# International Peacekeeping Encourages Foreign Direct Investment: Subnational evidence from Liberia's extractive sector.

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#### Abstract

Attracting foreign direct investment (FDI) to post-conflict countries is difficult. After conflict ends, governments struggle to perfectly enforce the institutions which otherwise shield investors from political instability. Reflecting this governance problem, this article presents a new explanation linking United Nations (UN) peacekeeping operations to subnational allocations of FDI in post-conflict countries. I specifically argue that UN peacekeeping police encourage FDI because they credibly signal to investors where the legal protections against expropriation, extortion, and violence are most likely to be enforced at the local level. Data from Liberia's extractive sector support my argument. Increasing the local deployment of UN police encourages foreign firms to establish new natural resource concessions, particularly in areas where the government's capacity to uphold the rule of law is weak.

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What explains subnational allocations of foreign direct investment (FDI) in post-conflict countries? Firms hedge against the risk that political instability will cause the expropriation, extortion, or destruction of their assets (North and Weingast, 1989). Accordingly, research suggests governments emerging from conflict can attract FDI by adopting policies which signal their commitment to peace (Appel and Loyle, 2012; Garriga and Phillips, 2014; Joshi and Quinn, 2018).

Yet the adoption of such policies is insufficient to explain foreign firms' investment decisions within post-conflict states. The legal protections adopted to attract FDI after conflict ends may not be enforced locally because post-conflict governments struggle to project power (Karim, 2020; Blair, 2020). To that point, armed groups' attacks on foreign-owned investments are well-documented in conflict-affected settings (Cheng, 2018; Pshisva and Suarez, 2006), and the threat of these attacks weighs heavily on firms' behaviors (Blair, Christensen and Wirtschafter, 2020). Therefore, foreign firms' decision-making should respond to factors that credibly signal which among a set of otherwise comparable investment projects within a post-conflict country will remain shielded from future political instability.

Contemporary United Nations (UN) peacekeeping operations (PKOs) can help foreign firms navigate the uncertainty of investing in post-conflict situations. I argue that the subnational deployment of UN peacekeeping police encourages FDI because it credibly signals to foreign firms where the legal protections against expropriation, extortion, and violence are mostly like to be enforced. UN police deploy with a mandate to restore and uphold the rule of law on behalf of the state (Salvatore, 2019; Blair, 2020). The operations UN police undertake to fulfill this mandate suggest that their deployment generates localized signals about the likelihood of armed groups successfully disrupting foreign investors' operations. These signals are credible because of the UN's reputation as an independent and effective international organization, the costs associated with deploying personnel, and the costs PKOs incur should their police forces fail to restore the rule of law.

I test this argument in post-conflict Liberia's extractive sector. The United Nations Mission in Liberia's (UNMIL) operational mandate included helping the government leverage its natural resources to foster peace and development (Beevers, 2018). How the mission's uniformed personnel worked towards this goal accords with my theory. UNMIL's police force supported Liberian National Police operations to restore the rule of law, including in areas which would later house foreign-owned natural resource concessions.

To quantitatively test my argument, I combine geocoded data on natural resource concessions with data on the location, strength, and composition of UNMIL personnel from 2004 until 2018. I pre-process my data on factors that research and UNMIL reports link to the establishment of new peacekeeping bases from which UN police can patrol to help address the non-random deployment of peacekeepers. My analyses also controls for a number of onthe-ground conditions in Liberia that likely influenced UNMIL's subnational deployment and new investment. A simulation-based sensitivity analysis is used to quantify the robustness of my results to omitted variable bias (Cinelli and Hazlett, 2020).

I find that even small deployments of UN police are positively associated with the probability of new investment. The positive relationship between UN police and FDI is robust to unobserved confounds capable of inducing eight-times more bias than would the omission of an important covariate specified in my analysis. Moreover, I find evidence supporting the signaling mechanism I propose, as opposed to an observationally-equivalent mechanism whereby UN police directly encourage FDI via capacity building. For example, I show that deploying UN police to areas where the government's rule of law institutions are weak is positively associated with FDI, whereas deploying UN police to areas where the government's rule of law institutions are strong is not associated with FDI. In the former setting, UN police can exclusively encourage FDI via signaling because the capacity building mechanism is not operative by definition—the government's rule of law institutions have yet to benefit from the mission's capacity building operations. In the latter setting, UN police are unlikely to shape firms' decisions via signaling because their deployment is not needed to bolster the credibility of the government's rule of law institutions.

This article makes two contributions. First, it adapts existing theory to reflect the subnational governance problems characterizing many FDI-recipient countries. Over 80 percent of countries in the international system contain areas wherein state actors lack the ability to make and enforce rules (Stollenwerk, 2018). When the level of state governance varies within a host country, foreign firms require assurance that institutional protections designed to shield their assets will be enforced locally. Relatedly, this article extends research on the subnational political economy of FDI to conflict-affected settings where the commitment problem constraining investment is heightened, whereas prior studies focus on countries like the United States (Lu and Biglaiser, 2020) and Mexico (Samford and Gómez, 2012; Jensen, Malesky and Walsh, 2015).

Second, this article demonstrates how UN peacekeepers reshape post-conflict countries outside of their direct effect on conflict. Contemporary peacekeeping missions oversee various processes like restoring the rule of law (Blair, 2020; Smidt, 2020), facilitating local economic development (Mvukiyehe and Samii, 2021; Bove, DiSalvatore and Elia, 2021), and promoting environmental quality (Bakaki and Böhmelt, 2021). Further accounting for the breadth of activities UN peacekeepers undertake will help explain the variation in peace and development observed across conflict-affected settings.

# Political Risk & Post-Conflict FDI

Firms considering investment abroad face a common problem: determining which investment opportunities carry the lowest level of political risk. FDI is highly specific with costly divestitures and generates profits that accrue unevenly over time (Vernon, 1971). Politics represents a risk to firms considering FDI because unforeseen shifts in a country's political environment may undermine an investment's profitability.

Chief among the political risks salient to foreign investors is the possibility a host state experiences political instability. Political instability can increase the risk that host governments expropriate foreign firms' assets, particularly when instability coincides with larger threats to the incumbent regime (Mahdavi, 2020). Instability also may trigger political violence that destroys firms' assets (Jamison, 2021; Blair, Christensen and Wirtschafter, 2020) or enables non-state armed groups to extort firms' operations (Pshisva and Suarez, 2006; Cheng, 2018).

Various domestic and international institutions influence FDI because they credibly signal to firms which potential host countries are least likely to experience political instability (Jensen, 2006). For example, institutions extending formal property rights (Li and Resnick, 2003; Biglaiser and Staats, 2010; Staats and Biglaiser, 2012) or constraining the chief executive (Jensen, 2008; Li, 2009) are associated with higher levels of FDI because they assuage firms' concerns about expropriation. Participating in international trade agreements (Buthe and Milner, 2008; Kerner, 2009; Allee and Peinhardt, 2011) can similarly encourage FDI.

Credible signals about the political risk of investment play an even more important role in attracting FDI to post-conflict countries (Appel and Loyle, 2012; Garriga and Phillips, 2014). Governments emerging from conflict have limited administrative capacities and strong incentives to misrepresent domestic political conditions, ultimately reducing the amount of reliable information available to investors (Collier, 1999; Murdoch and Sandler, 2002). At the same time, firms considering post-conflict FDI seldom can glean information from existing FDI because violence reduces investment (Busse and Hefeker, 2007).<sup>2</sup>

Accordingly, research analyzing cross-national variation in post-conflict FDI focuses on factors capable of generating especially credible signals of political stability. For example, Garriga and Phillips (2014) find that post-conflict FDI is likely to follow the receipt of non-geostrategic foreign aid. Receiving this kind of aid credibly signals to foreign firms whether other countries have trusted a post-conflict government to honor policy commitments that should reduce the political risk of investment. Similarly, the implementation of comprehensive peace agreements (Joshi and Quinn, 2018) and restorative justice processes (Appel and Loyle, 2012) can help attract post-conflict FDI.

My argument begins by identifying an additional, and overlooked, attribute of postconflict countries that is relevant for FDI. Many post-conflict governments face substantial governance problems, limiting their ability to minimize the political risk of investment uniformly within their borders. The governments emerging from conflict struggle to project power, mitigate violence, and uphold the rule of law (Karim, 2020; Blair, 2020). Conflict and crime can remain widespread in certain areas of post-conflict countries, even when the government makes national commitments to build peace (Autesserre, 2010).

The governance problems that persist after conflict suggests that firms considering postconflict FDI navigate a two-stage credible commitment problem. In the first stage, firms rely on one set of heuristics to decide which among a set of otherwise comparable post-conflict

<sup>&</sup>lt;sup>2</sup>Nonetheless, firms and post-conflict governments have incentives to overcome the commitment problem this lack of information exacerbates. FDI can catalyze post-conflict reconstruction (Bunte et al., 2018), and foreign firms can gain first-mover advantages in post-conflict settings (Turner, Aginam and Igbokwe, 2011).

countries is most likely to adopt policies designed to shield investors' assets from political instability. In the second stage, firms rely on a different set of heuristics to decide which among an a set of otherwise comparable investment projects will benefit from the implementation of national initiatives to foster political stability. National policies are insufficient to explain where FDI is sited *within* post-conflict countries because they do not signal to firms which specific investments carry the lowest political risk.

There is good reason to believe firms think locally when seeking post-conflict FDI. For example, the U.S. State Department's investment reports for the Democratic Republic of the Congo caution that "while laws protecting investors are in effect, the court system is often very slow to make decisions or follow the law."<sup>3</sup> Relatedly, Blair, Christensen and Wirtschafter (2020) show that direct exposure to violence causes firms to draw down their operations, while indirect exposure causes firms to expand their operations. This result is consistent with other evidence linking firm behavior to government failures to disband non-state armed groups in post-conflict Colombia (Pshisva and Suarez, 2006) and Liberia (Cheng, 2018). Yet existing research seldom considers whether foreign investors have subnational preferences (see Garriga (2021) for a recent exception).

My general theoretical proposition is that factors credibly signaling to foreign firms where protections against expropriation, extortion, and violence are likely to be enforced should explain subnational variation in post-conflict FDI. I now turn to an explanation of why the local deployment of UN peacekeeping police may encourage post-conflict FDI. First, I briefly trace the evolution of UN PKOs into entities capable of shaping firms' subnational investment decisions. Second, I describe how UN police uniquely produce local signals of stability within post-conflict settings. Finally, I articulate why the signals UN police generate are sufficiently credible to reduce investors' uncertainty about political instability.

## UN Peacekeeping Police & FDI

UN PKOs have evolved over the last three decades. The UN Security Council (UNSC) modified its charter for PKOs in the 1990s to address the state collapse that commonly coincides with contemporary conflicts. These reforms authorized the deployment Chapter VII,

<sup>&</sup>lt;sup>3</sup>Accessed here, 30-November-2022

or "multidimensional," PKOs that intervene in other processes the UN views as essential to peacebuilding, such as protecting civilians and training domestic law enforcement. Multidimensional PKOs are equipped to substitute for the state as the sole provider of security, public goods, and the rule of law, sometimes steering national environmental (Beevers, 2018; Bakaki and Böhmelt, 2021) and electoral (Smidt, 2020) policies.

A multidimensional PKO deploys different kinds of personnel to implement its mandate. My argument specifically focuses on local deployments of UN police, who are uniquely equipped to restore the rule of law. UN police work towards this goal in three ways, all of which signal to firms where the local risk of expropriation, extortion, and violence is low.

First, UN police actively bolster the rule of law where the state is weak. The daily operations UN police undertake are meant to "induce deference [to the rule of law] from the bottom-up" (Blair, 2020, 63). UN police patrolled alongside national police officers in Liberia because the latter could not unilaterally enforce the rule of law in remote areas (Blair, 2020) and provided courts security in the Central African Republic to bolster ongoing criminal investigations (Howard, 2019). Both activities should alleviate firms' concerns that certain legal protections, such as formal property rights, will not be enforced locally. For example, when UN police boost the legitimacy of formal judicial institutions, they may also reduce the probability that disputes involving FDI projects are resolved in informal venues where the laws advantaging foreign firms are less relevant (Winters and Conroy-Krutz, 2021).

Second, UN police are extraordinarily effective at preventing armed groups from victimizing non-combatants, such that their deployment signals to firms where the probability of attacks on their employees and infrastructure is minimal. Violence against non-combatants associated with aid organizations (Narang and Stanton, 2017) and international firms (Powers and Choi, 2012) regularly occurs in conflict-affected settings. For example, 39 workers in Burkina Faso were killed when an unidentified armed group used explosives and small arms to attack a bus transporting workers to a Canadian-owned mine.<sup>4</sup> UN police are equipped to deter this kind of violence, deploying in small numbers to integrate with the civilian population and extract information on the whereabouts of armed groups (Nomikos, 2021).<sup>5</sup>

<sup>&</sup>lt;sup>4</sup>See report, accessed 30-November-2022.

<sup>&</sup>lt;sup>5</sup>See description of UN police operations here, accessed 30-November-2022

This operational strategy substantially mitigates violence against non-combatants (Hultman, Kathman and Shannon, 2019).

Third, UN police reduce the kinds of criminal activities linked to the expropriation and extortion of firms' assets. In Haiti, Liberia, Sierra Leone, East Timor, and the Democratic Republic of the Congo, UN police facilitated successful operations to curb illicit drug trafficking, prevent criminal violence, and disband organized crime (Salvatore, 2019). In South Sudan specifically, Salvatore (2019) shows that relatively small deployments of UN police are associated with substantial reductions in local homicide rates. Given research demonstrating how criminal activities deter local investment (Pshisva and Suarez, 2006; Cabral, Mollick and Saucedo, 2019), local deployments of UN police may provide much appreciated signals to foreign firms about where the probability of expropriation and extortion is low.

The signals local deployments of UN police generate will only influence foreign firms' behaviors if they are credible. There are at least two reasons to believe UN police produce credible signals about the local probability of expropriation, extortion, and violence.

First, the UN's reputation and independence as an international organization should increase investors' confidence that improvements to the rule of law are more likely to occur near areas where UN police are deployed, especially relative to areas where only national police forces are present. UN peacekeepers have a reputation as impartial (Howard, 2019; Nomikos, 2021) and effective (Gordon and Young, 2017; Walter, Howard and Fortna, 2021), which sharply contrasts that of the rule of law institutions which emerge from civil war (Karim, 2020; Blair, 2020). Thus, the governance problems which undermine the credibility of post-conflict governments' police forces do not apply to local deployments of UN police. Moreover, the independence PKOs have to decide where their personnel subnationally deploy should assuage concerns of host governments strategically manipulating the local deployment of peacekeeping personnel to attract FDI.<sup>6</sup>

Second, the costs associated with the deployment of peacekeeping personnel and subsequent failures to implement a mission's mandate lends credibility to the signals about political stability UN police generate. UN PKOs incur significant costs when constructing the operational bases from which UN police deploy: e.g., the UN PKO in Liberia spent over

<sup>&</sup>lt;sup>6</sup>See the UN's principles of peacekeeping, accessed 30-November-2022.

\$100 million USD to construct and maintain its facilities.<sup>7</sup> At the same time, PKOs incur costs when they fail to implement their mandates (to prevent civilian victimization, to curb crime, etc.). Improving political stability directly benefits PKOs by enhancing the physical security of their own personnel, which is increasingly at risk (Fjelde, Hultman and Bromley, 2016; Duursma, 2019). Failures to improve local political stability also may undermine the principle of consent authorizing the initial deployment of PKOs.<sup>8</sup> Given these costs, UN PKOs have strong incentives to deploy their personnel (including police) to areas where major improvements to political stability are feasible (Ruggeri, Dorussen and Gizelis, 2016).

To summarize: the political risk of investment is not uniform within countries emerging from conflict. In response, foreign firms must assess which among a set of otherwise comparable investments carries the least political risk. UN police, who are charged with upholding the rule of law when state actors cannot do so, help foreign firms make this assessment. Specifically, local deployments of UN police signal to investors where safeguards against expropriation, extortion, and violence are most likely to be enforced within post-conflict states. The UN's organizational reputation, the cost of deploying personnel, and the costs associated with local failures to implement PKOs' operational mandates suggest that these signals are credible, generating the following hypothesis:

#### Hypothesis 1 Local deployments of UN peacekeeping police encourage FDI.

A positive relationship between UN police and FDI could suggest a related but distinct mechanism: foreign investors responding to the realized impacts of UN police's capacity building. These two mechanisms are neither mutually exclusive nor wholly interdependent. Successful capacity building would only reinforce the credibility of UN police's signals about the rule of law to foreign investors, and the UN's reputation suggests simply deploying UN police would improve firms' priors about political stability (compared to the counterfactual of no local UN police presence). In either case, the presence of UN police can be a sufficient condition for FDI. Absent UN police's sustained capacity building, local improvements to the rule of law which strengthen protections for foreign firms' are less likely to be enforced. I test for the possibility if this capacity building mechanism below.

<sup>&</sup>lt;sup>7</sup>See budget, accessed 30-November-2022.

<sup>&</sup>lt;sup>8</sup>See the UN's principles of peacekeeping, accessed 30-November-2022.

# Setting

I focus on post-conflict Liberia's extractive sector to test my argument, for two reasons. First, Liberia is an archetypal post-conflict state. Liberia experienced two bouts of civil war between 1989 and 2003. Political stability remains fragile in Liberia, and the subnational governance problems civil war created in Liberia suggest that credible, localized signals of political stability were required to attract FDI.

Second, UN peacekeepers were deployed to Liberia under a mandate which actively involved them in natural resource governance. I describe this mandate and how UN peacekeepers plausibly encouraged FDI in Liberia's extractive sector below.

## UN Peacekeeping & Natural Resource Concessions in Liberia

The UNSC authorized the United Nations Mission in Liberia (UNMIL) in 2003, where it remained until 2018. Through UNMIL and the UNSC, the UN shaped natural resource governance in post-war Liberia.<sup>9</sup> UN leadership believed developing Liberia's natural resources was a key pathway to long-term peace and stability: securing resource-rich regions could both accelerate the demobilization of combatants and boost state capacity by increasing foreign investment (Beevers, 2018). The UNSC imposed sanctions on the export of Liberian minerals and timber to prevent their exploitation by armed groups and mandated UNMIL "to assist the transitional government in restoring proper administration of natural resources" (Report B, p. 4, Table D1).

Published UNMIL Reports of the Secretary General—which describe the mission's progress towards fulfilling its mandate—clearly frame securing and stabilizing Liberia's resource-rich areas as a pathway to long-term peace. Two reports explicitly identify conflict over Liberia's natural resource wealth as a persistent threat to political stability (Reports P and Q, Table D1). As UNMIL and government forces slowly reclaimed resource-rich areas, disputes between international concessionaires and local communities emerged as an important security issue (Reports S-V, X, and Y, Table D1).

<sup>&</sup>lt;sup>9</sup>Liberia contains significant resource wealth. Pre-war mining exports made up over 65 percent of its GDP.

UNMIL's reports also highlight how its local operations may have influenced foreign concessionaires' decision making. First, the reports document how the Liberian National Police's (LNP) extensive capacity problems left UNMIL's police force as the sole credible provider of the rule of law in Liberia. One early report notes how "the [LNP] urgently require continued mentoring, as well as basic equipment, uniforms, arms and ammunition, vehicles and communication equipment" (Report I, p.6, Table D1). Despite UNMIL efforts to train and conduct outreach on behalf of LNP officers, public confidence in the LNP's ability to uphold the rule of law remained limited even five years after UNMIL arrived in Liberia (Report N, Table D1). LNP stations were commonly razed during periods of political unrest (Reports N, O, and S, Table D1). Concerns about restoring the rule of law were especially pronounced outside of the capital city (Report M, p.5, Table D1). In one outlying county, 42 LNP officers shared just one motorbike to patrol and received salaries paid directly out of their commander's pocket (Report M, Table D1).

Given these capacity problems, UNMIL's police played a direct role in ensuring the rule of law was upheld locally. One report from 2009 bluntly states: "The Liberian National Police...still requires support from UNMIL police advisers and formed police units to carry out even routine patrolling" (Report P, p.6, Table D1). LNP officers often were "overwhelmed by large crowds" and could only restore public order after UNMIL police arrived on scene (Report V, p.4, Table D1). For example, UNMIL police assisted the LNP in quelling a riot which broke out after a LNP police station was attacked (Report N, Table D1). UNMIL police also deployed alongside LNP forces in government operations to combat violent crime (Reports L and O, Table D1).

Second, UNMIL's operational reports show how its personnel directly contributed to securing Liberia's natural resources (Report F, Table D1). The mission supported operations to reclaim public lands (Report F, p.12, Table D1) and rubber plantations armed groups seized during the civil war (Reports J-M, R, and T, Table D1). UN police specifically helped stabilize reclaimed plantations, jointly patrolling with LNP officers—ostensibly, to boost their credibility (Reports J and L, Table D1). One report hints that UN police actively monitored ex-combatants at Liberia's diamond mines to support the Kimberly Process certification scheme (Report I, p.12, Table D1). These activities help contextualize broader statements from the World Bank and the Liberian Investment Commission about UNMIL creating a "favorable environment that...attracted direct foreign investment into the country" and producing "peace and stability...good for both business and industry."<sup>10</sup>

Of course, these reports do not provide systematic evidence of UNMIL's police force increasing FDI. While one report states that "international companies informed the mission that their decision to invest in Liberia had taken into account the security cover provided by the UNMIL force," none document investors attributing their decision to site a project in one place over another due to nearby UNMIL police (Report Q, p.4, Table D1).

Still, the evidence presented above significantly motivates my argument about UN police and post-conflict FDI. Reducing the risk of armed groups expropriating, extorting, or otherwise attacking foreign investors' assets was a important goal for UNMIL. Achieving this goal required a number of interventions, which ultimately spilled over into helping promote political stability in and around areas containing valuable natural resources. It follows that local deployments of UNMIL police helped foreign investors determine which deposits of natural resources were the least risky to develop into concession areas.

# **Research** Design

## Measurement

I use data on natural resource concessions and UNMIL's presence in Liberia from 2004 until 2018 to test my argument. My spatial unit of analysis is a Liberian "clan": the country's third-order administrative unit (N=305).

My primary outcome is the establishment of new natural resource concessions per clanmonth. I measure this using spatial data on concession areas in Liberia (Bunte et al., 2018). Observations missing verifiable start dates are excluded from my analysis (n=138), leading to a final sample of 418 natural resource concessions.

Multiple types of concession agreements are in my sample, including: agricultural concessions (to develop agricultural land), mineral development agreements (to begin large-scale

<sup>&</sup>lt;sup>10</sup>See World Bank report and Liberian Investment Commission report, accessed 30-November-2022.

industrialized mining operations), and private use permit contracts (to authorize the sale of timber by private land owners). The size and process of establishing different concession agreements varies. While larger agreements require concessionaires to negotiate with the government, others have concessionaires negotiate with private land owners. Ultimately, the Liberian government is responsible for approving all concession agreements.

Finalizing a concession agreement requires immediate investments that should make firms sensitive to the short-term risk of expropriation, extortion, and violence. Some concession agreements include minimum investment requirements ranging from tens of thousands to hundreds of thousands of US dollars per year. Others include annual surface rental fees costing between tens of thousands to millions of US dollars. Concessionaires are contractually obligated to pay rental fees or back-pay minimum investment requirements regardless of their investment in physical infrastructure at project sites.<sup>11</sup>

Over 400 natural resource concessions were established in Liberia from 2004 to 2018. New concession areas were especially commonplace between 2011 and 2015 (Figure E3), and nearly every clan contained an active concession area by 2015 (Figure E4). The bulk of investment occurred in the mining sector (Figure 1a) and well into the post-conflict period (Figure 1b). Gold, diamonds, and iron ore were the main commodities extracted among the 349 mining concessions.

I use the *RADPKO* database to calculate the count UNMIL police deployed per clanmonth (Hunnicutt and Nomikos, 2020).<sup>12</sup> The count of UNMIL police is lagged by a single month, since a firm's evaluation of local political conditions seems more likely to occur shortly before they finalize a concession agreement.<sup>13</sup> These data are drawn from publicly available deployment maps which allow foreign parties to track where and in what capacity uniformed peacekeepers are deployed subnationally (see Figures E5 and E6).

Figure E1 visualizes the deployment of UNMIL's police force over the mission's tenure.

<sup>&</sup>lt;sup>11</sup>Additional information on the types of agreements reviewed in this paragraph can be found in Appendix A.

<sup>&</sup>lt;sup>12</sup>While the Geo-PKO dataset includes excellent information on the types of military troops PKOs deploy (Cil et al., 2019), I use RADPKO due to its coverage of UN police.

<sup>&</sup>lt;sup>13</sup>Surprisingly little research documents the FDI decision-making process. What research exists implies that firms evaluate their own capacity to engage in FDI prior to identifying candidate host countries, sectors, and projectsd (Aharoni, 1966). Therefore, firm's assessment of local political conditions might occur after these internal considerations and while finalizing individual projects within a country.



Figure 1: Trends in Natural Resource Concession, Post-Conflict Liberia

#### Figure 2: UNMIL Deployments near Rubber Plantations, 2006

(a) UNMIL Bases near Guthrie Rubber Plan-(b) UNMIL Bases near Cocopa Rubber Plantatation, Bomi County, 2006 tion, Nimba County, 2006



*Note:* Liberian territory is filled in light grey. Territory filled in dark grey marks the boundaries of future natural resource concessions. Areas with white fills are outside of Liberia. Black points mark the location of nearby UNMIL bases. UNMIL deployment figures are the maximum monthly count of UNMIL personnel deployed to each base in 2006.

More than half of UNMIL's police force was stationed at two bases in Liberia's capital city, while the remainder were stationed at 9 bases outside of the capital. However, because UN police can be effective when deployed in limited numbers (Salvatore, 2019), even the relatively small contingents of UNMIL police deployed to outlying bases should be sufficient to signal to firms where legal protections against expropriation, extortion, and violence are credible.

Deployment data from RADPKO also confirm UNMIL's operations to reclaim rubber plantations from armed groups (Figure 2. Over 250 peacekeepers were stationed within the concession area containing the Guthrie Rubber Plantation, 120 of which were deployed just two months before UNMIL personnel helped government forces retake the plantation. Peacekeepers also were deployed within a 30 kilometer radius of Cocopa Rubber Plantation in Nimba county.

## Identification & Estimation

The local deployment of UN peacekeepers may correlate with other factors which explain subnational allocations of FDI. I adopt three strategies to help address this concern in my analysis. First, I control for time-varying factors that represent alternative explanations for why extractive sector FDI flowed to some parts of post-conflict Liberia but not others. Second, I following existing research and use coarsened exact matching (Iacus, King and Porro, 2012) to pre-process my data on factors that likely determined where UNMIL constructed the bases from which its police could patrol.<sup>14</sup> Third, I implement the simulation-based sensitivity analysis introduced in Cinelli and Hazlett (2020) to formally quantify the degree of confounding required to overturn my results.

#### **Controlling for Alternative Explanations**

My analysis accounts for five time-varying factors that may be endogenous to the relationship between peacekeeping and FDI. First, I control for the lagged count of conflict events and the rolling annual mean of conflict events within each clan, following research demonstrating that

<sup>&</sup>lt;sup>14</sup>Appendix B provides additional information on how the UN deploys peacekeeping missions.

violence affects firms' investment decisions (Blair, Christensen and Wirtschafter, 2020).<sup>15</sup>

Second, I control for the possibility that UN peacekeeping troops confound the relationship between UN police and FDI. Peacekeeping troops and police often deploy to the same base. Whether UN troops would increase or decrease FDI is theoretically ambiguous. While UN troops deploy are tasked with deterring violence, they are not always successful Duursma (2019) and do not always deploy to the least secure regions in post-conflict countries (Ruggeri, Dorussen and Gizelis, 2016). Thus, the co-deployment of UN troops could undermine or boost the ability of UNMIL's police to generate credible signals about local political stability. Controlling for the count of UNMIL troops stationed at each base per clan-month should account for both forms of confounding.

Third, I include dummy variables denoting the twelve-month period following the removal of sanctions on Liberian timber, rubber, and diamond exports. The UN began enforcing these sanctions between 2001 and 2003 to prevent armed groups from exporting natural resources. Timber and rubber sanctions were officially lifted in October 2006, and diamond sanctions in April 2007. All else equal, foreign firms may have been more likely to establish new concessions in resource-rich clans immediately following the reversal of these sanctions.

Fourth, I measure the contemporaneous and lagged count of new concessions established in spatially contiguous clans. The Liberian government advanced policy to encourage FDI in "development corridors," where it required concessionaires to invest in infrastructure that would facilitate further investment, generate public goods, and spur local economic growth (Bunte et al., 2018). This policy suggests foreign investors may have been more likely to establish new concessions in clans that were surrounded by existing concessions.

Fifth, I specify the presence of World Bank projects as a covariate. Extant research documents the complex relationship between international aid and FDI (Selaya and Sunesen, 2012), and UN PKOs' mandates often include facilitating the delivery of international assistance. Thus, I measure the presence of World Bank development projects at the county-level for all clan-months in my sample.<sup>16</sup>

<sup>&</sup>lt;sup>15</sup>All conflict data are drawn from the Armed Conflict Location Event Database (Raleigh et al., 2010).

<sup>&</sup>lt;sup>16</sup>Geocoded data on World Bank development projects are available through AidData's World Bank Geocoded Research Release, accessed 15-February-2023. I aggregate these projects' geocoding up to the county-level to reduce potential measurement error, given that only 31 percent of projects in the data are geocoded to the Liberian district or clan.

#### Modeling UNMIL's Deployment Process

Next, I pre-process my sample of clans so they are balanced on factors which are likely endogenous to the siting of UNMIL peacekeeping bases and foreign investors' extractive projects. I first focus on variables that capture the logistical challenges of establishing new peacekeeping bases: pre-deployment nighttime luminosity, population density, and road density. These measures approximate a clan's level of development. Peacekeeping missions should prefer to site bases in more developed locations because better infrastructure makes conducting local patrols less costly and more effective. Indeed, poor road networks consistently hamstrung UNMIL's operations (Reports F, G, and I, Table D1). Matching on these variables should also help address selection bias stemming from UNMIL's mandate to help deliver humanitarian assistance (Reports C and F, Table D1).

For a similar reason, I match clans on their proximity to the set of UNMIL bases established by December 2004. Establishing a new peacekeeping base poses a significant financial risk because missions lack information on the logistical viability of potential host communities (Blair, 2020). UNMIL may have been more likely to gather information on the viability of host communities in clans nearby the first set of bases it established. Therefore, clans in close proximity to these first bases may have been more likely to house new UNMIL bases in the future. The mission's early operational reports confirm this intuition, detailing how a new base was constructed at Klay Junction following the deployment of reconnaissance teams from the mission's first base Monrovia (Reports C and E, Table D1).<sup>17</sup>

I then focus on factors approximating the local demand for peacekeeping. First, clans are matched on the count of conflict events they experienced between the beginning of the second Liberian civil war in April 1997 and UNMIL's authorization in September 2003, given UNMIL's short-term goal of deescalating wartime violence. Matching clans based on the amount of wartime violence they experienced both follows extant research (Blair, 2019) and is consistent with peacekeepers' known selection into areas where the risk of violence is relatively high (Ruggeri, Dorussen and Gizelis, 2016).

Next, I match clans on their proximity to the capitals of Liberian districts (the country's second order administrative unit). Doing so should help address peacekeepers' selection

<sup>&</sup>lt;sup>17</sup>As the crow flies, Klay is located approximately 40 kilometers away from Monrovia.

into locations where state capacity is relatively high, as a result, new investment is more likely. I calculate the minimum geodesic distance between the centroid of a clan and a district capital using spatial data from the United Nations Office for the Coordination of Humanitarian Affairs.

Finally, I match clans on their average forest cover and proximity to gold deposits. Doing so helps ensure clans in my final sample are comparable in terms of their attractiveness to both UNMIL and foreign concessionaires. Indeed, UNMIL personnel were tasked with helping secure valuable natural resource deposits from armed groups and other non-state actors, and some UNMIL bases were located in very close proximity to future concession areas (see Figure 2).

Table F1 confirms that matching improves covariate balance. My pre-processed sample consists of 7128 observations across 44 different clans.

Data limitations prevent me from matching on other factors that may confound the relationship between peacekeeping and FDI. Three potentially important omissions include the presence of state security forces, formal judicial institutions, and civil society. Rather than viewing each factor as a potential source of bias, my theory positions them along the signaling mechanism through which UN police attract FDI. Indeed, UNMIL police trained and patrolled with the Liberian National Police (LNP) officers to make their presence more credible (Report E, Table D1). UNMIL similarly helped rehabilitate Liberia's correctional system (Report E, Table D1) and restore civil societies' access to remote communities (Report I, Table D1). The credible commitments which existing theory links to investment may have never materialized in Liberia without UNMIL's police force.

#### Simulation-based Sensitivity Analysis

Since data limitations prevent me from perfectly modeling UNMIL's deployment process, I implement a sensitivity analysis which estimates how strong an omitted variable would need to be to overturn my results (Cinelli and Hazlett, 2020). The analysis simulates how an estimated treatment effect would change if an unobserved confound explained "X-percent" more residual variance in the treatment and outcome than does a relevant covariate the researcher specifies. If a result is only sensitive to an unobserved confound that induces

substantially more bias than would omitting a relevant covariate the researcher specifies and, based on theory and contextual knowledge, it is unlikely such a confound exists then the researcher can be more confident that the relationship they have estimated is not spurious.

#### Estimation

I specify the following to estimate the association between subnational deployments of UN-MIL police and the establishment of new natural resource concessions

$$y_{it} = \alpha + \gamma_1 Police_{i,t-1} + \mathbf{X}\boldsymbol{\beta} + \theta_q + t + t^2 + t^3 + \epsilon \tag{1}$$

where  $\gamma_1$  represents the association between the count of UN troops in clan *i* in month t-1and the onset of a new natural resource concession in clan *i* in month *t*;  $\beta$  captures the effects of time-varying clan covariates in X; and  $\theta_q$  are quarter-year fixed effects.

I rely on quarter-year fixed effects to account for time-varying factors that may explain trends in new investment across all clans in Liberia. I also include three time trends and calculate heteroskedastic and autocorrelation consistent standard errors, given the possibility of temporal dependence in my outcome variable (Newey and West, 1987; Carter and Signorino, 2010). As robustness checks related to spatial autocorrelation arising from regional development programs, I follow Bunte et al. (2018) in clustering my standard errors at the county (first-order administrative unit) and district (second-order administrative unit) level.

# Results

I find broad support for my argument: the correlation between UNMIL police and new resource concessions is positive (model (a), Table 1). Increasing the local deployment of UNMIL police by 100 is associated with a 2.86 percentage point increase in the probability of new investment. This result represents a substantial increase in the probability of new FDI in Liberia's extractive sector, given that the maximum probability of new investment occurring in any clan-month was 33% during UNMIL's tenure. At the very least, then,

deploying an additional 100 UN police is associated with a 8.6% increase in probability of new investment.

Let us consider how this result corresponds to realistic shifts in the operational units UN peacekeepers organize into. Police are commonly deployed in "formed police units" (FPUs) that consist of 140 personnel. There were 9 FPUs deployed to Liberia in November 2013, when UNMIL's police force consisted of 1641 officers. Deploying just two of these FPU-sized contingents of police to another clan would be associated with a 8 percentage point increase in the probability of new investment.

The positive association between UNMIL police and FDI holds when I cluster my standard errors at the country and district levels to address potential spatial autocorrelation in the siting of concession areas (model (b) and (c), Table 1). I also re-estimate Equation 1 using logistic regression, since my outcome variable is binary (model (h), Table 1). Doing so does not change the substantive or statistical significance of the association between UN police and FDI.

To relax my initial assumption that firms only reference the local deployment of peacekeepers in the month prior to establishing a new concession area, I include twelve month lags of UNMIL troops and police in my model (model (d), Table 1). Doing so does not change my main result. The association between UN police, lagged by a single month, and new investment remains positive and statistically significant when controlling for UN police and troop deployments one year prior.

It may be that UNMIL's police forces generate credible signals about the future political stability only when they deploy alongside large contingents of peacekeeping troops. Yet the positive relationship between UN police and the onset of new concession holds when I restrict my sample to clan-months wherein a maximum of 150 UN troops (one company) were deployed (model (e), Table 1). Alternatively, the co-deployment of troops may signal to investors that nearby security conditions are deteriorating, rendering the positive association between police and FDI null. I find no evidence in support of this when I interact the count of UNMIL police and troops deployed per clan month (model (f), Table 1). Moreover, the association between UNMIL police and new investment—conditional on there being no co-deployed troops—is positive and statistically significant.

			0.004	0.004				
UN Police <sub><math>t-1</math></sub> (100s)	$0.03^{*}$	0.03*	0.03*	0.03*	$0.04^{*}$	0.02	0.03*	1.31***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.35)
UN Police <sub><math>t-12</math></sub> (100s)				0.00				
				(0.00)				
UN Troops <sub><math>t-1</math></sub> (1000s)	-0.02	$-0.02^{**}$	$-0.02^{*}$	-0.03	$-0.16^{*}$	-0.03	$-0.02^{*}$	-1.03
	(0.01)	(0.01)	(0.01)	(0.02)	(0.06)	(0.02)	(0.01)	(0.79)
UN Troops $12$ (1000s)	( )		( )	0.01		( )	( )	
ert 1100ps <sub>l=12</sub> (10000)				(0.01)				
Police X Troops				(0.01)		0.02		
Tonee X 1100ps						(0.02)		
Warld Darle Drainste	0.00	0.00	0.00	0.00	0.00	(0.03)	0.00	0.02
world Bank Projects	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.03
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.08)
Local $Conflict_{t-1}$	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	$-11.99^{***}$
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.62)
Local Conflict (rolling mean)	-0.01	-0.01	-0.01	-0.03	-0.03	-0.01	-0.03	-1.09
	(0.02)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(4.53)
Timber Sanctions Lifted	-0.01	$-0.01^{*}$	-0.01	$-0.01^{*}$	0.00	-0.01	$-0.01^{*}$	0.46
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.62)
Diamond Sanctions Lifted	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	-0.54
	(0.01)	(0, 00)	(0, 00)	(0,01)	(0.01)	(0.01)	(0, 01)	(0.85)
Adjacent Investment	0.07***	0.07**	0.07**	0.07***	0.05**	0.07***	0.07***	0.88***
Aujacent investment	(0.01)	(0.07)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.20)
A 1:	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.20)
Adjacent investment <sub><math>t-1</math></sub>	-0.00	-0.00	-0.00	-0.00	0.00	-0.00	-0.00	0.04
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.09)
New Investment <sub><math>t-1</math></sub>							0.01	
							(0.02)	
New Investment <sub><math>t-12</math></sub>							0.01	
							(0.01)	
Pre-Deployment Conflict	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.03
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)
Distance to First UNMIL Bases	-0.00	-0.00	-0.00	-0.00	0.00	-0.00	-0.00	-0.01
	(0, 00)	(0, 00)	(0, 00)	(0, 00)	(0, 00)	(0, 00)	(0, 00)	(0.01)
Distance to Nearest District Capital	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.03
Distance to rearest District Capitar	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0.02)
Pro Doplormont Road Dopgity	10.40	10.40	10.40	19.14	2.01	10.00)	12.00	1280.07
r le-Deployment Road Density	-10.49	-10.49	-10.49	-12.14	-2.91	-10.69	-12.20	-1369.07
	(9.22)	(7.18)	(10.41)	(10.15)	(10.03)	(9.29)	(10.08)	(1244.13)
Pre-Deployment Population Density	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Pre-Deployment Nighttime Luminosity	-0.00	-0.00	-0.00	-0.00	-0.01	-0.00	-0.00	0.36
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.83)
Distance to Gold Deposit	-0.00	-0.00	-0.00	-0.00	$-0.00^{**}$	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Average Forest Cover	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ŭ	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Intercent	0.04	0.04	0.04	0.15	0.04	0.04*	0.15	-3 78***
intercept	(0.02)	(0.02)	(0.02)	(0.09)	(0.04)	(0.02)	(0.10)	(0.75)
Time Trends	Voc	Voc	Voc	Voc	Voc	Voc	Voc	Voc
Fired Effects	Vee	Vaa	Vac	Vec	1 CS Vac	Vee	Vac	1 CS
FIXED EJIECTS	res	res	res	res	res	res	res	INO
Unstered SEs	0.24	County	District	0.24	0.15	0.24	0.24	
Aaj. K"	0.24	0.24	0.24	0.24	0.15	0.24	0.24	<b>H</b> 0.0.1
Num. obs.	7084	7084	7084	6600	4206	7084	6600	7084
N Clusters		15	30					
AIC								699.00

 Table 1: UN police are positively associated with the onset of natural resource concessions.

\*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05

*Note:* models (a) through (h) use OLS to estimate the association between UN peacekeepers and the onset of new natural resource concessions per clan-month. Model (h) uses a logistic regression to estimate the same association. To avoid complete separation, quarter-year fixed effects are dropped from model (h). Heterosketastistic and autocorrelation consistent standard errors are specified unless noted otherwise.

I also check whether my results hold when I control for the lagged count of new natural resource concessions. It is possible that foreign firms reference their competitors' behavior when deciding where to site a new FDI project, either because their competitors have access to private information about local political conditions or because they want to avoid crowded markets. Controlling for the count of new natural resource concessions, lagged by a single month and by twelve months, does not affect my main result (model (g), Table 1).

## Unobserved Confounding

The simulation-based sensitivity analysis presented in Cinelli and Hazlett (2020) allows me to formally test how robust my results are to omitted variable bias. Table F2 reports two relevant statistics from the analysis. The first,  $RV_{q=1}$ , describes the amount of residual variance in both UN deployment levels and the onset of new concessions an omitted variable would need to explain to change the sign of my results. The second,  $RV_{q=1,\alpha=0.05}$ , describes the amount of residual variance in my treatment and outcome an omitted variable would need to explain to nullify my results at the conventional level of significance. An unobserved confound would need to explain more than 5.3% of the residual variance in the local deployment of UNMIL police and extractive sector investment to reverse the sign on my main result, and at least 3% of the residual variance to reverse the main result's statistical significance.

How much stronger would an omitted variable need to be, relative to the bias a covariate I specify would induce as an omitted variable, to overturn the positive correlation between UN police and FDI? I benchmark the strength of unobserved confounding against the bias a clan's proximity to the nearest gold deposit would induce. Figure 3 shows that the positive correlation between UN police and FDI I estimate is only sensitive to an omitted variable capable of inducing eight-times more bias than a clan's proximity to gold deposits would induce as an omitted variable.

It is difficult to identify a variable that is capable of inducing this level of bias, exists outside of my battery of covariates, and is not an intermediate outcome linking UN police to FDI. Gold mining operations constitute the bulk of concession agreements established in Liberia, and UNMIL reports reference the mission's operations to monitor the extraction and export of gold. Other observable factors explaining the deployment of peacekeepers and new





(a) Change in estimate given confounding X- (b) Change in *t-statistic* given confounding Xtimes stronger

*Note:* plots generated using the **sensmakr** package in R (Cinelli and Hazlett, 2020). Results displayed for the association of UNMIL police (count) and the onset of new natural resource concessions (0/1). Figure 3a displays how the estimated association between UN police and the onset of new natural resource concessions (displayed as the black triangle, labeled "Unadjusted") would change if an omitted variable were three, six, and nine times more endogenous than a clan's proximity to gold deposits (displayed as red diamonds, labeled "3x gold," "6x gold," and "9x gold"). Figure 3a displays how statistical significance of my main result would change in the presence of similar confounding.

investment, like local levels of development, are included in my model. While data limitations prevent me from measuring other variables that are logically related to the deployment of UN police and investment, my theory attenuates concerns that these unobservables are, in fact, confounders. Absent the deployment of UN police, the presence of state security forces would not credibly signal to foreign firms that the local risk of extortion, expropriation, and criminal violence is low.

This sensitivity analysis supports a stronger, albeit narrower, interpretation of my main result: conditional on there being no omitted variable that can induce eight-times more bias than would omitting clans' proximity to gold deposits, local deployments of UN police increase the probability that foreign firms establish new natural resource concessions.

### Mechanisms

Two observationally equivalent mechanisms may explain why UN police are positively associated with FDI. As I argue above, UNMIL's police may have encouraged extractive sector investment because they generated credible, localized signals about the rule of law. Alternatively, foreign firms may have directly monitored and responded to the capacity building UNMIL's police force undertook.I extend my analysis in three ways to investigate which of these mechanisms receives the greatest empirical support.

First, I test whether UN police negatively correlate with the onset of riots, mob violence, and vigilante violence. Large scale riots and other forms of vigilante violence were among the most significant barriers to restoring the rule of law in Liberia upon UNMIL's deployment (Blair, 2020), and such events disrupt extractive sector operations (Christensen, 2019). If UN police encourages FDI via capacity building, then their local deployment should reduce the kind of political violence shown to deter investment.

I use available conflict event data to investigate whether UN police are negatively associated with riots, mob violence, and vigilante violence. I first measure the onset of each kind of violence per clan-month. Then, after pre-processing my sample of Liberian clans using the same matching strategy I describe above, I re-estimate Equation 1 with the onset of riots, mob violence, and vigilante violence as the outcome variables.

Second, I test whether my main result is driven by the deployment of UN police to areas where the government's rule of law institutions are weak. In these areas, UN police can encourage FDI via the signalling mechanism alone because the capacity building mechanism is not operative by definition. Conversely, UN police can encourage FDI exclusively by capacity building in areas where the government's rule of law institutions are effective. In these areas, local contingents of UN police are less likely to meaningfully shift firms' priors on the rule of law.

I explore whether UN police are more likely to attract FDI in areas where the rule of law is weak using Afrobarometer surveys conducted in Liberia between 2008 and 2015 (BenYishay et al., 2017). I construct four variables that should approximate the government's capacity to uphold the rule of law at the local level. Specifically, I calculate the proportion of households per district who actively fear crime, believe the Liberian government cannot deter crime, and negatively evaluate the Liberian courts and the Liberian National Police based on how corrupt, untrustworthy, and illegitimate they perceive each institution to be.<sup>18</sup> I then merge these data into my matched sample of Liberian clans. Finally, I split my matched sample of clans into high and low subgroups along these proxies for the rule of law and re-estimate Equation 1.

Third, I test whether the association between UN police and FDI varies over different kinds of investment projects. I focus on two bundles of projects: those authorizing firms to begin exploration for natural resources and those authorizing firms to begin extracting natural resources. One key differences between these bundles is their average contract length. Exploration-oriented contracts typically expire after three years with the opportunity for a brief extension, whereas extraction-oriented contracts can last for more than five years with the opportunity for renewal. It seems plausible that foreign firms bidding on exploration-oriented contracts should be more sensitive to the signals UN police generate because their time horizons are comparatively short, while those bidding on extractionoriented contracts should be more concerned about the impacts of UN police's capacity building because their time horizons are comparatively long. A positive association between UN police and exploration-oriented projects would substantiate the signaling mechanism I propose, while a positive association between UN police and extraction-oriented projects would substantiate the capacity building mechanism.

Altogether, I find little evidence that UN police encourage FDI via capacity building. The subnational deployment of UNMIL's police force is not associated with the onset of riots, mob violence, and vigilante violence at the conventional level of significance (Table F3). Moreover, I cannot reject the null hypothesis that UN police and new investment in extraction-oriented projects are unrelated (model (b), Table F4).

I find stronger evidence that UN police encourage FDI via signaling (Figure 4, Table F5). UN police are positively associated with the new FDI in clans where the majority of citizens negatively evaluate the Liberian courts (*est.* = 0.042, *p*-*value* = 0.01) and believe the government of Liberia cannot deter crime (*est.* = 0.037, *p*-*value* = 0.022). The correlation

<sup>&</sup>lt;sup>18</sup>SI section C discusses why I cannot aggregate these data to the clan-level.



Figure 4: UN police encourage investment in areas where citizens' evaluations of the rule of law are poor.

*Note:* all results from OLS regression with heteroskedastic and autocorrelation consistent standard errors. Ninety-five percent confidence intervals are displayed.

between UN police and new FDI in clans where the majority of citizens personally fear of crime is positively signed but falls slightly below the conventional level of statistical significance. Additionally, I find that UN police are positively correlated with new investment in exploration-oriented projects (model (a), Table F4).

That UN police are strongly associated with new FDI specifically in areas where citizens negatively evaluate the courts is especially informative for my argument. Establishing a new natural resource concession almost always involves transferring publicly and/or customarily-held parcels of land to foreign concessionaires. This process can be contentious, sparking disputes stemming from competing systems of land tenure (Kepe and Suah, 2021). The quick resolution of land disputes in venues favoring concessionaires' statutory ownership would be less likely to occur in areas where citizens forum shop because they perceive the courts as biased or ineffective (Winters and Conroy-Krutz, 2021). Deploying UN police should help alleviate this concern and increase foreign firms' willingness to establish natural resource concessions.

# **Discussion & Conclusion**

What explains the subnational allocation of FDI in post-conflict countries? Using data from post-conflict Liberia's extractive sector, this article shows how the local composition of UN peacekeeping forces influences FDI. I find robust evidence that UN peacekeeping police are positively associated with foreign investors establishing new natural resource concessions in Liberia, likely because UN police credibly signal where the rule of law will be enforced locally.

The relationship between UN police and FDI I estimate is likely an upper bound. Extractive sector FDI is particularly vulnerable to political instability. Firms operating natural resource concessions rely on tangible assets that are location specific and do not produce goods for which local demand is inelastic and, consequently, are more likely to draw down during conflict (Mihalache, 2011; Jamison, 2021).

My theory and results should generalize to settings where UN peacekeepers are substitutes for the state. UNMIL's initiatives to re-legitimize the state are characteristic of other multidimensional PKOs (Howard, 2008). For example, UN peacekeepers deployed in Côte d'Ivoire helped monitor post-conflict elections to prevent electoral violence and legitimate the Ivorian state (Smidt, 2020).

My theory and results should also generalize to settings where international peacebuilders believe reforming natural resource management will foster long-term peace and development. The UN links the mismanagement of natural resources to conflict in four other countries that have hosted multidimensional PKOs: Sierra Leone, Côte d'Ivoire, the Central African Republic (CAR), and the Democratic Republic of Congo (DRC). Qualitative data detailing these missions' mandates help substantiate the generalizability of my results. Beevers (2018) shows that international peacebuilders pursued a similar policy of preparing natural resources for FDI in Sierra Leone, as do reports from the peacekeeping mission deployed there between 1999 and 2006 (Reports X and Y, Table D1). UN peacekeepers deployed to CAR help "support [government efforts]...to tackle the illicit exploitation and trafficking networks of natural resources" that "threaten peace and stability" (Report W, p.3, Table D1). The trafficking of natural resources similarly shaped UN peacekeeping operations in Côte d'Ivoire and DRC (Reports H and A.1, Table D1). One potential drawback of this study is that data limitations prevent me from precisely testing whether UN police directly improved the rule of law near concession areas. However, my theory attenuates this concern because it positions a firm's perception of the government's rule of law institutions as an intermediate outcome linking UN peacekeeping personnel to FDI. This perspective follows existing research demonstrating that firms reference observable host country institutions before committing FDI. It also may be more realistic. Foreign firms with limited resources should be more likely to use the local deployment of UN peacekeepers as a heuristic for determining whether the rule of law will be upheld, rather than continuously monitoring local political conditions.

This article makes two contributions. First, it extends existing theory to better incorporate the subnational governance problems foreign firms must navigate when seeking investment in post-conflict states. Second, it adds to a growing literature documenting how UN peacekeeping missions affect multiple dimensions of post-conflict politics. Contemporary peacekeeping missions task their personnel with providing public services, restoring the rule of law, conducting electoral education events, and managing natural resources. To thoroughly evaluate whether UN peacekeepers rebuild peace and restart development, we must consider the full set of activities they undertake when deployed to conflict-affected settings.

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# Supplementary Information

"International Peacekeeping Encourages Foreign Direct Investment: Subnational evidence from Liberia's extractive sector."

# Contents

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### A Description of Concessions Agreements

There are 12 unique types of concessions agreements included in my data. I describe each below, after reviewing publicly-available contracts for concessions in Liberia. Figure A1 visualizes the distribution of concession areas in my sample by their agreement type. When possible, I include specific information on the costs concessionaires would immediately incur after signing the concession agreement. This information is sourced from scanned concessions agreements underlying AidData's Liberia Concessions Geocoded Research Release, Version 1.0.

#### **Agricultural Concession**

Agricultural concessions involve foreign firms leasing prospective agricultural land from the Liberian government. In exchange for the rights to resources on the leased land—e.g., rubber or palm oil—firms pay the government surface rental fees and royalties. Annual rental fees for agricultural concessions can exceed \$1 million USD and are due to the government regardless of concessionaires' use of the land (see agricultural concession authorizing one rubber plantation).

#### Class B Mining License

Class B mining licenses authorize small-scale industrial mining operations, predominantly for rare earth minerals like gold. Concessionaires rent land for mining from the government. Concessionaires also must pay a one-time or annual licensing fee to the government and are required to invest \$50,000 USD in a Liberian bank prior to beginning operations.

#### **Community Forest Management Agreements**

Community Forest Management Agreements (CMFA) are made between foreign firms and a specific community that has acquired the right to develop its land from the Liberian government.

#### **Development Exploration License**

Concessionaires acquire Development Exploration Licenses (DELs) directly from the Liberian government. Concessionaires interested in undertaking large-scale industrial mining operations typically acquire DELs to explore future mining sites. DELs have licensing fees that can cost \$15,000 USD per year and also include flexible surface rental fees that scale up as companies engage in more pilot mining operations in the concession area. The minimum annual surface rental fees for one DEL in my sample is \$273,000 USD.

#### Forest Management Contract

Concessionaires hoping to establish large-scale logging operations (>100,000 hectares) must bid for Forest Management Contracts (FMCs) that the Liberian government manages. To acquire a FMC, foreign firms must submit a large performance bond to the Liberian government and are contractually obligated to invest a minimum sum per hectare of the concession area within a pre-determined time frame, in addition to owing the Liberian government surface rents. These costs can total to approximately \$720,000 USD in a single year (see this FMC).

#### Mineral Development Agreements

Mineral Development Agreements (MDAs) authorize large-scale industrial mining operations. To enter into an MDA with the Liberian government, foreign firms must purchase a class A mining license (at least \$10,000 USD). Firms are also contractually obligated to make minimum investments per hectare of the concession area, in addition to paying the Liberian government surface rents. At minimum, these costs can total around \$70,000 USD for a single year of operation (see MDA between the Liberian government and BHP Billiton (Liberia), Inc.).

#### Mineral Exploration License

The Liberian government grants Mineral Exploration Licenses (MELs) to foreign firms interested in exploring for minerals like diamonds and to conduct limited pilot mining operations. Concessionaires are contractually obligated to make minimum per acre investments in concession areas authorized under a MEL, in addition to paying the Liberian government licensing fees and surface rents that vary based on the level of development within the concession area. For one concession in my sample authorized under an MEL, these annual payments total to approximately \$1.03 million USD.

#### Private Use Permit Contract

Private land owners can enter into logging agreements with foreign firms after they have acquired a Private Use Permit contract (PUP) from the Liberian government. Foreign firms must submit a performance bond to the Liberian government—sometimes costing \$50,000 USD—prior to entering into a logging agreement with a land owner who has obtained a PUP.

#### **Prospecting License**

Firms looking to establish small-scale or artisanal mining operations might acquire a Prospecting License from the Liberian government, for a fee, to explore potential concession areas.

#### Quarry License

Quarry Licenses authorize foreign firms to operate quarries, and be acquired from the Liberian government for a fee.

#### **Reconnaissance License**

Firms looking to mining operations might acquire a Reconnaissance License from the Liberian government, for a fee, to explore potential concession areas. Reconnaissance Licenses do not authorize pilot mining operations.

#### **Timber Sales Contract**

Concessionaires interested in conducting small-scale logging operations (>5,000 hectares) may acquire Timber Sales Contracts (TSCs) from the Liberian government. To do so, con-





*Note:* data compiled from AidData Liberia Concessions Geocoded Research Release, version 1.0 (Bunte et al., 2018). I exclude resource concessions that are missing verifiable start dates (n=138).

cessionaires must post a performance, demonstrate sufficient access to capital and equipment (e.g., bulldozers), and pay the government surface rental fees. For some TSCs, these costs can total up to \$75,000 USD in a single year (see this contract).

## **B** UN Peacekeeping Deployment

The process of deploying UN peacekeepers proceeds in two stages. First, UN member countries voluntarily contribute different types of peacekeeping personnel upon the establishment of new peacekeeping. Member states are reimbursed up to as much as \$1,428 USD per month for each uniformed personnel they contribute. As much loosely suggests that UN member states may rely on their voluntary personnel contributions of personnel to recover their mandated financial commitments to UN Peacekeeping.

After UN member states determine their voluntary contributions, the UN Security Council (UNSC) oversees how personnel are allocated to individual peacekeeping operations. The composition of personnel allocated to each mission reflects each mission's unique needs and operational constraints.

Mission-level allocations of personnel are initially determined at the outset of a new peacekeeping mission. For instance, the UNSC determined approximately 11,800 peacekeep-

ers (10,000 troops and 1,800 police) were to be deployed to the newly formed the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA) in 2014, following recommendations made by military observers the UN prospectively deploys military observers to countries its anticipates will request a peacekeeping mission.<sup>19</sup> The UNSC subsequently called upon UN member states "to provide troops and police with adequate capabilities and equipment in order to enhance the capacity of MINUSCA to operate and discharge its responsibilities effectively."<sup>20</sup> The UNSC then regularly reviews mission's reports to the Secretary General to determine whether a reallocation of personnel to is required. For example, the UNSC authorized the additional deployment of "750 military personnel, 280 police personnel and 20 corrections officers for MINUSCA" following a formal request by the mission to increase its size.<sup>21</sup>

The second stage of UN peacekeeping deployments occur subnationally. Each mission can autonomously decide how to deploy personnel within its operating area, so long as the deployment fulfills the mission's specific mandate. For example, MINUSCA deployed police to Bangui prior to the full deployment of the mission's personnel to "to support the establishment of the MINUSCA police component."<sup>22</sup> MINUSCA leadership also requested special peacekeeping personnel from the UNSC at the outset of its tenure to deploy for specific tasks, like "the protection of key political stakeholders in Bagui."<sup>23</sup> Country-level factors constraining the establishment of UN peacekeeping bases are discussed in the main text.

## C Data Limitations for Subgroup Analyses

Limitations in the spatial granularity of Afrobarometer survey responses in Liberia prevent me from aggregating these measures up to the clan-level. Afrobarometer survey responses are assigned a precision code that allow users to identify the most specific administrative unit in which a respondent resides. These codes are defined as below, according to the

<sup>&</sup>lt;sup>19</sup>See Report of the Secretary-General on the Central African Republic submitted pursuant to paragraph 48 of Security Council resolution 2127 (2013) from March 2014.

 $<sup>^{20} \</sup>rm https://minusca.unmissions.org/sites/default/files/n1429581.pdf$ 

 $<sup>^{21} \</sup>rm https://minusca.unmissions.org/sites/default/files/n1508624.pdf; April-2015 \ SecGen \ reportion of the state of$ 

 $<sup>^{22}\</sup>mathrm{See}$  August 2014 SecGen report, line 63.

 $<sup>^{23}</sup>$ See August 2014 SecGen report, line 65.

organization that geocodes Afrobarometer survey responses (see this report for additional information).

- Precision Code 1: "The coordinates correspond to an exact location, such as a populated place or a physical structure such as a school or health center. This code may also used for locations that join other locations to create a line such as a road, power transmission line or railroad."
- Precision Code 2: "The location is mentioned in the source as being "near", in the "area" of, or up to 25 km away from an exact location. The coordinates refer to that adjacent location."
- Precision Code 3: "The location is, or is analogous to, a second-order administrative division (ADM2), such as a district, municipality or commune."
- Precision Code 4: "The location is, or is analogous to, a first-order administrative division (ADM1), such as a province, state or governorate."
- Precision Code 5: "The location can only be related to estimated coordinates (e.g. between populated places; along rivers, roads and borders; or more than 25 km away from a specific location). Also used large topographical features (greater than ADM1) such as National Parks which spans across several administrative boundaries."
- Precision Code 6: "The location can only be related to an independent political entity, but is expected to be disbursed locally. This includes aid that is intended for countrywide projects as well as larger areas that cannot be geo-referenced at a more precise level."
- Precision Code 7: "The location is unclear. The country coordinates are entered to reflect that subnational information is unavailable."

Of the 3597 household surveys Afrobarometer enumerated in Liberia between 2008 and 2015, 3509 are geocoded with enough precision to attribute their location to a specific Liberian district. By comparison, only 1520 are geocoded with enough precision to attribute

their location to a specific Liberian clan. Thus, relying on clan-level estimates of citizens' perceptions of the rule of law would have resulted in dropping nearly half of the available Afrobarometer responses from my analyses.

Two important assumptions are implicit to this measurement strategy, and I encourage readers to interpret the subgroup analyses I conduct as exploratory in light of these assumptions. First, my measurement strategy assumes that citizens' perceptions of the rule of law in 2008, 2012, and 2015 are valid proxies for their perceptions of the rule of law in the years spanning each wave of the Afrobarometer survey. Second, my measurement strategy assumes that the proportion of respondents per district who perceive the rule of law to be weak closely approximates the proportion of respondents per clan who perceive the rule of law to be weak.

There are compelling reasons to believe that these assumptions are not entirely unreasonable. Citizens who recently witnessed the government repeatedly fail to prevent widespread violence may have perceptions of the rule of law that change slowly over time, such that a respondent's belief about the trustworthiness of the Liberian National Police is relatively stable between 2008 and 2009, and so on. Moreover, it is plausible that district-level estimates of the rule of law closely approximate similar estimates taken a the clan-level. Liberia's judicial system is organized at the county-level, such that citizens residing within a county have similar perceptions of the Liberian courts, irrespective of their clan of residence.

# D Referenced United Nations Peacekeeping Reports

Document Label	UN Document Number	Publication Date	Mission
А	S/2003/321	Mar-2003	UNAMSIL
В	S/RES/1509	Sep-2003	UNMIL
С	S/2003/1175	Sep-2003	UNMIL
D	S/2004/228	Mar-2004	UNMIL
Ε	S/2004/229	Mar-2004	UNMIL
F	S/2005/560	Sep-2005	UNMIL
G	S/2005/764	Dec-2005	UNMIL
Н	S/RES/1643	Dec-2005	UNOCI
Ι	S/2006/159	Mar-2006	UNMIL
J	S/2006/743	Sep-2006	UNMIL
Κ	S/2006/958	Dec-2006	UNMIL
L	S/2007/151	Mar-2007	UNMIL
М	S/2007/479	Aug-2007	UNMIL
Ν	S/2008/183	Mar-2008	UNMIL
0	S/2008/553	Aug-2008	UNMIL
Р	S/2009/86	Feb-2009	UNMIL
Q	S/2009/299	Jun-2009	UNMIL
R	S/2009/411	Aug-2009	UNMIL
S	S/2011/72	Feb-2011	UNMIL
Т	S/2011/497	Aug-2011	UNMIL
U	S/2013/124	Feb-2013	UNMIL
V	S/2014/123	Feb-2014	UNMIL
W	S/RES/2217	Apr-2015	MINUSCA
Х	S/2015/620	Aug-2015	UNMIL
Υ	S/2016/169	Feb-2016	UNMIL
Ζ	Ref. 2016.10	2016	-
A.1	S/RES/2502	Dec-2019	MONUSCO
B.1	Ref. 2020.01	Feb-2020	-

# Table D1: Report List

# **E** Additional Figures

## Figure E1: Largest Deployments of UNMIL Peacekeeping Police outside of Monrovia



*Note:* data compiled from the *RADPKO* dataset (Hunnicutt and Nomikos, 2020) and are aggregated per base per month. Each facet represents an individual peacekeeping base. The 9 bases displayed are those located outside of Liberia's capital city of Monrovia that also housed the highest number of UNMIL peacekeeping police per month, on average, over UNMIL's tenure.

Figure E2: Monthly Total of Peacekeepers Deployed to UNMIL, per clan



*Note:* data compiled from the *RADPKO* dataset (Hunnicutt and Nomikos, 2020) and are aggregated to the clan-level (Liberia's third-order administrative unit). Clans that never contain UNMIL personnel over the mission's tenure are not displayed. Counts of military observers are excluded.



Figure E3: Distribution of New Resource Concessions per Clan, 2004-2018

*Note:* data compiled from AidData Liberia Concessions Geocoded Research Release, version 1.0 (Bunte et al., 2018). I exclude resource concessions that are missing verifiable start dates (n=138).



Figure E4: Distribution of Active Resource Concessions per Clan, 2004-2018

*Note:* data compiled from AidData Liberia Concessions Geocoded Research Release, version 1.0 (Bunte et al., 2018). I exclude resource concessions that are missing verifiable start dates (n=138).



Figure E5: UNMIL Deployment, December 2005

Note: company-sized units are indicated by a single, vertical line above each deployment flag. For example, River Cess contains one company of UNMIL personnel from Ethiopia.





Annex II

United Nations Mission in Liberia: deployment as at July 2013

Note: forward police units are indicated by the "FPU" flags attached to active peacekeeping bases. FPUs are found at the following bases: Monrovia, Tubmanburg, Buchanan, Gbarnga, Sagleipie, and Greenville. July 2013 base locations are used to infer the location of personnel as of November 2013 (see Hunnicutt and Nomikos (2020) for additional information).

# F Additional Tables

Variable	Diff.Un	Diff.Adj	V.Ratio.Un	V.Ratio.Adj
Pre-UNMIL Conflict	0.46	-0.00	27.52	1.00
Distance to 2004 Bases	-1.17	-0.00	0.54	1.00
Distance to Nearest District Capital	-0.57	-0.00	0.59	1.00
Road Density	-0.07	-0.00	0.61	1.00
Population Density	0.21	-0.00	25.98	1.00
Nighttime Lights	0.22	-0.00	72.28	1.00
Distance to Nearest Gold Deposit	0.06	0.00	1.10	1.00
ESA Forest Cover	-0.09	-0.00	0.81	1.00

Table F1: Covariate Balance, Matching

Note: matched sample formed using coarsened exact matching.

## Table F2: Omitted Variable Bias Sensitivity Analysis

Outcome: New Concessions (0/1)

Treatment	Est.	Std. Error	t-value	$RV_{q=1}$	$RV_{q=1,\alpha=0.05}$
UN Police $(t-1)$	0.02863	0.00631	4.53612	0.05273	0.03029

Note: Higher values of  $RV_{q=1}$  and  $RV_{q=1,\alpha=0.05}$  imply that the observed treatment effect is more robust to omitted variable bias.

**Table F3:** UN police are not associated with the onset of riots, mob violence, or vigilante violence.

	DV: Riots $(0/1)$	DV: Mob Violence $(0/1)$	DV: Vigilante Violence $(0/1)$
	(a)	(b)	(c)
UN Police <sub><math>t-1</math></sub> (100s)	-0.00	0.00	-0.00
	(0.01)	(0.00)	(0.00)
UN Troops <sub><math>t-1</math></sub> (1000s)	0.01	-0.00	0.00
	(0.01)	(0.00)	(0.00)
Pre-Deployment Conflict	0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
Distance to First UNMIL Bases	$-0.00^{*}$	$-0.00^{*}$	-0.00
	(0.00)	(0.00)	(0.00)
Distance to Nearest District Capital	$-0.00^{*}$	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
Adjacent Investment	-0.00	-0.00	0.00
	(0.00)	(0.00)	(0.00)
Adjacent Investment <sub><math>t-1</math></sub>	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Pre-Deployment Road Density	-2.61	-0.30	-5.62
	(9.37)	(6.48)	(5.76)
Pre-Deployment Population Density	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Pre-Deployment Nighttime Luminosity	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.00)
Distance to Gold Deposit	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)
Average Forest Cover	0.00	0.00	-0.00
	(0.00)	(0.00)	(0.00)
Timber Sanctions Lifted	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Diamond Sanctions Lifted	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)
Local $Conflict_{t-1}$	-0.02	-0.02	-0.01
	(0.01)	(0.01)	(0.01)
Local Conflict (rolling mean)	0.02	0.07	0.07
	(0.08)	(0.07)	(0.07)
Intercept	$0.02^{*}$	0.01	0.01
	(0.01)	(0.01)	(0.00)
Time Trends	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes
Adj. $\mathbb{R}^2$	0.01	0.01	0.02
Num. obs.	7084	7084	7084

\*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05

Note: models (a) through (c) use OLS to estimate the association between UN peacekeepers and the onset of riots/mob violence/vigilante violence per clan-month. Heterosketastistic and autocorrelation consistent standard errors are specified unless noted otherwise.

	Outcome: New Exploration $(0/1)$	Outcome: New Extraction $(0/1)$
	Model 1	Model 2
UN Police <sub><math>t-1</math></sub> (100s)	$0.02^{*}$	0.00
	(0.01)	(0.01)
UN Troops <sub><math>t-1</math></sub> (1000s)	-0.01	-0.01
	(0.01)	(0.01)
Pre-Deployment Conflict	-0.00	-0.00
	(0.00)	(0.00)
Distance to First UNMIL Bases	0.00	$-0.00^{*}$
	(0.00)	(0.00)
Distance to Nearest District Capital	-0.00	-0.00
	(0.00)	(0.00)
Adjacent Investment	$0.05^{***}$	0.03**
	(0.01)	(0.01)
Adjacent Investment <sub><math>t-1</math></sub>	-0.00	-0.00
	(0.00)	(0.00)
Pre-Deployment Road Density	-2.09	-8.03
	(8.51)	(6.73)
Pre-Deployment Population Density	0.00	-0.00
	(0.00)	(0.00)
Pre-Deployment Nighttime Luminosity	-0.01	0.01
	(0.01)	(0.01)
Distance to Gold Deposit	-0.00	-0.00
	(0.00)	(0.00)
Average Forest Cover	0.00	0.00
	(0.00)	(0.00)
Timber Sanctions Lifted	-0.01	-0.00
	(0.00)	(0.00)
Diamond Sanctions Lifted	-0.00	0.00
	(0.01)	(0.00)
Local $Conflict_{t-1}$	-0.00	-0.00
	(0.00)	(0.00)
Local Conflict (rolling mean)	-0.01	-0.01
	(0.02)	(0.01)
World Bank Projects	-0.00	-0.00
	(0.00)	(0.00)
Intercept	0.03	0.00
	(0.02)	(0.01)
Time Trends	Yes	Yes
Fixed Effects	Yes	Yes
Adj. $\mathbb{R}^2$	0.17	0.10
Num. obs.	7084	7084

**Table F4:** UN police are positively associated with new investments in exploration-orientedprojects but not extraction-oriented projects.

\*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05

*Note:* models (a) and (b) use OLS to estimate the association between UN police and the onset of foreign investment in exploration-oriented projects and extraction-oriented projects per clan-month, respectively. Heterosketastistic and autocorrelation consistent standard errors are specified unless noted otherwise.

DV: New Resource Concession (0/1)								
	Courts E	valuation <sup>1</sup>	LNP Evaluation <sup>2</sup>		Fear of Crime <sup>3</sup>		Gov't Reduces Crime <sup>4</sup>	
	Low	High	Low	High	Low	High	Low	High
UN Police $_{t-1}$	$0.042^{*}$	0.001	0.028	0.024	0.019	$0.033^{+}$	0.037*	0.012
	(0.017)	(0.012)	(0.018)	(0.018)	(0.016)	(0.02)	(0.016)	(0.019)
Fixed-Effects?	Qtr-Yr	Qtr-Yr	Qtr-Yr	Qtr-Yr	Qtr-Yr	Qtr-Yr	Qtr-Yr	Qtr-Yr
Covariates?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ν	3864	3220	3542	3542	3542	3542	3542	3542

#### Table F5: High/Low Rule of Law Subgroup Results

Note: + p< 0.1; \* p< 0.05; \*\* p< 0.01; \*\*\* p< 0.001

<sup>1</sup>Court Evaluation: measures whether Afrobarometer respondents positively evaluated the Liberian courts based on their beliefs about the courts' corruptness, legitimacy, and trustworthiness. The low subgroup contains clans in districts where fewer respondents positively evaluated the courts, on average. The high subgroup contains clans in districts where more respondents positively evaluated the courts, on average.

<sup>2</sup>LNP Evaluation: measures whether Afrobarometer respondents positively evaluated the Liberian National Police (LNP) based on their about beliefs the LNP's corruptness, legitimacy, and trustworthiness. The low subgroup contains clans in districts where fewer respondents positively evaluated the LNP, on average. The high subgroup contains clans in districts where more respondents positively evaluated the LNP, on average.

<sup>3</sup>Fear of Crime: measures whether Afrobarometer respondents personally feared crime in their own home. The low subgroup contains clans in districts where fewer respondents personally feared crime, on average. The high subgroup contains clans in districts where more respondents personally feared crime, on average.

<sup>4</sup> Gov't Reduces Crime: measures whether Afrobarometer respondents believe that the government can reduce crime. The low subgroup contains clans in districts where fewer respondents believe the government can reduce crime, on average. The high subgroup contains clans in districts where more respondents believe the government can reduce crime, on average.