increased local incomes due to economic migration potentially provide sectarian groups with a larger base of financial resources. But expropriating these funds is difficult. They are distributed across multiple households, requiring significant manpower to collect. In Pakistan, even the most capable militant group – Tehrik-i-Taliban Pakistan (TTP) – has typically avoided levying taxes, instead looting large institutions like government offices or establishing criminal enterprises. (Rana, 2014, 150-6, 162) Most others are simply incapable of expropriating efficiently. (Gopal, Mahsud and Fishman, 2013, 145) Furthermore, although they represent a significant share of family income, individual remittance transfers are fairly small. Consequently, up to a certain cost/benefit ratio, it may simply not be worthwhile for militants to monitor and tax residents, as it diverts from more lucrative activities. Third, the exact remittance amounts are often hidden. Private money transfer companies, banks, and the *hawala* network emphasize the security of their transactions and social trust, providing strong incentives to avoid cooperating with militant groups. (Faith, 2011) Militant groups are often reluctant to coerce these businesses, since they too use them for financial transfers. Most importantly, expropriation can trigger local resistance, undermining militant support. (Petraeus, 2006; McMaster, 2008) For example, residents of Pakistan's Federally Administered Tribal Areas (FATA) were initially hopeful that the Taliban would improve local political and economic conditions, but quickly turned against the group when they seized food and shelter. (Gopal, Mahsud and Fishman, 2013, 139) In total, when militant control is low, these groups have less ability to expropriate resources, making it more attractive for family members to work abroad.

By contrast, when militant power increases, residents have less incentive to engage in economic migration. This is particularly the case if militants are able to seize local social and political support systems. Controlling these networks provides militants with more information about resource flows, increasing their ability to expropriate. (Kalyvas, 2006) Furthermore, the stronger militants are, the more they can ignore local resistance or blowback to their activities. As local structures weaken, residents lose alternative sources of social, political, and economic support. (Massey, 1990) Consequently, they have less ability to ward off militant actions. Because overseas employment decisions are predicated on the maximization of household well-being, greater militant strength forces family members to remain in-country. Their assistance is needed to better manage the social and economic disruption caused by militant activities, as well as increasing physical security or resilience against militant predation. This is a social/political version of "brain drain," where, because younger, more mobile, and often more skilled residents leave, the remaining family members have less ability to resist militant coercion. (Kapur and McHale, 2012)

In short, households facing sectarian violence must balance the benefits of overseas employment against their direct physical safety needs. Militant control of local political institutions plays a key, intermediating role, determining where that balance is struck. The paper's central hypothesis is:

> Hypothesis Employment migration is negatively associated with local militant capabilities.

PAKISTANI DATA ON VIOLENCE AND MIGRATION

To test this hypothesis, I focus the study on Pakistan, which offers systematically collected data on employment migration, in addition to varying forms and intensities of political violence. This section presents the data, and Table I displays descriptive statistics.

[TABLE I ABOUT HERE.]

Overseas employment data in Pakistan is centrally collected, definitionally consistent, and aligned with the theory's concept of economic migration. Each year, millions of Pakistanis travel abroad for work, frequently in the Persian Gulf oil fields or in construction. About half are classified as unskilled labour, requiring minimal education and training, while the other half are skilled labourers, with a moderate level of training. All Pakistanis hoping to work abroad must register with a single, centralized federal office: the Bureau of External and Overseas Employment (BEOE). This is the only body granting visas whose stated purpose is overseas employment. In addition to social networks and word-of-mouth, the recruitment process is facilitated by 4,337 Overseas Employment Promoters (OEP), which actively headhunt Pakistani workers and link them to overseas firms, decreasing the risk of geographically-based selection bias. Indeed, employment migration outflows track with each district's share of the Pakistani population, being correlated at 0.57.

This operationalization avoids several measurement pitfalls. BEOE employment is open to a wide range of skill sets and socioeconomic classes, better controlling for the higher likelihood of skilled employment to flee terrorist attack. (Oda, 2007; Plant, 2008) It also aligns with the hypothesis's level of analysis and the theory's causal mechanism. Under mass migration, for example, the entire family typically leaves, rendering militant control irrelevant to their future decisions. With overseas employment, however, family members remain behind, with militant control affecting the decision to continue working overseas.

The measurement is also relatively "clean." Although Pakistanis can pursue BEOE employment for non-economic benefits, the migration itself is predicated on economic exchange. First, workers must demonstrate secured employment before departing. Second, Ahmad et al. (2008) and Lakha and Aziz (2011) reject social factors – like reuniting with family or naturalization – as motivating employment migration. BEOE visas do not provide pathways to citizenship in the host countries, nor do they allow family members to travel, stay, or work with the visa holder. Unsurprisingly, these authors find that economic factors – unemployment, poverty, and poor working conditions in Pakistan – drive this migration. Third, Pakistanis are unlikely to use this mechanism to flee high-intensity conflict. The overseas employment certification process takes several months at least, assuming the applicant possesses all the necessary documentation. Basic travel arrangements, medical examinations, and obtaining a passport can extend that time frame further. Even if an individual worker managed to flee danger this way, their family would be left behind. BEOE-sanctioned overseas employment thus mirrors the theory's expectations about household economic migration decisions.

Because this study examines the effects of political violence year-on-year, I use the change in annual migration by district as my dependent variable. Absolute migration would confound the

analysis, as larger districts will have more applicants, regardless of violence levels. Consequently, the dependent variable – *Migration* – is a continuous variable tracking the change in annual migration from a district from 2005–2014.

Since Partition, Pakistan has suffered from varying intensities and forms of organized political violence. The country's ethnic, linguistic, and religious heterogeneity provide multiple social cleavages that violent groups have seized upon to consolidate control. Most recently, the War in Afghanistan pushed the Taliban and Al-Qaeda into Pakistan, where they established bases in FATA and Khyber Pakhtunkhwa. Some tribes there formed *lashkars* (militias) to challenge them, while Pakistani armed forces and the CIA have launched operations to degrade these transnational groups.

Each of these carries different implications for militant power. Communal violence has been the most common form of political attack. According to the Global Terrorism Database, Pakistan has witnessed 11,521 instances since 1970. They have risen precipitously since 2004 (Figure 1) and are distributed throughout the country (Figure 2). These attacks occur across several socio-political divides. Since General Zia's regime, Sunni and Shia militant groups like *Sipah-i-Sahaba, Lashkar-e-Jhangvi*, and *Sipah-e-Mohammad Pakistan* have contested federal attempts to enshrine Sunni religious beliefs in state policy. (Abbas, 2010) These religious groups are often closely aligned with political parties, who sometimes employ them or their own violent arms to advance electoral/political strategies. Moreover, many groups launch attacks across ethnic and tribal divides. Pakistan has witnessed multiple Baloch separatist challenges, for example, while tribal *lashkars* have variously supported and opposed Pakistani conventional military campaigns rooting out transnational terrorism.

[FIGURE 1 ABOUT HERE.]

[FIGURE 2 ABOUT HERE.]

However, these categories of communal violence cause problems for clean identification of the theory, as we would expect different effects on in- versus out-groups. Attacks by political party militias, for example, might increase local authority if most residents support that party. Consequently, this paper concentrates on attacks by transnational Islamist groups. Although dozens have emerged in Pakistan since 2001, TTP and Al-Qaeda are the most active. TTP in particular is responsible for nearly half of all attributed transnational sectarian attacks in the country (1030/2140).[vi] Formally founded in 2007 as a covering network for Islamist militant leaders, this group seeks to replace Pakistan's federal government with a Taliban-inspired Islamist regime. Al-Qaeda shifted many of its core personnel to Pakistan during the U.S. war in Afghanistan. Importantly, these groups remain socially, culturally, and economically distinct from the local population. Financing and fighters largely come from international sources, and Pakistani residents typically consider them to be foreign interlopers suppressing their traditions and lifestyles. (Fair, 2010; Rajan, 2015; Mapping Militant Organizations, 2012; National Commission, 2004; Combating Terrorism Center, 2012) In leveraging this social isolation, the paper should obtain a cleaner identification of communal violence's migratory effects, establishing a baseline of how out-groups generally respond to political violence in Pakistan.[vii]

Consequently, *Terror* is a count of attacks by transnational militant groups on political targets, identifying how control of official institutions and networks affects economic migration. The theory would expect *Terror* to have a negative and statistically significant association with *Migration*. Moreover, as a control, the models include attacks by these same groups against *non*-political targets (*Non-Political*) to further isolate the causal mechanism. Data is drawn from the BRFS dataset of political violence in Pakistan.[viii]

While *Terror* records attacks throughout the country, the FATA region is politically and culturally distinct from the rest of Pakistan. In particular, tribal structures have formal legal powers. The colonial-era Frontier Crimes Regulation (FCR) established the *malik* ("ruler" or "influentials") system, officially sanctioning pre-existing local political structures. (Johnson and Mason, 2008; U.S. Army, 2009; Berea, 2010; Foust, 2008) The governor of neighbouring Khyber Pakhtunkhwa (KP) appoints some "official" *maliks*, and he rubber-stamps tribal leaders who already possess their traditional authority as "unofficial" *maliks*. While the federal government gains marginal control over FATA, the local Pashtun tribes are effectively autonomous, with leaders occupying an integral role in local political, economic, social, and family decisions. FATA has thousands of these tribal leaders, and collectively, they are the most widely respected public institutions in the region.[ix] Transnational militant groups often target or intimidate these leaders to bolster their local control. Consequently, *Tribal* counts tribal leader attacks, drawn from the South Asia Terrorism Portal database. (Portal, 2016) We would expect *Tribal* to be negatively associated with employment migration.

The third form of political violence is targeted missile strikes by U.S. unmanned aerial platforms. Commonly called "drone strikes," the U.S. Central Intelligence Agency, in coordination with Pakistan's Inter-Services Intelligence agency, has led a campaign since 2004 of increasing scope and resources to kill sectarian leaders in Pakistan. The New America Foundation (NAF) has collected data on these strikes from major international, regional, and Western media outlets, tracking the date, location, and estimated casualties of each strike. Their tallies have been used extensively in public discussions about the program's efficacy, as well as academic studies like Johnston and Sarbahi (2016), Jaegar and Siddique (2011), and Asfandyar and Moore (2015).

However, strike precision is a matter of extensive debate. Due to the program's covert nature, the U.S. government does not publicly disclose strike results or after-action reports. Morgues do not provide independent tallies of casualties, and few journalists or researcher travel to strike-affected districts. Consequently, militant groups typically provide strike data and "frame" casualties to further their political and strategic goals. (Fair, 2010) Even using these numbers, however, the program is of significantly lower intensity and greater precision than conventional military operations, killing 65 sectarian leaders, 1576 militants, and 305 civilians from 2004–2013. Overall, the literature finds that the program is "relatively" precise and achieves its military goals, although often only temporarily. (Johnston and Sarbahi, 2016; Jaegar and Siddique, 2011; Asfandyar and Moore, 2015) As a result, the study expects strikes to degrade militant control, increasing employment migration. Note, however, that *Strike* is heavily concentrated in FATA. Out of 348 observations, 346 occur in the Tribal Areas, and two in neighbouring Khyber Pakhtunkhwa. The statistical analysis will account for this in robustness checks.

The final form of political violence is military operations conducted by the Pakistani armed forces. Since 2004, conventional Pakistani forces have launched several large-scale, combined arms operations in specific districts in northwest Pakistan to root out militant groups and restore central government control. These include two major battles in the Swat district in 2007 and 2009; Operation Zalzala in 2008, involving approximately 15,000 troops, artillery, helicopters, and tanks; and Operation Zarb-e-Azb, a two-year joint military offensive involving around 30,000 troops. These operations resulted in an estimated 58,000 casualties from all sides. They have also created mass internal displacement, with over five million newly displaced individuals since 2009, according to the Internal Displacement Monitoring Centre. (Internal Displacement Monitoring Centre, 2017) Consequently, *Warfare* indicates whether the Pakistani armed forces held counter-militant operations in a district-year.[x] We would expect a substantively large decrease in employment migration due to this variable, as residents flee high-intensity violence. Similar to *Strike*, *Warfare* is also concentrated in FATA (26/28 observations) and Khyber Pakhtunkhwa (2/28 observations).

In combination, these four types of political violence allow us to assess how economic migration responds to varying intensities of conflict. The theoretically-expected effects, as well as counts for each variable by province, are summarized in Table II.

[TABLE II ABOUT HERE.]

I also include several control variables taken at the national level to account for factors compelling or impeding outward migration. Ahmad et al. (2008) and Lakha and Aziz (2011) find that economic variables in the sending district and receiving country drive employment migration. I include the World Bank's measures of *Growth*, a measure of Pakistan's annual GDP growth rate, as well as *Oil Growth*, the average growth rate for the Gulf Cooperation Council states, the primary receiving countries for Pakistani migrant labourers. Furthermore, the theory assumes a causal chain between economic migration, remittances, and militant control. A direct test would simply assess the effect of militant control on remittances, but such data is unavailable at the district level. Including national-level remittance data can help to smooth out year-on-year "shocks" from these financial transfers, hopefully leading to clear estimates of local-level effects. I therefore use *Remittance* data from the World Bank as a national-level control.[xi]

Rainfall captures the average rainfall in each district. As much of Pakistan's economy is agricultural, this variable helps control for economic shocks and proxies the overall level of productivity and income. In addition, as Aman Rana (2013) demonstrates, rainfall is a plausibly exogenous factor, serving as a strong baseline for the "natural" inputs to economic output independent of variables like terrorism and political structures.

Finally, as discussed, FATA is politically and administratively distinct from the rest of Pakistan, and a significant portion of political violence occurs there. As this correlation could potentially bias estimates, I include *FATA* as a dummy control. However, for this study, the region may not be as distinctive as its legal status suggests. It provides just over 5 percent of all migrant labourers, in line with its share of the total Pakistani population. Furthermore, FATA and non-FATA economic migration are correlated at 0.977. FATA migrants likely respond to similar

economic incentives as Pakistanis more generally. In addition, as Figure 1 demonstrates, the Tribal Areas are not the most violent parts of Pakistan. Baluchistan, KP, and even Sindh in certain years see more transnational militant attacks, and notably, Islamabad has the most attacks by area, suggesting a higher individual risk of being killed. In either case, including this dummy variable will allow us to better isolate and estimate the specific effects of FATA's idiosyncrasies.

STATISTICAL RESULTS

What effect does sectarian control have on economic migration? This section presents two separate sets of models. The first focuses on *Terror*, *Tribal*, and *Non-Political*, as these directly capture militant power and are a straightforward test of the theory. To preview the results, variables proxying sectarian political control align with the theory. Both *Terror* and *Tribal* have strong, negative relationships with *Migration*. The disruption of socio-political institutions destabilizes local communities, prompting residents to remain in-country. By contrast, attacks against non-political targets are consistently statistically insignificant. These results hold even after correcting for extreme values on other covariates, unit interdependence, and over-specification of the underlying empirical model.

The second set of models focuses on *Warfare* and *Strike*, which emerge from a different data-generating process compared to *Terror* and *Tribal*. These operations were reactive, responding to pre-existing transnational sectarian activity. Moreover, they were generally confined to the FATA region and the Swat district. We therefore have to disentangle this recursive and geographically limited dynamic to obtain a clean estimate of these variables' effects. I use a two-stage regression approach to achieve this, subjecting these tests to the same robustness checks as the first set of models. With that correction, *Warfare* consistently aligns with the theory. *Strike*, however, has an erratic relationship to BEOE migration. A potential explanation as to why is reserved for the online appendix.

As seen in Figure 3, *Migration* resembles a normal distribution, although one with significant clustering between -1000 to 1000. Hence, I use panel OLS to estimate its relationship to political violence.

[FIGURE 3 ABOUT HERE.]

The baseline model, including controls, is:

$$\begin{aligned} Migration = \ & \alpha + \beta_1(Terror) + \beta_2(Tribal) + \beta_3(Non-Political) + \beta_4(Strike) \\ & + \beta_5(Warfare) + \beta_6(Grow) + \beta_7(Oil\ Grow) + \beta_8(Remittance) \\ & + \beta_9(Rainfall) + \beta_{10}(FATA) + \varepsilon \end{aligned}$$

The results of this initial model are presented in Table III, Model 1, and they align with the theory. *Terror* and *Tribal* both lead to a substantial reduction in BEOE migration, suggesting that attacks on local leadership structures enhances in-group control and introduces significant socio-political instability. Indeed, such attacks have the third and second largest substantive effect – positive or negative – on economic migration, respectively. Attacks against non-

political targets are positively and significantly associated with *Migration*, contradicting the theory.

[TABLE III ABOUT HERE.]

However, this study relies on observational data. Pakistan's districts vary widely on many political, economic, and social dimensions. These differences could inappropriately mask or inflate other variable's effects. To obtain sharper estimates, I employ matching to "clean up" the data, reducing the dataset so that observations share similar values on their covariates. Specifically, I use nearest neighbour matching without replacement, using data from the 1998 Pakistani census. Obviously, the country has changed significantly since then. Yet, this data is the most comprehensive baseline of national statistics, and it forms the sampling baseline for the NAF, Terror Free Tomorrow, and other surveys. I include several measures from the census as "pre-treatment" covariates: district population, population density, the literacy rate, the sex ratio, and the local economic growth rate. Adding these controls helps to account for baseline district conditions and differences that could affect outward migration.[xii] In essence, I compare "treated" districts (those experiencing violence by transnational actors) and "control" districts (those that do not), removing observations with extreme covariate values. This increases our confidence that the political violence variables genuinely drive the statistical results, at the potential cost of external validity since we reduce (slightly) the number of observations. The improvement in average bias is visualized in Figure 4. The data shows general improvement, with most black dots moving closer to the zero-line.

[FIGURE 4 ABOUT HERE.]

Model 2 in Table III uses this new dataset, and the results align with the theory. *Terror* and *Tribal* retain their negative and significant relationship. Both also increase in substantive effect, by 31.56 percent and 67.5 percent respectively. *Non-Political* maintains a positive association, but it is now statistically insignificant, suggesting that systematic differences between treated and controlled districts were driving the previously significant result. Overall, the consistent results on *Terror* and *Tribal* increase our confidence that their estimated effects are not driven by extreme values on other covariates.

Correction for unit interdependence

We must also correct for spatial interdependence. As a substantive example, we might expect that sectarian violence in the same district has a cumulative effect on migration across years. Alternatively, an attack in one district could bolster militant power in neighbouring locales. Either would bias the results by inflating the effects of a single attack.[xiii] I use a spatial error model to directly account for unit interdependence, specifically:

$$y = X\beta + \varepsilon$$
$$\varepsilon = \gamma W\epsilon + \mu$$

Solving the system of equations for y gives:

$$y = X\beta + (I - \lambda W)^{-1}\mu$$

In effect, this model says that the error term can be broken down into two parts. The first, μ, is truly random with a mean of 0 and a variance of 1, as in OLS. However, a second component, $\gamma W\epsilon$, captures correlation between units. W is an NxN weights matrix relating each unit to the other, directly modelling interdependence. λ is the estimated interdependence coefficient.

Table III, Model 3 presents the results of this spatial error approach using matched data. *Terror* and *Tribal* again retain their signs and significance, despite this correction. Transnational sectarian attacks against political targets cause 441 more people to remain, and tribal leadership deaths reduce migration by 1112 individuals on average. *Non-Political* remains statistically insignificant, as theoretically expected. Finally, the coefficient on the spatial error term – λ – is negative and significant. This suggests that district-specific characteristics, not province or general Pakistani traits, are driving the estimated effects on *Migration.*

Model sensitivity to omitted variables

In sum, across the models, *Terror* and *Tribal* consistently possess the theoretically expected signs and significance. But selection bias could be driving these results. Districts receiving transnational militant attacks may systematically differ from those not receiving such violence. Indeed, as seen in Figure 1, 95.1 percent of attacks occur in only four out of Pakistan's eight provinces. Unfortunately, we cannot directly correct this problem using observed data. However, Altonji et al (2005) developed a calculation determining how sensitive each predictor variable is to unobserved confounders, and by extension selection bias. (Heckman, 1979) In essence, they ask "How substantively strong must these unobserved factors be to wipe out the effects of our main explanatory variables?" If they must be several times stronger, and if the model includes controls for likely alternative explanations, then we can have greater confidence in the robustness of the results to omitted variables.

To formalize their process, Altonji et al state the following condition:

$$\frac{E(\varepsilon|Predictor = 1 - E(\varepsilon|Predictor = 0)}{Var(\varepsilon)} = \frac{E(X\acute{\gamma}|Predictor = 1 - E(X\acute{\gamma}|Predictor = 0)}{Var(X\acute{\gamma})}$$

where X is the matrix of control variables for the outcome equation, γ is a vector of their coefficients, and $\boldsymbol{\varepsilon}$ is a vector of the residuals. In essence, on the left hand side, we calculate the potential effect that unobserved covariates could have on economic migration, normalizing that for variation in the error term. On the right hand side, we do the same thing, normalizing for variation in our observed covariates. When this equality holds, a normalized shift in the distribution of unobservables would be equally as powerful as a shift in observables. Altonji et al then transform this equation to ask how large the left hand side must be to explain away our predictor's effects, producing the following ratio, where $\hat{\beta}$ is our predictor's coefficient:

$$\frac{\hat{\beta}}{\left[\frac{Var(Predictor)}{Var(Residuals)}\right] / [E(\varepsilon|Predictor = 1) - E(\varepsilon|Predictor = 0]}$$

Applying this calculation to *Terror'*s results in Model 3 from Table III provides a ratio of 3.67. That is, normalized unobserved variables must be over three times as strong as the model's covariates to wipe away the effect of cumulative secrecy on subsequent covert/public decisions. Note that, in their original analysis, Altonji et al argue that an implied ratio of 3.55 strongly supports their claim. In addition, the ratio on *Tribal* is 45.02, suggesting even less sensitivity to omitted variables. Even with these results, it is certainly possible that selection effects could undermine this article's argument. However, it is difficult to identify what omitted factors would have such a powerful effect, particularly since the models already include control variables commonly linked to economic migration.

Recursive effects of drone strikes and warfare

The statistical analysis consistently affirms *Terror*'s and *Tribal'*s effects: Militant control substantially reduces BEOE-tracked migration. However, for *Warfare* and *Strike*, we must first correct for their reactive relationship to militant violence, as Manna (2015) and Smith and Walsh (2013) do. I use a two-stage approach, regressing those variables (separately) on *Terror*. I then replace *Terror* with the first stage's residuals and rerun the models in Table III. The results are summarized in Table IV. *Warfare* now consistently aligns with the theory and is robust to matching and spatial corrections. Conventional operations by Pakistani forces sharply reduce economic migration, causing 4631 fewer people to work overseas in the spatial model. Furthermore, *Warfare* achieves an Altonji ratio of 10.45.

However, *Strike* produces erratic results, suggesting that, whatever its other effects, the drone program has inconsistent or perhaps time-varying effects on economic migration. Additional analysis on the drone strike program can be found in the online appendix, but the top-line result here suggests that strikes do not have the clear effects that proponents or opponents expect.[xiv]

[TABLE IV ABOUT HERE.]

CONCLUSION: SCHOLARLY AND POLICY IMPLICATIONS OF STATISTICAL FINDINGS

What determines when people facing sectarian political violence leave their homes to pursue employment overseas? Persistent, locally distributed, and low-intensity violence creates different migratory incentives than conventional military operations, climate change, or civil war. Under these conditions, families must balance the financial benefits of sending members overseas against their increased physical security and resilience. The theory aligns with an extensive literature on insurgency/counterinsurgency, that operations enhancing (reducing) sectarian control of local social and political institutions decrease (increase) migratory incentives.

Overall, the statistical results support the theory. Militant attacks on local institutions disrupt social and household stability, thereby reducing employment migration. Attacks against non-political targets do not have a statistical impact. After accounting for recursive effects, conventional warfare, proxyed by Pakistani armed forces operations, substantially reduces employment migration, as residents flee high-intensity conflict. These results are robust to corrections for extreme values on covariates, unit interdependence, and omitted variables. In particular, the use of BEOE data provides a cleaner estimate of sectarian violence's migratory effects. Because a large and integrated network of foreign companies, OEPs, and the BEOE facilitate economic migration, factors like initial income and financial barriers should have smaller confounding effects on the statistical models.

On policy implications, local political institutions condition overseas employment, and strengthening these structures can have significant, downstream benefits. How to do so is, of course, tricky. This analysis suggests that strengthening local political institutions against inter-communal attacks, or reconstructing them quickly in their aftermath, is critical to restarting employment migration. Donors and aid practitioners can focus on local party and legislative development programs, as well as work bolstering civil society organizations and community financial support structures. In the past, the Pakistani federal government has supported the creation of *lashkars* to directly challenge militants. Such efforts have sometimes backfired when the government itself loses local support. At least when considering economic outcomes, repurposing these groups into reconstruction teams or the nucleus of a more resilient political and social decision-making body may help to quickly restart employment migration following a sectarian attack on local leadership. Furthermore, despite potentially important strategic and security benefits, conventional military operations drastically reduce employment migration and therefore financial resources. This can create lasting economic costs. Policymakers should account for such political and social reconstruction efforts in their counterinsurgency planning.

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[i] Calculation by author using data from World Bank (2018) and Sarkees and Wayman (2010).

[ii] Research described in "Open doors but different laws" (2016). Also available in http://eservices.mol.gov.ae/LabourMobility/attachments/Theme4E.pdf. See also Li and McHale (2009). In addition, Ahmed, Sugiyarto and Jha (2010) and Awan, Javed and Waqas (2015) found that Pakistani families with a migrant worker have higher incomes and spend significantly more than those without.

[iii] For examples, see Salehyan and Gleditsch (2006); Reuveny (2007); Greenhill (2010); Schmitter, Heisler and Heisler (1989).

[iv] This is a foundational point in the counterinsurgency literature. See Sepp (2005); Petraeus (2006); Cassidy (2008).

[v] For other examples, see Buhaug and Gleditsch (2008); Milton, Spencer and Findley (2013); Koschade (2006); Pedahzur and Perliger (2006); Sageman (2004, 2011); Perliger and Pedahzur (2011); Leiken and Brooke (2006); Kephart (2005); Bandyopadhyay and Sandler (2014).

[vi] Note that 77.5 percent (7392/9532) of political attacks in the GTD database are unattributed/unclaimed or have unknown attackers.

[vii] I assume that out-groups respond similarly to inter-communal violence no matter who the in-group attackers are. It could be that Sunni-Shia communal violence or inter-ethnic attacks, as examples, systematically differ from transnational violence. However, we have some reason to treat these manifestations of a single concept. While these groups may differ in their relation to and end goals for the Pakistani state, their objectives and strategies towards local out-group residents are broadly similar. Both transnational and domestic sectarian groups attempt to substitute out-group authority with their own institutions. (Abbas, 2010, 43; Kfir, 2014) In addition, at least some indigenous Sunni militants have mimicked transnational groups' operational methods, further reducing differences. (Basit, 2013, 15)

However, certain political divides could facilitate greater social embeddedness. But given Pakistan's religious, ethnic, and ideological heterogeneity, it is difficult to establish *a priori* which cleavage should facilitate this more compared to transnational Islamist appeals. Indeed, given the salience of sub-national identities in Pakistan, we

might expect that ethnic or party-based groups would more easily obtain greater social penetration and reach. Migratory responses to violence by transnational groups should therefore be viewed as a lower-bound compared to other attackers.

[viii] Bueno de Mesquita et al, 2015. As robustness checks, I used alternative terrorist attack data from the Center for the Study of Terrorism, 2016 and Pakistan Institute for Peace Studies, 2018. This did not change the substantive results.

[ix] In repeated public opinion surveys, the Community Appraisal & Motivation Programme (CAMP) asked FATA residents what features of the FCR and the *malik* system should be amended. 58.7 percent of respondents wanted to reinforce traditional customs and authority. In a separate question, 63.9 percent of respondents wanted to reduce the authority of "official" *maliks* and grant more decision-making power to tribal leaders and *jirga*. (Understanding FATA: 2011, 2012, 28-29)

[x] Conventional operations by Pakistani military forces are clearly not a form of low-intensity conflict. However, such operations only took place in a handful of districts for a limited duration. For example, *Warfare* only appears in 2.56 percent of observations, concentrated in FATA and Khyber Pakhtunkhwa. Moreover, its inclusion increases the variation in political violence measures, serving as a baseline to evaluate the other violence intensities.

[xi] As a robustness check, I omit *Remittance* in all the models below. Its exclusion has no substantive impact on the results.

In addition, we have no data on internal remittances, those sent by individuals working in one Pakistani district to family members in another. Many former FATA residents, for example, moved to Khyber Pakhtunkhwa province or Pakistan's major cities to escape violence and seek better economic opportunities. Like foreign remittances, this funding acts as an economic cushion for local residents, potentially reducing the need for external employment migration. Ideally, spatial corrections can mitigate some of this issue, at least accounting for those individuals moving to neighboring districts. But a direct control for this effect must await better data and further research on the district-level impact of internal migration. (See Khan, 2000; Adams, 1998; and Oda, 2007 for recent studies on Pakistani internal migration.) Despite significant missingness, currently available data on external and internal migration are correlated at 0.777, potentially implying that these two forms respond to similar incentives and may similar effects.

[xii] In another set of models, I included six district-level controls for social and demographic factors affecting social stability and outward migration, drawn from the Pakistan Bureau of Statistics' Social and Living Standards Measurement project and FATA government sources. (Pakistan Bureau of Statistics, 2015; FATA, 2010) These are: average monthly income, the provincial unemployment rate, the unskilled labour percentage, the urban population percentage, literacy, and the sex ratio.

Only *Income* had any statistically significant effect on *Migration*, and even that result was eliminated through the robustness checks described later. This reinforces the claim that migration is driven by the "pull" factor of economic opportunity, even after accounting for socioeconomic conditions in FATA.

[xiii] Johnston and Sarbahi (2016) also use a spatial model to estimate displacement of terror attacks by drone strikes from one district to another. Like my analysis below, they find that this diversion does not occur.

[xiv] As mentioned, in addition to their reactive dynamic, *Warfare* and *Strike* are heavily concentrated in FATA. As a robustness check, I remove all FATA observations, as that district's idiosyncrasies could be driving the results. Using the two-stage approach, *Warfare* maintains a negative and significant relationship with *Migration*, and its substantive effect increases. 6,197 more people remain in-country in districts with Pakistani conventional military operations. However, *Strike* continues to have erratic results, never consistently achieving significance nor possessing a persistent sign across models.

Moreover, removing FATA observations does not affect the first set of models' results on *Terror*, *Tribal*, and *Non-Political*.