DISCUSSION PAPER SERIES

DP15527

SECURITY TRANSITIONS

Thiemo Fetzer, Oliver Vanden Eynde, Pedro CL Souza and Austin Wright

DEVELOPMENT ECONOMICS

ISSN 0265-8003

SECURITY TRANSITIONS

Thiemo Fetzer, Oliver Vanden Eynde, Pedro CL Souza and Austin Wright

Discussion Paper DP15527
Published 07 December 2020
Submitted 07 December 2020

Centre for Economic Policy Research
33 Great Sutton Street, London EC1V 0DX, UK
Tel: +44 (0)20 7183 8801
www.cepr.org

SECURITY TRANSITIONS

Abstract

How do foreign powers disengage from a conflict? We study this issue by examining the recent, large-scale security transition from international troops to local forces in the ongoing civil conflict in Afghanistan. We construct a new dataset that combines information on this transition process with declassified conflict out- comes and previously unreleased quarterly survey data of residents' perceptions of local security. Our empirical design leverages the staggered roll-out of the transition, and employs a novel instrumental variables approach to estimate the impact. We find a significant, sharp, and timely decline of insurgent violence in the initial phase – the security transfer to Afghan forces; we find that this is followed by a significant surge in violence in the second phase – the actual physical withdrawal of foreign troops. We argue that this pattern is consistent with a signaling model, in which the insurgents reduce violence strategically to facilitate the foreign military withdrawal to capitalize on the reduced foreign military presence afterwards. Our findings clarify the destabilizing consequences of withdrawal in one of the costliest conflicts in modern history, and yield potentially actionable insights for designing future security transitions.

JEL Classification: D72, D74, L23

Keywords: counterinsurgency, Civil conflict, Public goods provision

Thiemo Fetzer - thiemo.fetzer@gmail.com
University of Warwick and CEPR

Oliver Vanden Eynde - oliver.vanden.eynde@ens.fr
Paris School of Economics, CNRS and CEPR

Pedro CL Souza - pedro.souza@warwick.ac.uk
University of Warwick

Austin Wright - austin.l.wright@gmail.com
Harris School of Public Policy - University of Chicago

Security Transitions*

Thiemo Fetzer† Pedro CL Souza‡ Oliver Vanden Eynde§
Austin L. Wright¶

December 4, 2020

Abstract

How do foreign powers disengage from a conflict? We study this issue by examining the recent, large-scale security transition from international troops to local forces in the ongoing civil conflict in Afghanistan. We construct a new dataset that combines information on this transition process with declassified conflict outcomes and previously unreleased quarterly survey data of residents' perceptions of local security. Our empirical design leverages the staggered roll-out of the transition, and employs a novel instrumental variables approach to estimate the impact. We find a significant, sharp, and timely decline of insurgent violence in the initial phase – the security transfer to Afghan forces; we find that this is followed by a significant surge in violence in the second phase – the actual physical withdrawal of foreign troops. We argue that this pattern is consistent with a signaling model, in which the insurgents reduce violence strategically to facilitate the foreign military withdrawal to capitalize on the reduced foreign military presence afterwards. Our findings clarify the destabilizing consequences of withdrawal in one of the costliest conflicts in modern history, and yield potentially actionable insights for designing future security transitions.

Keywords: Counterinsurgency, Civil Conflict, Public Goods Provision
JEL Classification: D72, D74, L23

*We thank Gani Aldashev, Leonardo Arriola, Eli Berman, Ethan Bueno de Mesquita, Nathan J. Canen, Wioletta Dziuda, James Fearon, Anthony Fowler, Massimo Morelli, Hannes Mueller, Gerard Padro, Christopher Price, Jacob Shapiro, Mathias Thoenig, Juan Vargas, Daniel Weggeland (SIGAR) and audiences at the Chicago Harris Political Economy, ESOC Annual Conference, University of Warwick, IAE Barcelona Workshop on Prediction for Prevention, HiCN conference, CREST Political Economy Workshop, Labex OSE Aussois Days, Durham University, University of Manchester, Toulouse School of Economics, UZH, APSA, and NBER. Manh Duc Nguyen provided excellent research assistance. Support from the Pearson Institute for the Study and Resolution of Conflicts, ANR grant COOPCONFLICT, and EUR grant ANR-17-EURE-0001 is gratefully acknowledged. We thank Phil Eles, ANQAR technical lead at NATO, for granting access to the platform and providing technical feedback. Any errors remain our own.

†Department of Economics, University of Warwick. Email: t.fetzer@warwick.ac.uk.

‡Department of Economics, University of Warwick. Email: pedro.souza@warwick.ac.uk.

§Paris School of Economics and CNRS. Email: oliver.vanden.eynde@ens.fr.

¶Harris School of Public Policy, University of Chicago. Email: austinlw@uchicago.edu.

1 Introduction

Foreign military occupations typically end with a security transition, in which international forces transfer military and police powers to local allies. Such foreign-to-local security transitions are difficult to manage (Lake, 2016). This is due to the likely survival, in one form or another, of anti-government elements that triggered the foreign military intervention. The matter of who gains or loses power at the end of the eventual security transition may have significant short- and long-run consequences for economic and political development. Yet surprisingly little is known about the conflict dynamics of countries experiencing a foreign-to-local security transition. Our research addresses this issue by conducting a microlevel study of the impact of the large-scale security transition that marked the end of Operation Enduring Freedom in Afghanistan – the long-running military campaign of the North American Treaty Organization (NATO).

Since 1960, at least 115 foreign military occupations have ended (Collard-Wexler, 2013) (see Online Appendix Figure A1). A substantial percentage of these interventions involved a security transition with the withdrawal of troops and redeployment of weaponry to local allies. With a large number of military occupations active around the world, security transitions are an important economic and policy issue. Even though the historical record is riddled with security transitions, nearly all microlevel empirical research on counterinsurgency focuses on understanding the economic and political drivers that explain how military interventions *begin*, and how conflict strategies and war fighting tactics evolve *during* an ongoing campaign (Berman and Matanock, 2015). By contrast, the security transitions that mark the *end* foreign military occupations have received less attention. Empirical work on this topic has naturally been constrained by the lack of consistent conflict data during the transition period, particularly for unsuccessful transitions. Our paper overcomes this long-standing constraint by leveraging unique, rich microlevel data collected continuously during the transition process in Afghanistan; these data enable us to address the knowledge gap around exit strategies after foreign interventions.

Conflict patterns during and after the security transitions that mark the end of a foreign intervention or occupation are theoretically ambiguous. A security transition may shift provision of policing and formal military operations from well-trained and equipped foreign fighters to unseasoned, local forces armed with outdated technologies, or equipment with which they are unfamiliar. Even if local fighters are capable, they may lack legitimacy, inflict unintended harm on civilians, or deliberately discriminate against ethnic rivals – undermining economic welfare and damaging public confidence in the quality and stability of host-nation institutions. Local forces might also transfer weaponry and other war fighting capital to unregulated paramilitary groups (Dube and Naidu, 2015). Under these conditions, insurgents are likely to increase their operations, and they may consolidate their control over previously contested areas. Furthermore, insurgents may directly and strategically respond to plans of foreign forces to withdraw troops by changing their underlying tactics and targets (Bueno de Mesquita, 2013; Wright, 2016; Vanden Eynde, 2018). Security transitions may be poorly coordinated between foreign and local forces, leading to political and tactical disorder, and further enhancing tensions. On the other hand, local forces might be better able to integrate with communities and to extract information from non-combatants about insurgent operations (Lyall et al., 2015). Local forces may have greater knowledge than foreign soldiers about the human terrain and difficulties motivating violence against conationals or coethnics; this understanding could lead to reduced insurgent activity and increased counterinsurgent effectiveness. Importantly, there is no existing empirical evidence on the relative significance of these different mechanisms in the context of security transitions.

To study how security transitions from foreign to local forces influence insurgent activity and counterinsurgent effectiveness, we examine the large-scale transfer of policing and military power from the International Security Assistance Force (ISAF) to host nation forces in Afghanistan at the end of Operation Enduring Freedom. In 2001, international forces displaced the incumbent regime, and assisted in the installation of an ostensibly democratic government. During the occupation foreign forces, coordinated under the auspices of NATO, helped train and equip local police and military forces. Planning for the transition of security provision from ISAF to Afghan forces began as early as 2010, and was formally announced in 2011. The transition was staggered, and coordinated around administrative districts. Over three years, and five transition tranches, Afghanistan's districts were transferred from ISAF to Afghan control.

We estimate the impact of the security transition on conflict dynamics using exceptionally granular data, which allow us to overcome a core constraint that has hampered quantitative studies of security transitions so far. Since the start of major ISAF operations, a system to collect comprehensive conflict data from ISAF and host-nation forces was set up to track significant activities (SIGACTS). These geotagged and time-stamped event data document dozens of different types of insurgent and security force operations – representing the most complete catalog of conflict activity during Operation Enduring Freedom currently available (Shaver and Wright, 2016). We secured access to these data through formal declassification channels. We then combined these observational data with microlevel survey data collected by NATO (using local contractors) through the Afghanistan National Quarterly Assessment Research (ANQAR) platform. We obtained restricted access to the complete survey records of around 370,000 individual respondents across dozens of quarterly waves from 2008 to 2016. These surveys include questions measuring perceptions of security conditions, the extent of local security provision, and perceptions of territorial control. To the best of our knowledge, this is the first conflict where detailed combat records and high frequency survey data can be combined to study a security transition from foreign to local forces. Using these data in tandem allows us to cross-validate our findings and to distinguish between potential mechanisms.[1]

Our empirical analysis sheds light on the two main phases of the security transition. The first phase is the onset of the transition, marked by a sequence of public announcements detailing where and when security responsibility is to be handed over to local forces. The second phase is the actual physical withdrawal and closure of military bases hosting NATO troops. To estimate the effect of the onset of the security transition, we use a difference-in-differences approach. We exploit the staggered schedule of transition announcements that occurred across five tranches. This allows

[1] Existing work rarely combines observational and survey data on conflicts; Gould and Klor (2010) and Jaeger et al. (2015) are notable exceptions. Studying both observational data on conflict events and survey data on security perceptions side by side, we find consistent patterns across both types of data.

us to pool evidence from each of the tranches to study the onset and aftermath of the security transition on conflict outcomes by comparing localities where the Afghan National Security Forces (ANSF) took over security to those where ISAF was still in charge. We examine security levels in districts before and after the security transfer. The geographic precision of our conflict data enables us to employ a high-resolution, spatial-matching design as an alternative to our district-level analysis. Our results for this first transfer phase show that the local announcement of the security transition schedule led to a short-term decline in local violence. This pattern holds both for conflict measures that are drawn from the SIGACTS database as well for those that are taken from ANQAR survey instruments measuring the security perceptions of the local population. This improvement in security outcomes appears to have gone hand in hand with a substantial upward shift in civilian perceptions of the efficacy of local security forces.

Our second empirical exercise focuses on the physical withdrawal of NATO troops. Using a newly constructed dataset of individual base closures and handovers, we employ an instrumental variables strategy, exploiting operational and logistical constraints of the troop withdrawal. Specifically, we exploit cross-sectional variation in the travel distance between individual districts and the ten major logistical hubs that had the military-grade airports required to accommodate the cargo airplanes that transported arms and troops out of the country. This approach helps us to address concerns about the endogeneity of the sequencing of base closures across different regions. We address potential violations of the exclusion restriction directly by accounting for the correlation between logistical constraints and other measures of population and market proximity. Our findings for this second phase show that violence significantly surged, and residents' perceptions of security plummeted after the departure of international forces. Overall, the pattern that emerges suggests that the security handover is associated with an improvement in the security situation, while the physical withdrawal of NATO troops is marked by a dramatic worsening of security.

This pattern is consistent across observational military records of combat activity and civilian sentiment, and it is robust to a number of alternative model specifications. We pay particular attention to violations of the non-interference assumption inherent in designs in which spatial spillovers or displacement effects are possible. Rather than invoking conventional spatial models that require the researcher to pre-specify the extent to which conflict processes interact across space, we leverage the work by de Paula et al. (2019). We adapt their approach to the specific issue at hand: learning the pattern of spatial spillovers of conflict, and then using that information to directly control for the spillovers.

We investigate two plausible mechanisms empirically: withdrawal of foreign targets, and tactical complementarities. A reduced foreign troop presence and transition to local forces could have weakened Taliban mobilization due to a change in target type. While consistent with violence reductions after the first phase, this mechanism cannot explain the subsequent increase in Taliban attacks after withdrawal. The subsequent increase in violence is also inconsistent with the possibility that foreign troops were no longer needed to maintain stability, or the possibility that local forces were adequately prepared to operate independently. On the other hand, the combination of local operational command and indirect ISAF support could have produced significant security gains that were then reversed with the physical withdrawal of foreign troops; a range of empirical tests, however, shows no evidence of such complementarities between ISAF and the ANSF.

Instead, we argue that the main results are consistent with a third mechanism: "lying low." That is, insurgents strategically and temporarily draw down their forces, in effect lying low until after counterinsurgents have sufficiently raised the cost of local re-intervention. While our primary contribution is to provide a first empirical record of an important security transition, we use a simple model to situate the observed patterns. NATO cannot directly observe the local capacity of the Taliban relative to the ANSF; thus, NATO bases its decision to physically withdraw troops on observed levels of violence during the transition period. A high-capacity Taliban can then decide to pursue a strategy of lying low as part of a pooling equilibrium, which facilitates the withdrawal of ISAF, and increases the ability of the Taliban to inflict violence when the transition is completed.

We contribute to several strands of literature in economics and political science. Prior work in economics has investigated the causes of civil conflict (Fearon and

Laitin, 2003; Collier and Hoeffler, 2004; Bazzi and Blattman, 2014; Berman et al., 2017; Limodio, 2019; Manacorda and Tesei, 2020), and examined development interventions that occur during ongoing insurgencies (Berman et al., 2011; Fetzer, 2020; Beath et al., 2013; Crost and Johnston, 2014; Sexton, 2016). Seminal theoretical work has highlighted the role of state capacity in shaping conflict dynamics, including the end of war (Wittman, 1979; Werner, 1999; Besley, Timothy; Persson et al., 2010; Padró i Miquel and Yared, 2012; Powell, 2013; Gennaioli and Voth, 2015; Esteban et al., 2015). Other studies have focused on war fighting directly, exploring the effectiveness of various government tactics (Lyall, 2009; Dell and Querubin, 2018) and the use of violence by insurgents (König et al., 2017; Condra et al., 2018). We advance this literature with the first exploration of conflict dynamics during a large-scale, foreign-to-local security transition.

Our study also yields potentially actionable insights regarding one of the costliest conflicts in modern history. Since 2001, the United States alone has invested $1.07 trillion in combat operations, economic assistance, and soldier healthcare – all directly related to the war in Afghanistan. The human toll of the war was also substantial; by 2018, ISAF had lost 3,547 soldiers in combat operations, and at least 31,000 civilian deaths had also been documented. The security transition marked a turning point in the conflict, and it has been the subject of fierce political debates at all its stages – when it was announced, when it was implemented, and after it had been completed. The evidence we present demonstrates how the withdrawal of foreign forces influenced the stability of local political actors and institutions. It suggests how future transitions, including other NATO troop drawdowns, might be managed more effectively – addressing a significant gap in our understanding of a topic of immense economic and policy significance. More broadly, this study reinforces the importance of data collection and dissemination during and after armed conflict. Rigorously evaluating government interventions, especially force transitions, requires careful, ongoing measurement of local conditions and a commitment to making data, like the combat and survey records we study here, available for research.

The paper proceeds as follows: Section 2 provides background context on the security transition in Afghanistan, and describes the data used in this investigation.

Section 3 reviews the empirical strategies we employ. Section 4 presents the main results. Section 5 discusses the mechanisms that could explain our findings, providing a simple conceptual framework as well as discussing the external validity. Section 6 concludes.

2 Context and Data

2.1 Timing of the security transition

The war in Afghanistan led a large number of NATO countries to participate in ground operations under the umbrella of ISAF. According to United Nations Security Council Resolution 1386, ISAF's role was explicitly to assist the Afghan Interim Authority in rebuilding government institutions and providing security. From its inception, the mission was conceived as a temporary intervention. First steps toward a security transition were taken in November 2009, when then-President Hamid Karzai announced the desire to see a complete transition by the end of 2014. The United States subsequently announced that the transition process would begin in 2011. In July 2010, the Joint Afghan-NATO Inteqal Board (JANIB) was established to implement the transition process. JANIB selected a first tranche of districts for which the ANSF took over security, and President Karzai announced these districts in March 2011. The process was completed in five tranches, with an official transition ceremony to mark the completion of the transfer at the end of 2014. These events are depicted on a timeline in Figure 1. The official *transfer of security responsibility* is the first phase of the broader transition process, with *ISAF base closures* and the ultimate physical withdrawal of ISAF troops as the second phase. The next subsections discuss these two transition phases in detail.

2.2 Security transfer: assignment to transition tranches

In November 2010, JANIB convened for the first time. Under the leadership of Dr. Ashraf Ghani (appointed by President Karzai as the Chairman of the Afghan Transition Coordination Commission) and co-chaired by ISAF Commander General David Petraeus and NATO representatives, the JANIB confirmed the 2011-2014 transition timeline. It emphasized stability and self-sufficiency as goals of transition. In

February 2011, JANIB recommended the geographic areas assessed as prepared to begin the transition process. Authorization to proceed from Stabilization into Transition was decided by JANIB based on the following factors:[2]

1. The capability of the ANSF to shoulder additional security tasks with less assistance from ISAF;

2. The level of security in the area, and the degree to which the local populace was able to pursue routine daily activities;

3. The development of local governance structures, so that security would not be undermined as ISAF assistance diminished;

4. The ability of ISAF to adjust its force levels and posture as the Afghan forces expanded their capabilities, and as threats to security were reduced.

Although these criteria suggest a rules-based approach, the actual assessments and recommendations of the JANIB board were not made public, and they remain classified. The final decision on the assignment to transition tranches was taken by the Afghan cabinet, where political considerations played an important role, too. For example, President Karzai is reported to have aimed at an ethnically and regionally balanced first tranche, resulting in the inclusion of districts in the first tranche that were not recommended. It was noted in 2012, that while NATO provided thorough security assessments "ultimately, the transfer decision lies with President Hamid Karzai and his principal advisor for transition, Ashraf Ghani. Complex political considerations, including ethnic balancing, at times influence the transfer decisions, despite ISAF's advice."[3] Concerns over whether the JANIB board stuck to the initial aspiration set out in the Lisbon NATO summit of a conditions-based, not calendar-driven, process are highly questionable. As the process continued, the assignment of districts to different transition tranches became more and more opaque.[4] While the allocation of districts to transition tranches was subject to discretion, NATO's commitment to five tranches between 2011 and 2014 imposed constraints on the timing of the security

[2] See `https://bit.ly/37p8eKT`.

[3] See `https://brook.gs/3fSKhiT`.

[4] See `https://bit.ly/37pjMxs`.

transfers. The districts and their assignments to the ultimate transition tranches are presented in Panel B of Figure 2.[5] Our various difference-in-differences strategies exploit the temporal variation generated by the transition process. Section 3 provides details of these strategies, and presents event-study evidence and pre-treatment effects to address concerns about endogeneity in the tranche assignments.

It is important to highlight that the security transfers marked a real shift in responsibility, but did not represent a complete break. While ISAF troops were transferred out of lead combat roles, the coalition maintained a supporting and advisory role even after the transition. These trends are evident in Figure 3. This figure plots the share of recorded events in the SIGACTS conflict dataset (described in Section 2.5) that involved coalition and/or Afghan security forces together. Prior to the transition onset, as ISAF was preparing Afghan forces for the handover of security responsibility, joint operations increased. This increase reflects the fact that Afghan forces were deployed to the field. Toward the end of the transition, Afghan forces absorbed the vast majority of all operations on their own. The transition announcement thus marks the gradual handover of security responsibility to local forces, which typically took between three and twelve months to complete, during which which NATO gradually shifted into an oversight and supporting role otherwise known as overwatch. The date of the announcement of a tranche and the naming of districts that would participate in each wave was public information. We consider these security transfers the first phase of the transition process. The second phase of the transition was the formal withdrawal of troops and the closure of ISAF installations, which we describe in the next subsection.

2.3 Base closures

Over the course of ISAF's engagement, up to 140,000 NATO troops operated out of an estimated 825 physical bases scattered across Afghanistan. The withdrawal of most NATO forces led to the closure, demolition, or handing over to Afghan Security Forces of nearly 800 of these bases. The vast majority of these bases were small, tactical

[5] We exclude Nimroz and Daykundi because they did not have a Provincial Reconstruction Team, and did not experience a security transition. We also exclude Mihtarlam district, as different parts of the district were transitioned at different points in time. Results are robust to not dropping these data.

positions, such as Observation Posts or check points that were hosting, at most, small troop consignments (SIGAR, 2016). Only a handful of bases still remain in NATO operation under ISAF's small-scale, follow-up mission, Resolute Support, which officially began on January 1, 2015, and currently involves around 12,000 troops.

We faced a major challenge in collecting data on base-level deployments from more than 51 troop-sending countries; thus, we identified an alternative and robust method for measuring and coding base closures. We relied on a set of military facilities regularly mentioned in the US Department of Defense Periodic Occupational and Environmental Monitoring Summary (POEMS), which provides information about the physical environment and environmental hazards of main bases and smaller bases out of which NATO troops operated.[6] The POEMS does not provide exact location information or the exact date when bases ceased to be used for operations. However, we used the list of 338 main base locations, and we conducted a systematic search of sources and references for each base. We searched video and image-hosting platforms for time-stamped video and images shared on social media by many soldiers on deployment. In addition, we conducted systematic searches of main news sources using the LexisNexis and Factiva news databases, along with standard search-engine queries. For most bases we have several name variations as bases were sometimes named after fallen soldiers and our list also includes a substantial number of bases that were not exclusively under US command.

We were able to identify the district in which a subset of bases (170 of the 338 main bases) are located, and we were able to confirm when the base was closed, handed over to the Afghan Security Forces, or "retrograded" or demolished. It is likely that our sample is biased toward including bases that were not physically demolished but were handed over to the ANSF. We cannot confirm whether a base that was handed over to the ANSF was subsequently used by Afghan forces. Given the lack of spatial accuracy and the potential measurement error, we aggregate the information to the district level, computing the date that the last base was either retrograded or handed over in a district. Lastly, we also obtained data on the public handover ceremonies

[6] We restrict ourselves to the likely set of larger bases, such as forward operating bases, camps, combat outposts, and bases hosting the provincial reconstruction teams (PRTs). There is no clear size ranking. The PRTs are particularly important as most were operated by multinational forces.

that were usually held at the end of the formal withdrawal process in the provincial capitals. Since our base closure data do not provide us with a date for all districts in a province, we infer the physical withdrawal date based on these handover ceremonies.

Base transitions and withdrawals tend to happen after the formal transfer of security responsibility (i.e., after the first phase of the transition). Panel A of Figure 4 presents the timing of the transition tranche announcement relative to the recorded transition ceremony or base closure in months. The pattern that emerges is quite evident: relative to the transition onset date, base closures and handovers were happening earlier in remote areas than in geographic centers. We argue that this pattern is a consequence of the logistic organization of the withdrawal process – not a coincidence or artifact of dataset construction. A host of compelling anecdotal documentation provides further support to this view, which we discuss below.

2.4 Exploiting logistic constraints as an instrument for the timing of base closures

The physical withdrawal of ISAF troops and material was a significant logistical challenge. Withdrawal was impeded by several factors. We exploit these factors to inform the construction of an instrumental variable to isolate as-if random variation in the sequencing of the physical closure of ISAF bases. First, the closest accessible sea port was Karachi, Pakistan, requiring transit through the Khyber Pass. This route was shut down during the early phase of the transition (2011, 2012) after an airstrike accidentally killed Pakistani troops. Second, convoys using the land-based route through Uzbekistan's Salang Pass were restricted from carrying weapons. Third, land-based consolidation of heavy machinery was restricted by poor road infrastructure in Afghanistan. Fourth, restrictions on equipment handover created a substantial burden: the US alone had $36 billion worth of heavy equipment, armaments, and sensitive resources that needed to be relocated. Together, ISAF forces needed to move more than 70,000 vehicles and 120,000 industrial shipping containers (Loven, 2013).

To address these challenges, ISAF used heavy-duty, long-haul C-17 Globemaster planes to transport equipment from Afghanistan to Kuwait. The size of these aircraft implied that only a few airports could be used as retrograde hubs. These nodal bases informed both the timing and geographic sequencing of the pullout. Smaller or remote bases were handed over first, with materials consolidated around larger bases with transport capabilities. Forward Operating Base (FOB) Torkham in Momand Dara district of Nangarhar province offers an illustrative example. The base was formally handed over to the ANSF on December 18, 2013. FOB Torkham was located on the border with Pakistan. Despite the relative proximity of a transit point to leave Afghanistan, most of the equipment from FOB Torkham was sent 73 km inland to Jalalabad Airfield by road and using sling-loaded CH-53 helicopters. From there, materials were transferred an additional 185 kilometers to the Bagram north of Kabul. From there, materials were flown out to Kuwait using C-17 Globemaster airplanes.[7]

The above discussion suggests that access to a small subset of bases was crucial up until the last stages of the military pullout. As a consequence, bases were closed from the outside in, consecutively starting with the outlying bases with difficult or limited access to these central transport hubs. We use this information, together with information on the available road network, to construct a variable capturing the travel distance on the least-cost path to one of the ten logistical hubs. The resulting instrument is presented in Panel B of Figure 4. We show that our results are robust to controlling for a host of other distance measures, most importantly, the distance to the nearest airport of any type (i.e., including airfields not suited for heavy cargo planes).

2.5 Measuring Conflict Activity and Perceptions

We rely on two novel microlevel data sources that allow us to combine results from institutionally tracked conflict data with detailed survey data.

2.5.1 Significant Activities Event Data

Afghanistan provides a rich environment for investigating security transitions, and as we describe below, our study overcomes several critical obstacles that usually limit the ability to draw meaningful and robust inferences. We rely on newly declassified microdata collected by ISAF and local national security partners secured by Shaver and Wright (2016). Throughout the ongoing conflict, these security forces have tracked insurgent attacks by documenting the approximate time and precise location

[7]See `https://bit.ly/33vw7iH`.

of attacks perpetrated against them or reported to them. This dataset includes more than 200,000 individual observations of insurgent attacks between 2008 and 2014, each of which is identified by attack type (e.g., attack by direct fire, attack via the use of improvised explosive devices (IEDs)).

Afghan insurgents undertook several primary types of attacks throughout the war. These involved attacks from direct fire, IEDs, and other combat activity. Direct fire includes attacks perpetrated at close range (direct line-of-sight encounters). Individual insurgents (often acting in groups) carry out these attacks in a variety of ways. IEDs tend to be directed against moving targets (e.g., vehicle patrols and convoys); IEDs are typically placed on or immediately around roadways. Our data also track indirect fire combat events. Indirect fire refers to attacks that include mortars and rockets, which can be launched from much greater distances, but tend to be far less accurate. Nevertheless, even when mortars and rockets fail to strike their intended target, they often create loud explosions that can be heard over relatively large distances.

2.5.2 Afghanistan Nationwide Quarterly Assessment Research Survey Data

Our survey evidence relies on the Afghanistan Nationwide Quarterly Assessment Research (ANQAR) platform. ANQAR tracks civilian attitudes toward government, anti-government entities, and coalition partners. Survey responses are collected on a quarterly basis by local contractors. Before administering a survey wave, local elders are contacted to secure permission for enumerators to enter villages. When enumerators could not access sampled villages, intercept interviews were used to collect information from residents traveling in neighboring areas (Child, 2016). Questions vary by survey wave, but the questions most relevant to our investigation are consistently included. Although early waves have higher nonresponse rates than later waves, these rates are consistently lower (5-10%) than those of comparable national surveys conducted in the United States and Europe (Condra and Wright, 2019). We have restricted access to data from 2008 to 2016, covering roughly 370,000 respondents, through a data-sharing agreement with NATO. Summary statistics of the data are presented in Table A1.

2.5.3 Other data sources used

We rely on digital placemats from ISAF archives to link districts to regional commands, and we classify districts using a standardized administrative map compiled by the Empirical Studies of Conflict (ESOC) research group. All events and survey waves are rectified to match this map. We incorporate information from the Afghan Commander's Emergency Response Program (CERP), which is a military-led scheme for small-scale development projects. These data were obtained through formal channels; these data cover new projects initiated until the beginning of 2014, and they include projects that were active during 2014 and beyond. In addition, our empirical analysis includes detailed land-cover data, grid-cell population data, and measures of elevation and terrain features that we exploit in our empirical designs.

3 Empirical strategy

Our paper studies the impact of the two main phases of the security transition: (1) the transfer of control from ISAF to the ANSF, and (2) the physical withdrawal of ISAF troops. We rely on different strategies to estimate these effects, which we detail in this section. Lastly, we discuss in detail how we leverage new methods from spatial econometrics to flexibly control for for conflict displacement.

3.1 Security transfer to ANSF

Our baseline empirical strategy is a difference-in-differences approach, comparing districts in which the security transition has been implemented to non-treated districts, before and after the transition.

$$y_{d,r,t} = \alpha_d + \beta_{r,t} + \gamma \times \text{Handover}_{d,t} + \eta_d \times t + \epsilon_{d,r,t} \tag{1}$$

In the equation above, d indicates the district, r the Regional Command (RC) and t the quarter. $\text{Handover}_{d,t}$ switches on when ANSF takes over from ISAF. At the district and quarter level our outcome measures $y_{d,r,t}$ come from both the SIGACTS incident and ANQAR survey data. While the SIGACTS data contains finer timestamps, the ANQAR survey data are collected quarterly. In order to maintain consistency, we use the quarterly frequency for the district-level analysis. We allow each district to follow a specific linear trend $\eta_d \times t$, and we allow for regional command specific non-linear time effects ($\beta_{r,t}$). The RC, indexed by r, served as one of the most important organizational units in ISAF, and it is possible that reporting practices differed by regional command; hence the choice of the time fixed effects.

Our preferred outcome for the SIGACTS data at the district level is the logarithm of incidents (plus one). This specification allows us to capture changes on the extensive and intensive margins, but is less sensitive to vertical outliers.[8] Our estimate of the coefficient γ captures the causal impact of the security transition as long as conflict in districts in different transition tranches were following common trends. As discussed in the background section, the selection into different transition tranches was based on a variety of factors that were not clearly linked to trends in violence. To validate our estimates, we provide evidence in support of the common trends assumption based on both event studies around the transition dates, and on the estimation of pre-treatment effects. We introduce these tests later. As a baseline, Table A2 shows that several baseline characteristics were not balanced at the district level. However, more violent districts are not systematically allocated to later tranches. There are few significant differences between violence levels when we compare tranches 1 to 2, and 3 to 4. Only tranches 3 and 5 appear to have been more violent compared to the preceding tranche.[9] Our basic district-level panel includes district-specific, linear time trends to alleviate the concerns associated with these baseline differences.

3.2 ISAF troop withdrawal

At the end of the transition process, the vast majority of the troops with ISAF physically left Afghanistan. While the troop withdrawal was made possible by the transfer of control to the ANSF, its timing was not mechanically linked to the formal security transfers. Unlike the transfer process, which was constrained by a fixed schedule of five tranches, the decision to close or hand over individual bases was

[8]Our results are robust to alternative transformations of the dependent variable. We present these results in Tables A6 and A7: the inverse hyperbolic sine (asinh), per capita specifications using different population measures, and level outcomes (i.e. counts) in a Poisson model. In Online Appendix, Section B we present results from another identification strategy that uses smaller grid-cells, and works with binary violence outcomes.

[9]As a robustness check, we present treatment effects by tranche in Table A11.

highly discretionary and district specific. Closures were in part driven by local assessment of Afghan troop training and preparation to operate independent of foreign support. The endogenous sequencing of base closures may overstate subsequent battlefield gains. On the other hand, the Taliban may have been more effective at launching attacks against ANSF forces after withdrawal. These two dynamics could offset one another, yielding naïve estimates that are biased toward zero. This makes identification of the effect of the withdrawal phase particularly challenging.

We try to overcome these identification concerns by exploiting the importance of logistical constraints for the withdrawal process. As described in Section 2.4, a small number of military-grade airports acted as crucial logistical hubs during the withdrawal process. We hypothesize that bases that were farthest removed from these airports saw their ISAF troops leave first once the transition process started (i.e., after 2011). We use a a least-cost path algorithm (illustrated in Figure 4) to calculate distances from every district to the nearest military airport, and we use the interaction of this distance measure with a dummy for the post-2011 period as an instrument for ISAF troop withdrawal. The corresponding first stage is:

$$c_{d,r,t} = \alpha_d + \beta_{r,t} + \gamma \times \text{Handover}_{d,t} + \lambda \times \text{Hub Distance}_d \times \text{Post}_t + \zeta_t \times X_d + \eta_d \times t + \epsilon_{d,r,t} \quad (2)$$

$c_{d,r,t}$ is a dummy indicator that switches to one when, according to our dataset, the last military base has closed in the district. This outcome is defined at the district level, and its construction is described in detail in Section

In the second stage, we model violence outcomes $y_{d,t}$ as follows:

$$y_{d,r,t} = \alpha_d + \beta_{r,t} + \gamma \times \text{Handover}_{d,t} + \kappa \times \hat{c}_{d,r,t} + \zeta_t \times X_d + \eta_d \times t + \epsilon_{d,r,t} \quad (3)$$

where κ is the quantity of interest associated with $\hat{c}_{d,r,t}$, the instrumented withdrawal sequence. For the exclusion restriction to hold, the differential effect of the distance to military-grade airports after 2011 on conflict outcomes can only operate through the withdrawal of ISAF troops. Importantly, the inclusion of unit fixed effects addresses any time-invariant sources of bias that are district specific and correlated with proximity to military airfields, including geographic suitability for rural insurgent activity. Our identification strategy leverages only the differential effect of proximity after the withdrawal begins. Any operational disruptions across regional commands over time that may be correlated with the sequencing of closures are also absorbed in our benchmark fixed effects. The exclusion restriction could still be violated if the time-varying effects of military airfield proximity are correlated with time-varying effects of nearby market activity. The inclusion of time-varying effects of other market-oriented distances, such as distance to any type of airport in our vector of covariates X_d, helps address this concern. The withdrawal may have coincided with a shift in Taliban activity away from remote areas near provincial borders along the outer reach of ISAF-supported provincial reconstruction teams, and toward population centers. We account for this potential source of bias by incorporating the time-varying effects of proximity to provincial borders. It is also possible that districts in different cohorts (handover tranches) were exposed to correlated shocks to military equipment, training, or preparation that impacted base closures. The importance of these factors could have varied over time as the transition and withdrawal neared completion. We account for these factors in two ways: directly controlling for the timing of the handover, and, in a separate approach, flexibly estimating tranche-specific time effects.

3.3 Conflict displacement

We now consider a specification that adds displacement effects to the difference-and-differences (Equation 1) and instrumental-variable specifications (Equation 3). One potential concern is that insurgent activity is likely highly mobile, and that the transition to ANSF might have induced a strategic reallocation to other districts. In this case, spillovers may affect the identification of transition effects – both at the onset and at the withdrawal. We consider a specification with spatial spillover effects to account for possible transition externalities. In what follows, we focus on the version of the difference-in-differences specification (1) with spatial controls. The instrumental-variable version follows with minimal changes. We implement a specification of the form:

$$y_{d,r,t} = \alpha_d + \beta_{r,t} + \gamma \text{Handover}_{d,t} + \delta \sum_{\substack{j=1, \\ j \neq d}}^{N} w_{d,j} \text{Handover}_{j,t} + \rho \sum_{\substack{j=1, \\ j \neq d}}^{N} w_{d,j} y_{j,r,t} + \eta_d \times t + \epsilon_{d,r,t} \quad (4)$$

where $w_{d,j}$ captures the extent to which district j affects d. The spillover effects may happen either because conflict in district d is affected by handover in other districts (through the combined transition indicator $\delta \sum_{j=1,j\neq d}^{N} w_{d,j}\text{Handover}_{j,t}$, or "exogenous effects") or by conflict in other districts (through $\rho \sum_{j=1,j\neq d}^{N} w_{d,j} y_{d,r,t}$ or "endogenous effects", both after Manski, 1993). The presence of district-time linear interactions and regional command-time nonlinear effects control for the correlated effects.

We explore several specifications of (4) with different choices of weights. Our exercises also leverage a novel estimation strategy taken from de Paula et al. (2019) to recover the weights $w_{d,j}$ along with the parameters γ, δ and ρ from within the data. We find the main treatment effects to be robust to the inclusion of spatial controls over a vast array of specifications. More details are provided in the Online Appendix, Section A.

4 Main Results

We first discuss the effect of the security transfer to ANSF, and then present estimates of the impact of ISAF troop withdrawal.

4.1 Phase I: Security handover to ANSF

Table 1 shows the effects of the security transition for the most important conflict outcomes in our military records—fatal events, direct fire attacks, and IED (Improvised Explosive Device) explosions. Our baseline difference-in-differences specification at the district level shows that the intensity of violence dropped sharply when the ANSF became responsible for security provision. We estimate that the security transition led to approximately 0.12 of a standard deviation (SD) decline in casualty events overall, with a 0.1 of an SD reduction in direct line-of-sight combat events and a .075 of an SD decline in IED explosions. While the inclusion of district-specific trends and RC $\times$ time fixed effects weakens the results slightly, the estimated effects remain large and precisely estimated in this demanding specification. To validate our estimates, we introduce a number of event studies, which are presented in Figure 5. They provide evidence of the common trends assumption that underlies our difference-in-differences estimates. We see flat trends prior to the security transition, and marked drops once security responsibility had been formally handed over to ANSF – as indicated by the vertical line in the subfigures. In Figure 6, we present coefficient estimates from our main specification for a wider set of violence outcomes. These additional outcomes include fatal events involving security forces, civilians, and insurgents, as well as indirect fire attacks. Across this broader set of violence measures, we observe consistent drops in conflict (between .065 and .15 of an SD) after the responsibility for security provision has been transferred to ANSF.

We present the analysis of the spatial spillovers in Table A4 for the SIGACTS data. In Column (1), we replicate the coefficients from the differences-in-differences analysis. Columns (2)-(7) initially implement standard spatial spillover regressions with known and given proximity matrices (e.g., Ferrara and Harari, 2018). More specifically, we define as two districts as "connected" if they are neighbors, neighbors of neighbors; within neighboring provinces; within a geodesical distance of less than 250km or 500km; and within a driving distance of less than 500km. As motivated in Subsection 3.3, those specifications are rather restrictive because they impose very strong assumptions behind the mechanism of displacement. Thus, we also utilize the data to inform about the pattern of spillovers. This is accomplished by estimating the weights $w_{d,j}$, and the results are seen in columns (8)-(10) for various specifications. To slightly reduce the dimensionality of the problem, we assume that districts that are too distant (with driving distances above 500km and, separately with driving distances above 1000km) are unconnected and thus $w_{d,j} = 0$. In all cases, we observe that the majority of the point estimates for the treatment effects are robust to the inclusion of displacement effects.

Table 2 shows results for ANQAR survey responses. The ANQAR data are only available at the district level, and, for consistency, we report results for the most demanding specifications at this level. Table 2 includes measures that are systematically collected across many different ANQAR survey waves independently from the SIGACTS data. These results suggest that the shift in security perceptions matches the changes we observed in the tactical reports.

The share of respondents who reported security improved in the last six months after the ANSF took over security (column 1) increased by approximately .12 of an SD.

They also perceive that the Taliban had grown weaker since the transition (column 2) (0.1 of an SD), even if this effect is marginally insignificant. Moreover, respondents were more likely to have seen the Afghan National Army (ANA) (i.e., the most important component of the ANSF) in their village at least once a month (column 3), and they were more likely to respond that the Afghan forces bring security to their area (column 4), each shifting about 0.1 of an SD. This suggests that the formal transfer of security responsibility during the transition process is clearly perceived as such. The consistency of our results across data types (military records and individual survey evidence), together with our demanding empirical designs, gives us confidence in the robustness of this core finding.[10] Yet, as shown in column 5 of Table 2, the security transfer does not appear to have affected the perceptions of the local population about who is actually in control of their area. This suggests that the security transfer, while being associated with improvements in the perceived security situation, seems to have failed at shifting the underlying fundamentals of the conflict. This result foreshadows our findings regarding the second phase of the security transition.

4.2 Phase II: Withdrawal of ISAF troops

The initial transfer of security to the ANSF was followed by the gradual closure of ISAF bases. As discussed in Section 2.3, the logistical challenges of organizing the troop withdrawal imposed a certain structure on the military pullout. We instrument the sequence of base closure with the interaction of the distance to the closest military airport hub and a dummy for the post-2011 period (see equations 2 and 3). Table 3 presents the first-stage results and confirms that our interacted distance measure does a good job predicting the timing of base closures in a district. This remains true when we control for distance to the closest airport of any type (i.e., including non-military airports) and province borders in column (2), as well as for time-varying effects of the transition tranche in column (3).

We take the instrumental variable strategy and contrast our IV estimates with the naïve OLS results in Table 4. The OLS results, presented in Panel A, suggest that base

[10] In particular for the quality of the SIGACTS data may have been affected by the security transition itself despite continuous collection throughout NATO's withdrawal (as evidenced in Panel A of Figure A2). The consistency across the two data sources is thus reassuring.

closures are not associated with any significant changes in conflict outcomes. As we argued earlier, the OLS estimates could suffer from endogeneity problems because the district-specific sequencing of base closures was highly discretionary and likely influenced by local assessments of Afghan troop training and battlefield readiness. If bases were closed earlier in districts where violence was expected to decrease, the OLS coefficients we estimate would mask any violence-enhancing effect of foreign troop withdrawal. If the magnitude of these cross-cutting effects is comparable, we would expect to estimate an OLS result close to zero – which is what we find.

Panel B of Table 4 presents our IV results. When we instrument for the sequencing of base closure using the time-varying effect of military airfield proximity, we find a consistent violence-increasing effect of the base closure on our main conflict outcomes in columns (1) through (6). The post-withdrawal increase in violence ranges from approximately 0.4 to 0.7 of a SD. In fact, contrasting the direct effect of the security handover with the effect of the base closures in columns (1), (3), and (5), the increase in violence due to the base closures fully offsets the reductions in combat activity due to the security transfer, with a net increase in conflict of approximately 0.3 of a SD.

This finding is robust to using exclusively within-tranche variation, by including a set of tranche $\times$ time fixed effects (in columns 2, 4, and 6). Hence, the uptick in violence cannot be explained by a general time pattern that is specific to districts belonging to an individual tranche. Rather, the increased violence appears to reflect an effect that is specific to the physical withdrawal of international troops independent of the transfer announcement. In Figure 7 we study a broader set of conflict outcomes at the district level. We also implement our spatial econometric technique for calibrating network weights, and we introduce them in the IV framework. In Table A5 we confirm that the estimates are robust to the inclusion of spillover controls.

To what extent do these distinct effects on conflict outcomes map into changes in the perceived security situation? In Table 5, we present results studying ANQAR survey-response data. In Panel A, we estimate both the effect of the security transition onset, as well as the effect of the (instrumented) physical base closure. The picture that emerges is consistent with our findings from the SIGACTS conflict data; while the transition onset is associated with a marked improvement in the perceived security situation, the physical withdrawal and base closure are associated with a reported worsening of the security situation. Accounting for both phases of the security transition, perceived security deteriorated by more than .4 of an SD. In addition, perceptions that the Taliban had grown weaker strongly reverse, suggesting that civilians believe the Taliban had, indeed, become stronger after bases were closed. Despite a notable increase in reported Afghan troop patrols, civilians suggested that local forces were less likely to bring security after the withdrawal of foreign forces. In Panel B, we study the same outcomes, yet, only exploiting within-tranche variation. This precludes the estimation of the security transfer to ANSF because this variable is perfectly collinear with the tranche-by-time fixed effects. Our results remain robust, suggesting that the closure of bases is indeed associated with a significant worsening of the security situation. Before turning to a discussion of the underlying mechanism, we highlight the additional robustness checks that we performed.

4.3 Robustness

In the Online Appendix, we introduce a range of robustness checks.

Matched distant gridcell pairs. In an attempt to relax the identification assumption that underlies our main district level difference-in-differences approach, we change the unit of analysis to 10×10km gridcells. This is only possible for the SIGACTS data, as the ANQAR survey data are reported at the district level. In the resulting high-resolution dataset, we construct pairs of matched gridcells using baseline population, elevation, road connections, and land-cover data. The gridcell-level outcomes show reductions in violence that are larger although it should be kept in mind that this is at the extensive margin of our violence outcomes. For more details on the matching procedure, see the Online Appendix, Section B. For the summary statistics at the gridcell level, see Table A8. Results for the gridcell analysis are presented in Table A10, along with event study graphs in Figure A3.

Tranche-by-tranche effects. We look at heterogeneous effects by tranche in Table A11. We confirm that the effects are not driven by a single tranche. Even if the magnitudes differ across tranches, the signs are consistent and significant for key outcomes in multiple tranches.

Pre-treatment effects. We study whether the the security transfer to ANSF has effects prior to the treatment announcement for the broader set of of outcomes in Figures A4 and A5. The vast majority of these pre-treatment effects are insignificant and small compared to the actual treatment effects.

5 Mechanisms

Afghanistan's security transition could affect violence outcomes through a large set of mechanisms. We consider several plausible alternative mechanisms below.

5.1 Withdrawal of foreign targets

In principle, the transfer of security to the ANSF could reduce violence because the ability of the Taliban to mobilize was weakened by the security transition. However, this explanation cannot account for the increase in violence we observe after the base closures. Another interpretation of the reduction in local violence following the security transfer, is that the ANSF were more effective, for example because they monopolized violence better than the multinational ISAF, or because they coordinated more effectively with the local population. In this sense, foreign troops were perhaps no longer required to support security provision. These mechanisms are similarly consistent with the decline in violence after the first phase of the transition, but are inconsistent with the violence-increasing effect of base closures and withdrawal.

5.2 Complementarities during the transition period

Our main results are consistent with the idea that complementarities between ISAF and ANSF generate improved security outcomes, to the extent that ISAF base closures eliminate the gains in security outcomes that accompany the security transfer. These complementarities could arise because ISAF monitors the ANSF, and provides military support after local forces take operational command. The combination of the ANSF leading operations and receiving feedback, combat support, and development assistance could have reduced violence during the first phase. These gains could have been reversed with the end of overwatch and the physical withdrawal of troops.

In Table 6, we investigate the complementarities mechanism. Additional monitoring during the first phase could have reduced misbehavior by Afghan troops, improving community relations, but we find no evidence of that type of shift (column 1). We also find no evidence of a change in perceived ability of the ANSF to operate independently of ISAF, or of ANSF capacity to defeat the Taliban following the security handover (columns 2 and 3). We also find no evidence that one dominant form of development assistance, the US Army Commander's Emergency Response Program (CERP), was targeted to enhance the effectiveness of Afghan forces during the transition process (column 4).

We also investigate potential complementarities in tactical support activities (Table A12). In particular, we might expect that foreign forces would be marginally more likely to respond to violent events that trigger combat support following the security handover. Columns (1) and (3) show that close air support and medical evacuations are highly correlated with contemporaneous close combat and direct fire attacks, yet columns (2) and (4) show no marginal changes in combat support after the security handover. Column (5) shows that IED explosions coincide with additional bomb clearance, yet bomb neutralization does not significantly improve during the security handover (column 6). It is still possible that Afghan troops experienced a temporary, unobserved shock to their fighting capacity. One such shock would be large-scale transfers of ammunition and weaponry to Afghan troops whose supplies had been depleted before the withdrawal of foreign troops. Prior theoretical work suggests this would lead to a composition shift in combat (Bueno de Mesquita, 2013), reducing close-range attacks and increasing roadside bomb deployment. However, tables 1 and 4 indicate that this type of tactical shift did not occur following the handover. Overall, we fail to identify any clear evidence consistent with short-lived tactical complementarities that could explain the main results.

5.3 Lying Low

One compelling mechanism that could account for our findings is a strategic decision by the Taliban to scale back violence during the transition period. Local security transfers were particularly important because they created an overwatch period in which the relative capacity of the Taliban and the ANSF was signaled to ISAF forces.

As such, the Taliban had an incentive to understate its capacity in a manner that was both difficult to detect, and that confirmed NATO forces' biases (i.e., that Afghan security forces were ably trained and capable of delivering security on their own). We briefly formalize this logic in a simple game in which violence serves as a signal about the relative capacities of the Taliban and the ANSF. This formalization helps situate the conflict patterns we observe as the equilibrium outcome of a plausible, albeit stylized, strategic interaction between combatants during a foreign-to-local security transition.

5.3.1 A simple model of Lying Low

Our model studies the interaction between a local Taliban group and an ISAF unit as a signaling game. We assume that the capacity of the ANSF versus the Taliban is $\theta \in \{0, 1\}$, the cost for the Taliban of staging attacks. Importantly, θ cannot be observed directly by ISAF. In the first period of the game, ISAF maintains its full capacity $\mu > 1$. ISAF chooses to enter overwatch (i.e., not to use capacity against the Taliban) during the first phase of the transition (Period 1). The Taliban chooses the level of attacks $a \in \{0, 1\}$ according to the objective function: $[a - \theta a]$. If the game would end in the first period, it is clear that the Taliban would choose $a = 1$ if $\theta = 0$.

To capture the transition dynamics, we assume that ISAF makes a final decision to maintain capacity or not at the start of Period 2. In the parameters of the model, this means that ISAF can keep $\mu > 1$ (i.e., the initial level), or scale down to $\mu = 0$. Maintaining μ in Period 2 costs c. This cost includes the direct cost of maintaining capacity, but it also incorporates the large political costs of maintaining a military presence.[11] As in Period 1, the insurgents attack according to their objective function in Period 2. We assume that the Taliban does not just engage with the ANSF in Period 2, but also with ISAF, which uses its remaining capacity μ. So, the second-period objective function is: $[a_2 - (\theta + \mu)a_2]$. We give the second-period weight $\chi > 1$, as we assume the Taliban puts more weight on the long-term, post-transition period.

The order of the game can be summarized as follows:

1. Nature draws $\theta \in \{0, 1\}$ with $E(\theta) = \sigma$

[11] For a discussion of the political costs of maintaining a military presence, see Marinov et al. (2015).

2. The Taliban chooses $a_1 \in \{0, 1\}$

3. The Taliban receives a Period 1 pay-off $[a_1 - \theta a_1]$; the Period 1 pay-off for ISAF does not matter.

4. ISAF observes a_1 and chooses $\mu_2 \in \{0, \mu\}$

5. The Taliban chooses $a_2 \in \{0, 1\}$

6. The Period 2 pay-offs for the Taliban: $\chi[a_2 - (\theta + \mu_2)a_2]$

7. The Period 2 pay-offs for ISAF: $[-a_2 - c\mu_2]$

A pooling equilibrium now exists with $a_1 = 0$ and $\mu_2 = 0$ if $1 - \sigma < c\mu < 1$. In period 2, $a_2 = 0$ if the Taliban has low capacity relative to the ANSF ($\theta = 1$), and $a_2 = 1$ if the Taliban has high capacity. The pooling equilibrium where the Taliban is a high type is consistent with the empirical results we observe. In this case, violence levels would be low during the initial period, ISAF would withdraw, and violence levels would increase after withdrawal.[12]

5.3.2 Stylized facts about the transition

The stylized model has two features that deserve further discussion in the context of Afghanistan's transition: that ISAF learns about the relative fighting capacity of the Taliban, and the assumption that ISAF does not use violence in Period 1.

The model assumes that the local Taliban's type while fighting Afghan forces is unknown to ISAF. During an extended conflict where combatants update about their opponent's type, this assumption may seem implausible (Powell, 2006). While ISAF continually assessed their relative capabilities, less was known about the battlefield readiness of the ANSF to take on the Taliban, especially at a local level. This was due to several factors. Credible intelligence about Taliban force strength was thin. Attrition within ANSF ranks was severe, with as many as 33 percent of troops turning over each year. Battlefield preparation trackers were highly subjective, with evaluation

[12] Wittman (1979) points out that a unilateral reduction in conflict intensity can prolong conflict though for distinct reasons. In Wittman's discussion, a unilateral reduction in violence reduces military costs, and results in fewer casualties, lowering political costs for both sides. In our case, the Taliban's reduction in violence facilitated withdrawal (because political costs remained high for NATO countries), and weakened the remaining military forces (the ANSF).

standards changing during the transition, and ISAF changing the level of evaluation from the battalions to brigades – effectively losing track of information about local preparedness.[13] Observing how the conflict developed during the security handover was the first signal foreign troops had about how local Afghan troops would handle their new operational command role fighting the Taliban. Official US Department of Defense (DoD) documents suggest that international forces thought they were learning about the relative capacity of the ANSF and Taliban, and that signals from the handover phase were interpreted positively. As a communique dated July 2013, when the transition was ongoing, noted, "During the reporting period, the ANSF has performed effectively in the field, losing no major bases or district centers to the insurgency and protecting the majority of the Afghan population. Although challenges remain, the ANSF demonstrated an increasing level of effectiveness."[14]

In the model, ISAF chooses to enter overwatch during the first phase of the transition. As such, it does not use its capacity against the Taliban during the first period of the game; instead it hands over operational command to the ANSF and observes the level of violence produced by the Taliban. As argued in the previous paragraph, this period could have allowed ISAF to update its priors about the relative capacity of the Taliban versus the ANSF.[15] The historical context suggests there were additional reasons for why ISAF would not use its fighting capacity during the handover phase. First, ISAF did not have the military authority to deviate from the handover schedule. Second, reverting from overwatch would have disrupted the new command structure. Such a change would have also visibly undermined the authority of local forces in the communities where they conducted patrols and operations – potentially

[13] We provide additional details in the Online Appendix, Section C.

[14] See `https://bit.ly/3fPYhdb`.

[15] Under the pooling equilibrium, ISAF does not receive meaningful information about the Taliban's type, but it also does not experience significant battlefield losses (since the Taliban produces a low level of violence). It is possible to model an explicit benefit for ISAF to go in overwatch in Period 1. For example, if the Taliban is non-strategic (or impatient) with a certain probability. In this extension, the Taliban will sometimes reveal its type in Period 1, which allows ISAF to adjust its withdrawal decision. Our model can also be reinterpreted: μ_2 could capture a sticky investment by ISAF in the local ANSF capacity, even if ISAF has committed to withdraw in Period 2 under all circumstances. It is also worth noting that the model has a semi-separating equilibrium (which is not a good explanation of the observed almost complete withdrawal of ISAF, but could be consistent with investments in ANSF capacity) in which the Taliban's action in Period 1 is informative.

reducing public confidence in the long-run ability of Afghan troops to effectively provide security. More broadly, political leaders of troop-sending countries made their commitment to the security transition public, repeatedly referring to the process as "irreversible,"[16] in an effort to raise the political costs of stalling or reversing the handover.

We cannot fully rule out a variant of the "lying low" mechanism whereby the Taliban reduce violence to speed up the transition logistically, even if NATO's beliefs of the relative fighting capacity of the Taliban are irrelevant to the transition process. However, we think the stylized signalling model we present matches the historical context well, particularly the overwatch period, as highlighted in this subsection.

5.4 Policy Relevance

Our study addresses a topic of substantial economic and policy significance: the transition of military control to local forces after an international military intervention. Our findings suggest that insurgents acted strategically around the withdrawal, responding to the two phases differently. Violence decreased after the announcement of the local transition of security forces, but increased after the physical withdrawal of troops. We suggest that the Taliban calibrated its violence to manipulate the signals that ISAF received about both the capacity of local security forces and the strength of the insurgency. Once the political costs of re-intervention had become sufficiently high, rebels expanded their combat operations. Withdrawal schedules, thus, might endanger post-occupation stability by tying the hands of political and military leaders.[17] In this respect, the experience of Afghanistan is not unique. To unpack the policy relevance of the Afghan security transition, we briefly introduce facts from two historical cases: the Soviet Union's transfer of power to Afghan forces in 1989, and the end of US-led operations in Iraq in 2011. Each of these cases reveal similar patterns of insurgent violence declining during the initial phase of the security transition and surging after the final withdrawal of foreign troops.

Soviet forces first entered Afghanistan in 1979 in an attempt to support commu-

[16] See `https://reut.rs/3mndyEV`.

[17] Not all interventions end with a formal, staggered withdrawal schedule. The Italian-led intervention in Albania (Operation Alba), for example, rapidly transitioned policing operations back to local forces following a national election (Perlmutter, 1998; Dobbins James et al., 2008).

nist government forces. The mission was narrowly defined as a stabilization effort intended to help the government consolidate control over the outlying provinces (Gompert et al., 2014). The first formal plans for withdrawal were drafted in 1985. In 1988, the Afghan Geneva Accords were signed, leading to a temporary ceasefire and a publicly announced timetable for Soviet withdrawal in 1989. The subsequent decline in insurgent activity raised expectations about a successful handover of security. However, after the withdrawal, mujahideen forces abandoned the ceasefire agreement and engaged in open attacks on government compounds. By that point in time, the political costs of another intervention were too great. Three years later, Soviet economic assistance was withdrawn, and the Afghan government was unable to pay salaries, bribe tribal militias, or manage the economy. During this period of instability and fighting between rival mujahideen factions, the Taliban emerged, eventually establishing control over most of the country (with the exception of some northern provinces) by 1998. Rebel forces strategically reduced violence levels until after foreign troops withdrew and the political costs of conducting another intervention were prohibitive (Smith, 2014) – a situation that has striking parallels to the Afghanistan security transition we study in this paper. The subsequent political instability – which is similar to the political situation that has unfolded in Afghanistan after the NATO withdrawal – created a window of opportunity for opposition forces to consolidate territorial control without directly confronting well-equipped Soviet fighters. Despite the parallels between this historical episode and the recent security transition in Afghanistan, the political factions that formed the core mujahideen resistance forces and the modern Taliban are largely distinct. This suggests that similarities across the Soviet and NATO withdrawals are not simply a repeated strategy by the same military actors. Instead, these consistent patterns of violence suggest how insurgents can strategically respond to foreign-to-local security transitions.

The transfer of power following the US-led operations in Iraq also exhibits strong parallels to the recent Afghan transition. In 2008, the Status of Forces Agreement laid out the timeline for withdrawal. Starting in July 2009, US troops no longer patrolled in urban centers. In September 2010, operational control over primary security provision was handed over to Iraqi troops. During this period, 50,000 US troops remained in Iraq to support the transition, and violence decreased sharply. After the administrations of US President Barack Obama and Iraqi Prime Minister Nouri al-Maliki failed to reach a consensus on legal immunity for US forces, the US prepared for a complete withdrawal by mid-December 2011. The conflict reemerged during and after this phase of the security transition. Several high-profile attacks targeted the Iraqi parliament and a number of transferred US military bases; a large-scale insurgent assault took place in Basra. As Lake (2019, 258) points out, withdrawal enabled al-Maliki to take complete control over security, including cutting funding for the Sunni-backed Awakening Forces. Following this last phase of the security transition, sectarian violence flared. By 2014, the Islamic State (IS) emerged as a major threat to Iraqi security, capturing the city of Mosul.

These cases suggest that the patterns of violence we observe in Afghanistan may reflect a broader conflict dynamic that emerges from the withdrawals of foreign occupations as wars end. These historical transitions confirm that insights from the findings of our study may generalize to other contexts, including ongoing peace negotiations with the Taliban.

The Trump administration reentered negotiations with the Taliban in late 2019 after the failed meeting at Camp David scheduled for the week of September 11. After agreeing to a temporary seven-day ceasefire between combatants, the Taliban coordinated a drawdown of its forces, and significantly reduced attack activity. US officials, in turn, agreed to the first phase of a peace deal, which was signed on February 29, 2020. This first phase includes releasing 5,000 Taliban fighters from Afghan government prisons, and a diplomatic engagement with the elected government of President Ashraf Ghani. The signing ceremony, attended by US Special Representative Zalmay Khalilzad and Taliban leader Mullah Abdul Ghani Baradar, was touted as a symbolic victory by the Taliban. Classified intelligence collected since the first-phase agreement was signed suggests that the Taliban is prepared to violate the terms of this peace agreement and overwhelm the Ghani government once US forces withdraw – which parallels the dynamics that surfaced with the withdrawal of both Soviet forces in 1989 and the majority of NATO forces in 2014.[18] Despite reassurances from the US

[18]See https://nbcnews.to/33v1XfD.

Secretary of Defense that the United States would "not hesitate to nullify the agreement," President Donald Trump has stated his view more bluntly. When asked about the intelligence suggesting the Taliban were planning to overrun the government, he said, "Countries have to take care of themselves... You can only hold someone's hand for so long."[19]

6 Conclusion

Our analysis of the withdrawal of NATO troops from Afghanistan reveals a troubling pattern: a short-term reduction in conflict in the first phase of security handovers, followed by a surge in violence as actual departures took place. Our findings suggest that such short-run impacts of the security transition may appear to be positive and meaningful; indeed, in the case Afghanistan, they led to the prevailing belief at the time that local forces were more capable, and that the Taliban forces had grown weaker sooner than had been expected. However, these effects reversed themselves as the transition entered a new phase, with the actual withdrawal of international troops.

This article makes several contributions to the economics of conflict literature. Prior work has largely focused on economic causes of civil conflict, and government use of economic incentives, typically development aid, to quell violence during the course of an insurgency. Largely ignored are questions about the conditions under which security transitions can successfully transfer military power to local forces. We are able to explore these questions by bringing together highly detailed conflict microdata with survey measures that enable us to test how combat activity changes during a security transition, and, perhaps more importantly, to explore how public perceptions and attitudes are influenced by the foreign-to-local handover. This paper opens up a new set of research questions about the industrial organization of coalitions at war. Moreover, it raises basic questions about how transitions resolve the hazards of jointly producing security.

Our results also suggest several actionable insights for managing international military interventions. First, announcing a prolonged timeline for withdrawal may

[19]See https://nbcnews.to/39zvnwZ and https://nbcnews.to/2VjIlqa.

create opportunities for opposition forces to strategically respond to the intervention. In particular, insurgents may simply wait out the withdrawal – a contention that has been frequently raised by some US politicians, and is now corroborated by our evidence. By conserving their fighting capacity, rebels may implicitly (or explicitly) manipulate the signals that international organizations and coalition forces receive about the relative capabilities of local government forces. Benchmarks may or may not be useful in a context in which rivals are "holding their punches." This point is made more poignant by US Defense Department assessments conducted during the transition, which interpreted the short-run reductions in violence as evidence that local Afghan forces were prepared for their long-term mission of providing security after the coalition withdrawal.

Second, local force preparation should be reconsidered. Our findings suggest that Afghan security forces were *not* adequately prepared for the large-scale withdrawal of ISAF; this is the case even though the US Congress alone allocated $60.7 billion to training and arming the Afghan security forces, including their national military and police forces. The Special Inspector General for Afghan Reconstruction (SIGAR) has conducted several high-profile investigations of the US effort to enhance Afghan forces, noting "ghost" soldiers, poor training, and widespread corruption in hiring. [20] The recent declassification of the Afghanistan Papers, a compilation of retrospective interviews conducted by SIGAR, makes this point even clearer; resources were siphoned from official projects to enrich political elites, warlords, and the Taliban. Of the roughly 400 interviews conducted, 129 explicitly mention concerns about the role of corruption in undermining economic growth, political stability, and security provision in Afghanistan. Corruption represents a first-order threat to successful security transitions and sustainable state-building efforts. The handover of foreign-owned assets (including vehicles, weaponry, ammunition, and basic supplies) was also a notable legal hurdle, which may have hindered the preparation of Afghan forces for long-term security provision. Reevaluating how local forces receive training, and regularly auditing these forces may stabilize future security transitions.

Finally, future security transitions should maintain stronger data collection efforts

[20] See https://bit.ly/37kLED3.

even after international forces withdraw. This study reinforces the importance of robust, ongoing data collection and government commitments to data dissemination. Although our survey data enable us to track public perceptions until 2016, our tactical records effectively end earlier. The platform used to collect combat operation activity was used less consistently after the end of the NATO mission. While we are able to estimate the short- and medium-run consequences of the transition using these military records, longer-term dynamics cannot be studied. The way that military interventions end likely have profound consequences on economic development and political stability. It is therefore imperative to continually collect and share data, even after security transitions end, to inform future economic and policy decisions.

References

Bazzi, S. and C. Blattman (2014). Economic Shocks and Conflict: Evidence from Commodity Prices. *American Economic Journal: Macroeconomics 6*(4), 1–38.

Beath, A., F. Christia, and R. Enikolopov (2013). Winning Hearts and Minds Through Development: Evidence from a Field Experiment in Afghanistan. *mimeo*.

Berman, E. and A. M. Matanock (2015). The Empiricists' Insurgency. *Annual Review of Political Science 18*(1), 443–464.

Berman, E., J. Shapiro, and J. Felter (2011). Can hearts and minds be bought? The economics of counterinsurgency in Iraq. *Journal of Political Economy 119*(4), 766 – 819.

Berman, N., M. Couttenier, D. Rohner, and M. Thoenig (2017). This Mine is Mine! How Minerals Fuel Conflicts in Africa. *American Economic Review 107*(6), 1564–1610.

Besley, Timothy; Persson, T., T. Besley, and T. Persson (2010). State Capacity, Conflict, and Development. *Econometrica 78*(1), 1–34.

Bueno de Mesquita, E. (2013). Rebel Tactics. *Journal of Political Economy 121*, 323–357.

Child, T. B. (2016). We Don't Need No Education : Reconstruction and Conflict across Afghanistan. *mimeo*.

Collard-Wexler, S. (2013). Understanding Resistance to Foreign Occupation. *PhD Dissertation (Columbia University)*.

Collier, P. and A. Hoeffler (2004). Greed and grievance in civil war. *Oxford Economic Papers 56*(563-595).

Condra, L. N., J. D. Long, A. C. Shaver, and A. L. Wright (2018). The logic of insurgent electoral violence. *American Economic Review*.

Condra, L. N. and A. L. Wright (2019). Civilians, Control, and Collaboration during Civil Conflict. *International Studies Quarterly 63*(4), 897–907.

Crost, B. and P. Johnston (2014). Aid under fire: Development projects and civil conflict. *American Economic Review 104*(6), 1833–1856.

de Paula, A., I. Rasul, and P. Souza (2019). Recovering Social Networks from Panel Data: Identification, Simulations and an Application. *mimeo*.

Dell, M. and P. Querubin (2018). Nation Building Through Foreign Intervention: Evidence from Discontinuities in Military Strategies. *The Quarterly Journal of Economics 133*(2), 701–764.

Dobbins James, S. Jones, K. Crane, C. Chivvis, A. Radin, S. Larrabee, N. Bensahel, B. Lawson, and B. Goldsmith (2008). Europe's Role in Nation-Building: From the Balkans to the Congo. Chapter 2. Albania, pp. 7–24. RAND Corporation.

Dube, O. and S. Naidu (2015). Bases, Bullets, and Ballots: The Effect of US Military Aid on Political Conflict in Colombia. *The Journal of Politics 77*(1), 249–267.

Esteban, J., M. Morelli, and D. Rohner (2015). Strategic Mass Killings. *Journal of Political Economy 123*(5), 1087–1132.

Fearon, J. and D. Laitin (2003). Ethnicity, insurgency and civil war. *American Political Science Review 97*(1), 75–90.

Ferrara, E. L. and M. Harari (2018). Conflict, Climate, and Cells: A Disaggregated Analysis. *The Review of Economics and Statistics 100*(4), 594–608.

Fetzer, T. (2020). Can Workfare Programs Moderate Conflict? Evidence from India. *Journal of the European Economic Association*.

Gennaioli, N. and H.-J. Voth (2015). State Capacity and Military Conflict. *The Review of Economic Studies 82*(4), 1409–1448.

Gompert, D. C., H. Binnendijk, and B. Lin (2014). The Soviet Invasion of Afghanistan, 1979. In *Blinders, Blunders, and Wars: What America and China Can Learn*, pp. 129–138. RAND Corporation.

Gould, E. D. and E. F. Klor (2010). Does Terrorism Work? *The Quarterly Journal of Economics 125*(4), 1459–1510.

Jaeger, D. A., E. F. Klor, S. H. Miaari, and M. D. Paserman (2015). Can Militants Use Violence to Win Public Support? Evidence from the Second Intifada. *Journal of Conflict Resolution 59*(3), 528–549.

König, M. D., D. Rohner, M. Thoenig, and F. Zilibotti (2017). Networks in Conflict: Theory and Evidence From the Great War of Africa. *Econometrica 85*(4), 1093–1132.

Lake, D. A. (2016). *The Statebuilder's Dilemma: On the Limits of Foreign Intervention*. Ithaca, NY: Cornell University Press.

Lake, D. A. (2019). Proxy Wars: Suppressing Violence through Local Agents. Chapter Iraq, 2003. Cornell University Press.

Limodio, N. (2019). Terrorism Financing, Recruitment and Attacks: Evidence from a Natural Experiment. *mimeo*.

Loven, F. V. (2013). The Logistical Challenges Confronting the Afghanistan Drawdown. Technical report, Civil-Military Fusion Centre.

Lyall, J. (2009). Does Indiscriminate Violence Incite Insurgent Attacks? Evidence from Chechnya. *Journal of Conflict Resolution 53*(3), 331–362.

Lyall, J., Y. Shiraito, and K. Imai (2015). Coethnic Bias and Wartime Informing. *Journal of Politics 77*(3), 833–848.

Manacorda, M. and A. Tesei (2020). Liberation Technology: Mobile Phones and Political Mobilization in Africa. *Econometrica 88*(2), 533–567.

Manski, C. F. (1993). Identification of Endogenous Social Effects: The Reflection Problem. *The Review of Economic Studies 60*(3), 531.

Marinov, N., W. G. Nomikos, and J. Robbins (2015). Does Electoral Proximity Affect Security Policy? *The Journal of Politics 77*(3), 762–773.

Padró i Miquel, G. and P. Yared (2012). The political economy of indirect control. *Quarterly Journal of Economics 127*(2), 947–1015.

Perlmutter, T. (1998). The Politics of Proximity: The Italian Response to the Albanian Crisis. *The International Migration Review 32*(1), 203–222.

Powell, R. (2006). War as a Commitment Problem. *International Organization 60*(1), 169–203.

Powell, R. (2013). Monopolizing Violence and Consolidating Power. *Quarterly Journal of Economics 128*(2), 807–859.

Sexton, R. (2016). Aid as a Tool against Insurgency: Evidence from Contested and Controlled Territory in Afghanistan. *American Political Science Review 110*(4), 731–749.

Shaver, A. and A. Wright (2016). Are Modern Insurgencies Predictable? New Evidence from the Afghanistan and Iraq Wars. *mimeo*.

SIGAR (2016). Department of Defense Base Closures and Transfers in Afghanistan. Technical report, Special Inspector General For Afghanistan Reconstruction, Washington DC.

Smith, S. (2014). Afghanistan after the Occupation: Examining the Post-Soviet Withdrawal and the Najibullah Regime It Left Behind, 1989-1992. *Historian 76*(2).

Vanden Eynde, O. (2018). Targets of Violence: Evidence from India's Naxalite Conflict. *The Economic Journal 128*(609), 887–916.

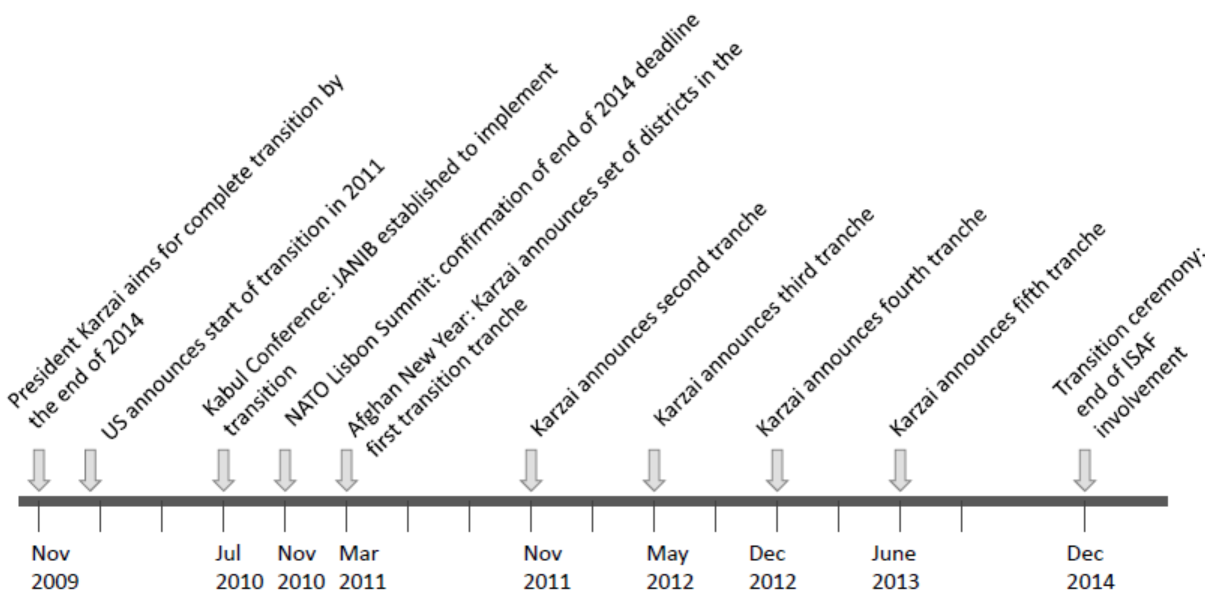
Werner, S. (1999). The Precarious Nature of Peace: Resolving the Issues, Enforcing the Settlement, and Renegotiating the Terms. *American Journal of Political Science 43*(3), 912–934.

Wittman, D. (1979). How a War Ends: A Rational Model Approach. *Journal of Conflict Resolution 23*(4), 743–763.

Wright, A. L. (2016). Economic Shocks and Rebel Tactics: Evidence from Colombia. *HiCN paper 232*.

7 Figures and Tables for the Main Text

Figure 1: Key dates in the transition process.

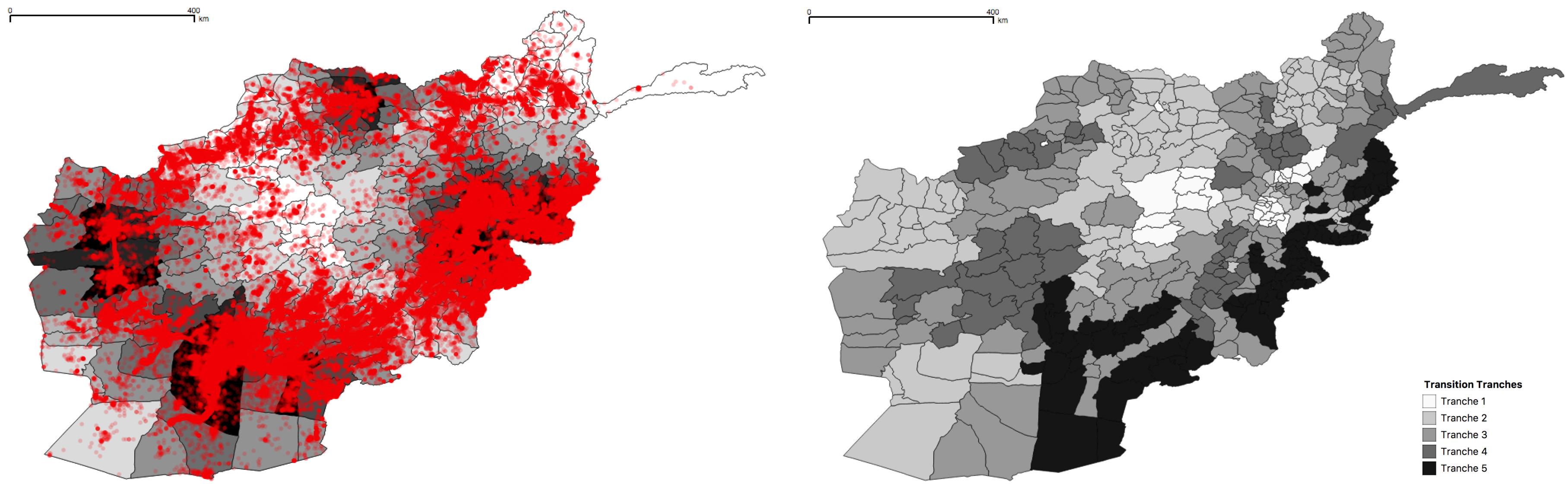


Notes: Dates of the different transition stages were obtained from the NATO publication "Inteqal: Transition to Afghan lead." The authors complemented the graphical timeline with auxiliary information.

Figure 2: Distribution of conflict intensity and assignment of districts to different tranches of the security transfer to the Afghan National Security Forces (ANSF).

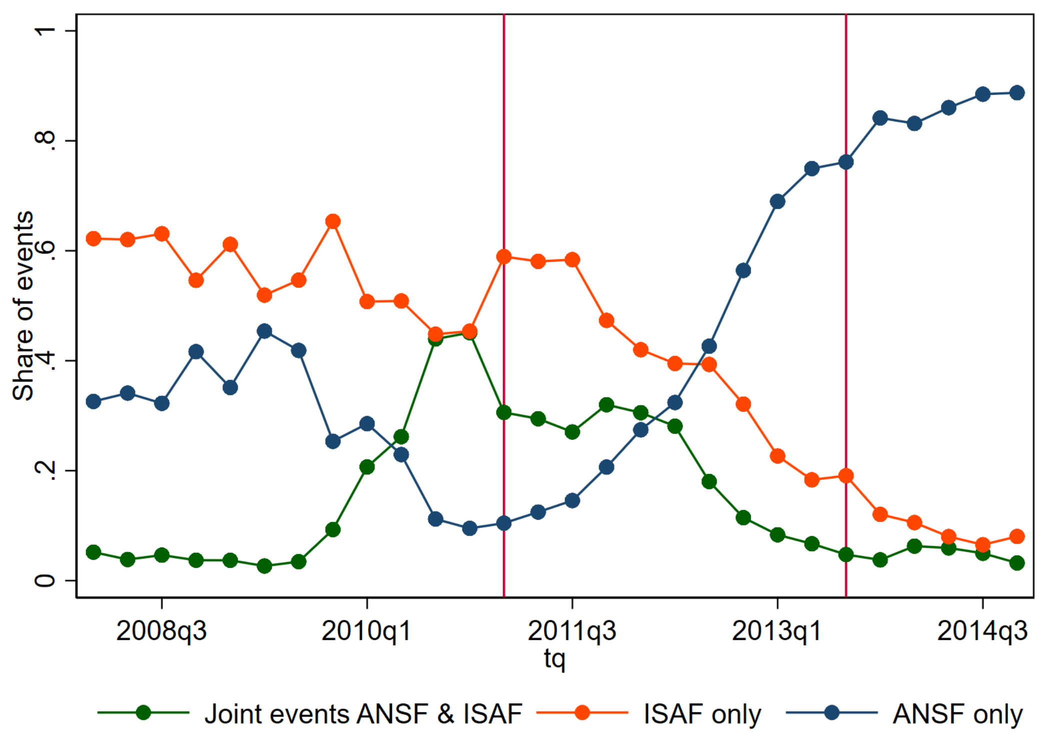
Panel A: Conflict intensity

Panel B: Assignment of districts to tranches



Notes: Panel A presents the distribution of conflict events in the SIGACTS data across the country. Panel B presents the different assignments of districts to the five different transition tranches.

Figure 3: Share of SIGACTS events involving security forces.

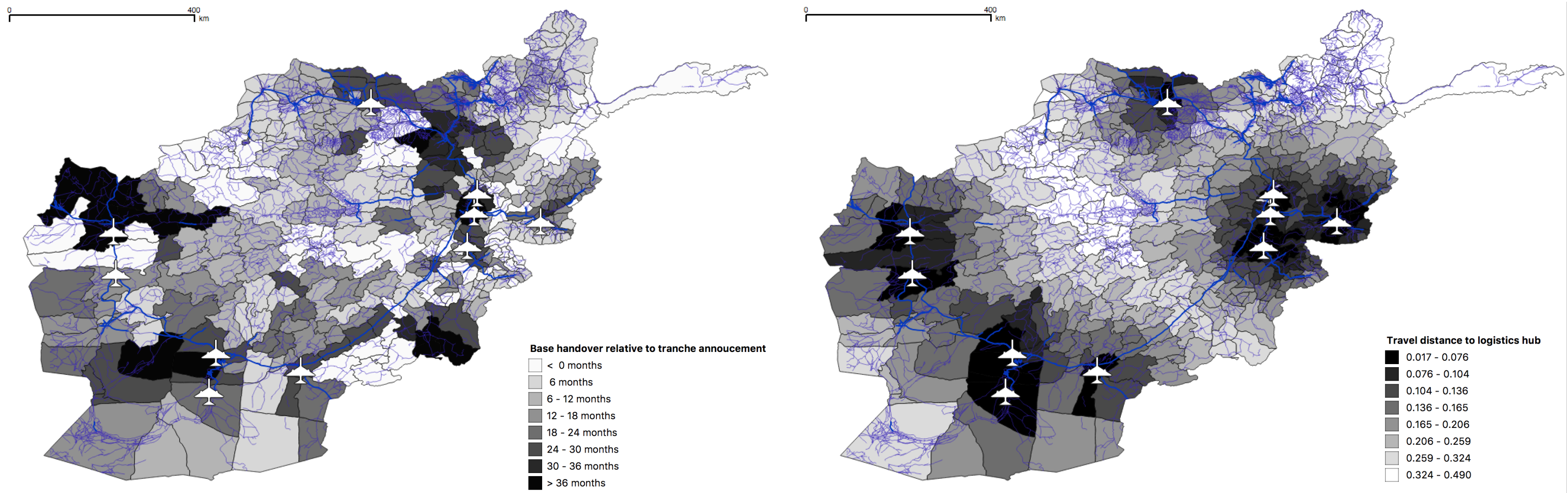


Notes: The figure plots the share of events per quarter by security force involvement. This measure is based on all events (including non-combat activities). Afghan security forces (ANSF) include all armed forces, including local and border police. Vertical lines indicate the quarter of the first and the last transition tranches.

Figure 4: Timing of base closure relative to district tranche announcement and travel distance to nearest retrograde logistic hub

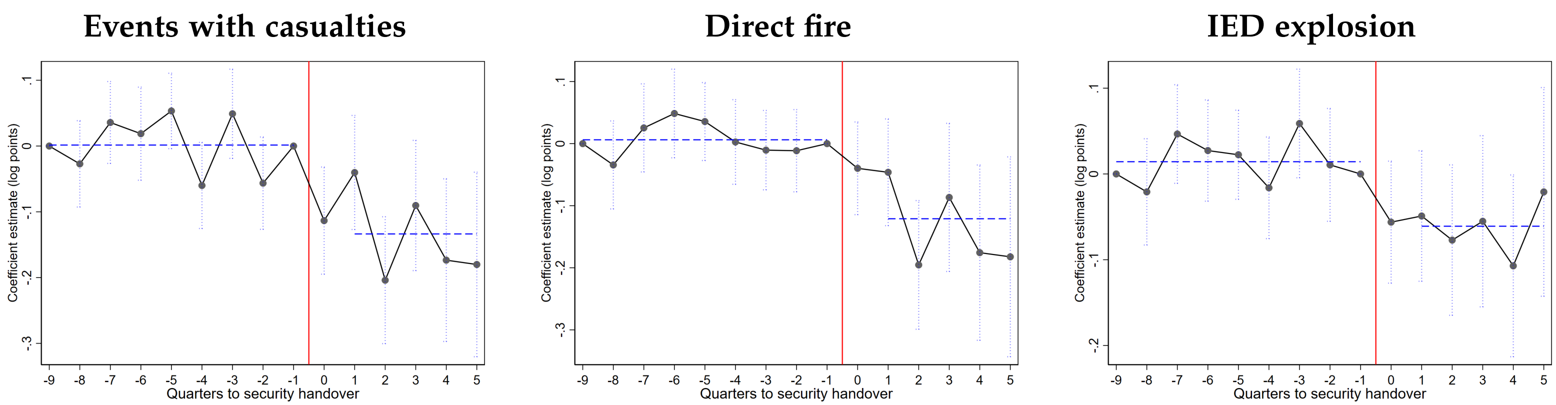
Panel A: Last base closure date relative to tranche date

Panel B: Distance to nearest logistic hub



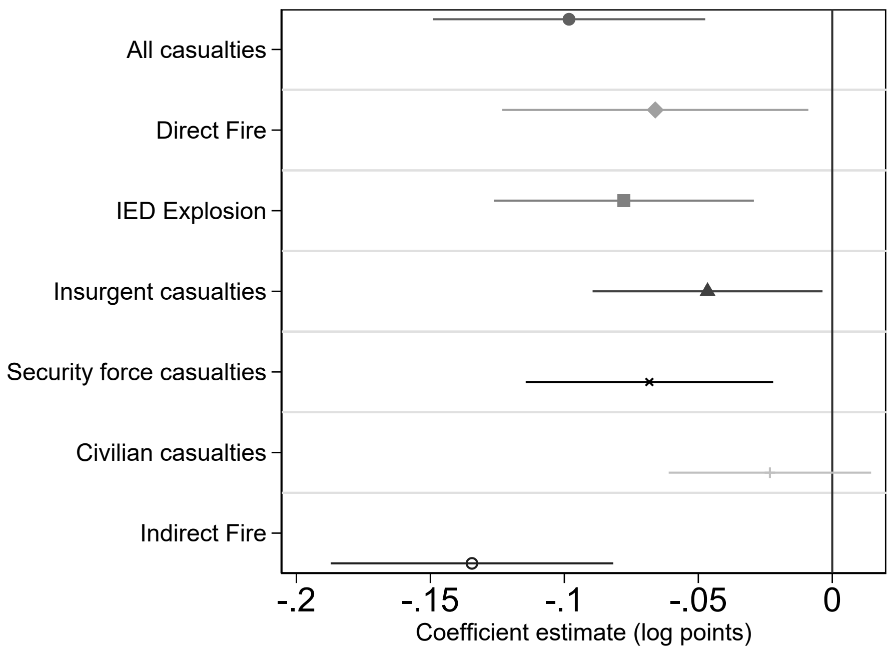
Notes: Panel A visually presents the variation in the timing of the base closure ("Troop withdrawal") dates relative to the transition onset announcements ("Security handover"). If a district is matched with several bases, the timing is determined by the date of the last recorded base that was retrograded or handed over. Panel B presents visually the least-cost, shortest path distance between a district centroid to one of the 10 retrograde logistic hubs used in the withdrawal operation. We assume a unit cost of crossing via paved roads; the cost of crossing via an unpaved road occurs two units of costs per unit of distance, while crossing terrain without roads incurs a cost of 10 units. Least-cost paths are computed used Dijkstra's algorithm.

Figure 5: Event studies around the security transfer to Afghan National Security Forces (SIGACTS)



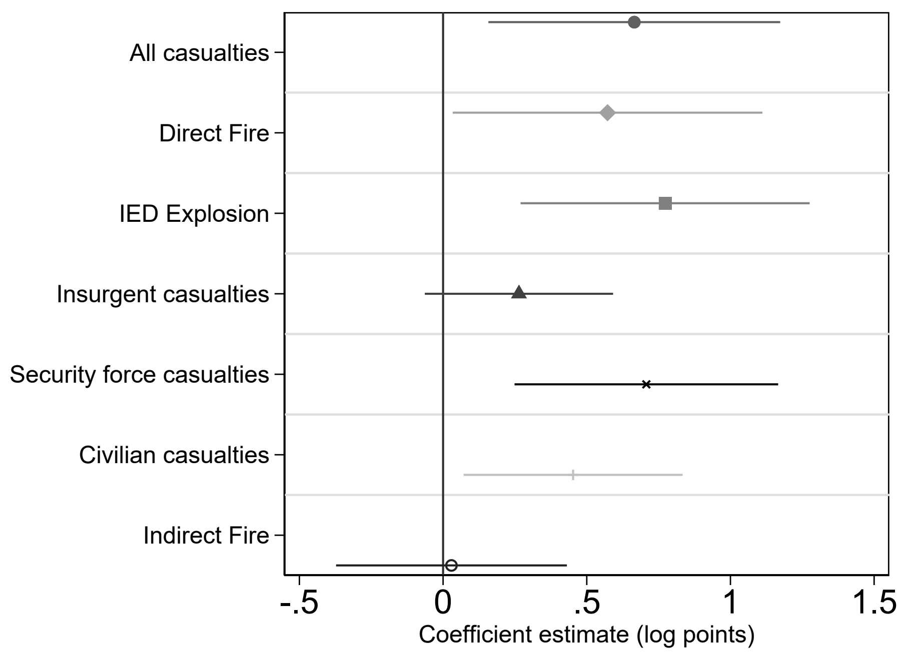
Notes: Event studies around the "Security handover" to the Afghan National Security Forces, using quarterly district-level data (2008-2014). Coefficients on "time to Security handover" are shown with 90% confidence intervals. The models are analogous to column (1) in Table 1, but they include time-to-treatment dummies. Outcomes are subject to a Log(x+1) transformation. Regressions include district fixed effects and regional command $\times$ time fixed effects.

Figure 6: Effect of the security transfer to Afghan National Security Forces on Conflict (SIGACTS)



Notes: Coefficients and 90% confidence intervals on "Security handover" in a model that is analogous to column (2) in Table 1. Data are at the district-quarter level (2008-2014). Regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. Outcomes are subject to a Log(x+1) transformation. Full results can be found in the Online Appendix, in Table A3.

Figure 7: Coalition troop withdrawal and conflict (SIGACTS)



Notes: Coefficients and 90% confidence intervals on "Troop withdrawal" in a model that is analogous to column (1) in Table 4. Data are at the district-quarter level (2008-2014). All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport × time fixed effects, and distance to province borders × time fixed effects. Outcomes are subject to a Log(x+1) transformation. Full results can be found in the Online Appendix Table A3.

Table 1: Security transfer to Afghan National Security Forces and conflict (SIGACTS)

	Log(x+1)					
	All fatal events		Direct fire attacks		IED explosions	
	(1)	(2)	(3)	(4)	(5)	(6)
Security handover	-0.138	-0.098	-0.134	-0.066	-0.074	-0.078
	(0.032)	(0.031)	(0.036)	(0.035)	(0.029)	(0.029)
Mean DV	0.920	0.920	1.145	1.145	0.686	0.686
Std Dev DV	1.137	1.137	1.319	1.319	0.984	0.984
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
District time trend	No	Yes	No	Yes	No	Yes

Notes: Regressions at the district-quarter level, covering the period 2008-2014. All regressions include district fixed effects and regional command × time fixed effects. Outcomes are subject to a Log(x+1) transformation. Standard errors are clustered at the district level and presented in parentheses.

Table 2: Security transfer to Afghan National Security Forces and perception of security (ANQAR)

	Security		Afghan National Security Force presence and control		
	Improved security	Taliban weaker	See Afghan National Army Monthly	Afghan National Security Forces bring security	Taliban control
	(1)	(2)	(3)	(4)	(5)
Security handover	0.027	0.025	0.031	0.024	-0.002
	(0.015)	(0.017)	(0.018)	(0.014)	(0.013)
Mean DV	0.321	0.432	0.697	0.508	0.189
Std Dev DV	0.221	0.235	0.318	0.236	0.227
Observations	8523	7835	8308	8522	8523
Number of Districts	375	375	375	375	375

Notes: Regressions at the district-quarter level, covering the period 2008-2016. All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The dependent variables measure shares of respondents at the district level. Standard errors are clustered at the district level and presented in parentheses.

Table 3: Coalition troop withdrawal: first stage

	Troop withdrawal		
	(1)	(2)	(3)
Travel distance to military airport × Post 2011	1.728	1.898	2.007
	(0.237)	(0.235)	(0.236)
Security handover	0.193	0.190	
	(0.028)	(0.029)	
Mean DV	0.388	0.388	0.388
Std Dev DV	0.487	0.487	0.487
F-statistic on instrument	53.325	65.292	72.141
Number of Observations	13572	13572	13572
Number of Districts	377	377	377
IV control set × time FE	No	Yes	Yes
Tranche × time FE	No	No	Yes

Notes: Regressions at the district-quarter level, covering the period 2008-2016. All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The additional IV control set includes the distance to any airport and to the province border. The dependent variable is "Troop withdrawal", which is a binary indicator for the last recorded base closure, retrograde, or handover at the district level. Standard errors are clustered at the district level and presented in parentheses.

Table 4: Coalition troop withdrawal and conflict (SIGACTS)

	Log(x+1)					
	All Casualty Events		Direct Fire Attacks		IED Explosions	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: District level – OLS						
Troop withdrawal	0.003	-0.000	-0.006	0.001	-0.008	-0.008
	(0.035)	(0.037)	(0.041)	(0.043)	(0.029)	(0.031)
Security handover	-0.103		-0.057		-0.094	
	(0.031)		(0.036)		(0.029)	
Mean DV	0.920	0.920	1.145	1.145	0.686	0.686
Std Dev DV	1.137	1.137	1.319	1.319	0.984	0.984
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
Tranche × time FE	No	Yes	No	Yes	No	Yes
Panel B: District level – IV						
Troop withdrawal	0.666	0.616	0.572	0.495	0.773	0.730
	(0.308)	(0.296)	(0.327)	(0.310)	(0.305)	(0.287)
Security handover	-0.205		-0.146		-0.214	
	(0.059)		(0.063)		(0.062)	
Mean DV	0.920	0.920	1.145	1.145	0.686	0.686
Std Dev DV	1.137	1.137	1.319	1.319	0.984	0.984
Weak IV statistic	48.751	57.882	48.751	57.882	48.751	57.882
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
Tranche × time FE	No	Yes	No	Yes	No	Yes

Notes: Regressions at the district-quarter level, covering the period 2008-2014. All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport × time fixed effects, and distance to province borders × time fixed effects. Outcomes are subject to a Log(x+1) transformation. The weak IV statistic is the Kleibergen-Paap rk Wald F-statistic. Standard errors are clustered at the district level and presented in parentheses.

Table 5: Coalition troop withdrawal and security perceptions (ANQAR)

	Security		Afghan National Security Forces presence and control		
	Improved security	Taliban weaker	See Afghan National Army Monthly	Afghan National Security Forces bring security	Taliban control
	(1)	(2)	(3)	(4)	(5)
Panel A: District Level					
Troop withdrawal	-0.177	-0.205	0.160	-0.121	-0.067
	(0.054)	(0.056)	(0.078)	(0.056)	(0.057)
Security handover	0.062	0.061	-0.008	0.044	0.009
	(0.019)	(0.020)	(0.022)	(0.019)	(0.018)
Mean DV	0.321	0.432	0.697	0.508	0.189
Std Dev DV	0.221	0.235	0.318	0.236	0.227
Weak IV statistic	63.465	63.577	63.390	63.476	63.465
Observations	8523	7835	8308	8522	8523
Number of Districts	375	375	375	375	375
Panel B: District Level, Tranche × time FE					
Troop withdrawal	-0.171	-0.184	0.132	-0.127	-0.062
	(0.053)	(0.055)	(0.075)	(0.053)	(0.056)
Mean DV	0.321	0.432	0.697	0.508	0.189
Std Dev DV	0.221	0.235	0.318	0.236	0.227
Weak IV statistic	71.736	72.213	71.722	71.743	71.736
Observations	8523	7835	8308	8522	8523
Number of Districts	375	375	375	375	375

Notes: Regressions at the district-quarter level, covering the period 2008-2016. All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport × time fixed effects, and distance to province borders × time fixed effects. The dependent variables measure shares of respondents at the district level. The weak IV statistic is the Kleibergen-Paap rk Wald F-statistic. Standard errors are clustered at the district level and presented in parentheses.

Table 6: Security force activity

	Improper behavior by ANA (1)	ANA needs full international support (2)	ANA will most likely defeat insurgents (3)	CERP spending Log(x+1) (4)
Troop withdrawal	0.009	0.099	-0.056	1.419
	(0.092)	(0.048)	(0.054)	(2.255)
Security handover	-0.012	-0.009	0.015	-0.567
	(0.019)	(0.015)	(0.016)	(0.480)
Mean DV	0.156	0.243	0.380	3.502
Std Dev DV	0.195	0.191	0.229	5.359
Weak IV statistic	27.208	63.476	63.465	48.751
Observations	6486	8521	8523	10556
Number of Districts	360	375	375	377

Notes: Regressions at the district-quarter level, covering the period 2008-2016 (2008-2014 for column 4). All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport × time fixed effects, and distance to province borders × time fixed effects. The dependent variables in columns (1)-(3) measure the share of respondents in the ANQAR survey at the district level. Column (4) contains CERP spending, which is subject to a Log(x+1) transformation. The CERP data include projected spending in 2014. The weak IV statistic is the Kleibergen-Paap rk Wald F-statistic. Standard errors are clustered at the district level and presented in parentheses.

Appendix to "Security Transitions"

For Online Publication

A Spillover Controls

We bring a new spatial econometric tool to the broader conflict literature in economics and political science, helping researchers account for latent dependency in the spillovers of violence across space. Existing approaches require the researcher to pre-specify the dependence structure (e.g., physical proximity) and are insufficient in the presence of autocorrelation driven by factors unknown to the researcher (see, for example, Berman et al., 2017; Mueller et al., 2017; Ferrara and Harari, 2018). This is likely the case when studying conflict dynamics, where the use of violence may be linked across locations through factors beyond physical distance. We instead extend the framework by de Paula et al. (2019) to learn about the pattern of spillovers from within the data itself, applying it to a context where potential biases from conflict displacement could be significant.

We write the Equation (4) in a more concise notation by collecting the $w_{i,j}$ in a $N \times N$ matrix W. In our case, i represents a district; hence, $w_{i,j}$ is stated as $w_{d,j}$ in the manuscript for ease of interpretation. Matrix W is often known as the spatial, neighboring or adjacency matrix. We also stack the other elements to write the model

$$y_t = \alpha + \beta_t + \rho W y_t + \gamma \text{Handover}_t + \delta W \cdot \text{Handover}_t + \eta \times t + \epsilon_t \quad \text{(A1)}$$

where y_t, α, β_t, Handover_t and ϵ_t are, respectively, the column-vector of outcomes, district fixed effects, regional command time trends, $\text{Handover}_{d,t}$ treatment indicators and error term, for all regions and districts at a given point in time.

A few special cases of Equation (A1) are of interest. First, if $\delta = \rho = 0$ there are no spillover effects and the specification above boils down to Equation (1). Second, setting only $\rho = 0$ leads to spillover specification with controls for exogenous effects. We offer both the versions with $\rho = 0$ and freely estimated without restrictions, such as typical in models of social interactions (Blume et al., 2015). It is worth also mentioning that if either ρ or δ are not equal to zero, than identification of the treatment effects through the standard difference-in-differences in model (1) might be compromised as untreated units suffer from spillovers from the treated ones, and the comparison between treated and control no longer accounts for the treatment (transition) effects (SUTVA violation). This is particularly relevant as, throughout the exercise, our interest is in evaluating the robustness of the estimates of γ with respect to alternative formulations of the spillover effects.

The choice of the set of weights $w_{i,j}$ attracts particular prominence in our context because it reflects the extent to which the insurgents are able to displace across districts. This is the case for example, in Mueller et al. (2017), Ferrara and Harari (2018) where $w_{i,j}$ depends on some inverse function of distance; or in Berman et al. (2017) where it reflects ethnic control of mines in Africa. In turn, this would translate into specific assumptions on the mechanism that underpins conflict displacement. This is particularly limiting as it is not ex-ante clear how the insurgency displaces in space. In reality, insurgent activity is potentially highly mobile, and the transition to ANSF might have induced a strategic reallocation of insurgent activity to districts elsewhere. Furthermore, it would be in their interest to obfuscate their displacement strategy, so as not to make their movements predictable by the occupying forces. In such case, the weights can hardly be assumed to be ex-ante known by the empiricist.

We both pre-specifying W according to various measures of distance and, to overcome the issue that the patterns of spatial dispersion are not necessarily observed, we also opt to recover it from the data. To do so, we apply the method in de Paula et al. (2019) which allows us to fully and flexibly recover the network matrix W from the panel data. The method provides a high-dimensional technique to deal with a large number of parameters. Furthermore, the authors show that W and the parameters ρ, γ and δ are globally identified. The purpose of this Section is to review and provide an adaptation of their methodology.

The method in de Paula et al. (2019) postulates that W, ρ, γ and δ are globally identified under the assumption of the variation in the composition of reference groups to identify the spatial effects. Such type of assumptions which originate from the network asymmetry have been shown to overcome the "reflection problem" as first postulated by Manski (1993). In line with de Paula et al. (2019), we additionally require the following standard regularization conditions: *(i)* no district affects itself, and so the main diagonal of W is equal to zero, $W_{ii} = 0$ for every $i = 1, \ldots, N$, ruling out a trivial solution to the model; *(ii)* the row-sums of W are smaller than one in absolute value, $\sum_{j=1}^{N} |W_{ij}| \leqslant 1$ for every $i = 1, \ldots, N$ and $|\rho| < 1$, ensuring that the system of equations is stationary in the spatial sense and the inverse of $(I - \rho W y_t)$ is well defined; *(iii)* there is one row i such that $\sum_{j=1}^{N} W_{ij} = 1$, which is a simple normalization; and, finally, *(iv)* the spatial effects do not cancel each other out, $\rho\gamma + \delta \neq 0$. We apply the method on the residualized y_t and x_t after projecting on the space generated by the fixed effects. We make use of moment conditions given by the orthogonality between Handover_t and the error term to formulate moment conditions $g_{NT}(\theta)$ where the full set of structural parameters is given by $\theta = (\rho, \gamma, \delta, w_{12}, \ldots, w_{N,N-1})$. The first step in the Adaptive Elastic Net GMM is the solution to

$$\tilde{\theta}(p) \quad = \quad (1 + p_2/T) \cdot \underset{\theta \in \mathcal{R}^K}{\arg\min} \left\{ g_{NT}(\theta)' g_{NT}(\theta) + p_1 \sum_{i,j=1, i \neq j}^{N} |w_{i,j}| + p_2 \sum_{i,j=1, i \neq j}^{N} w_{i,j}^2 \right\}$$

where K is the number of parameters to be estimated, equal to $N(N-1) + 3$, and p_1 and p_2 are the non-negative penalization terms. The term $g_{NT}(\theta)' g_{NT}(\theta)$ is the GMM objective criteria. The first penalization term linearly increases the objective function for every $w_{i,j}$ estimated as non-zero. As the penalization increases, more elements $w_{i,j}$ are estimated as zeros. The second term penalizes for the sum of the square of the links between units. This term has been shown to provide a more stable solution to the problem.

Finally, it has been shown that the solution to the first step alone would bias the estimates towards zero. To alleviate this problem, the estimates from the first step are refined in the adaptive stage,

$$\tilde{\theta}(p) \quad = \quad (1 + p_2/T) \cdot \underset{\theta \in \mathcal{R}^K}{\arg\min} \left\{ g_{NT}(\theta)' g_{NT}(\theta) + p_1^* \sum_{i,j=1, i \neq j}^{N} \frac{|w_{i,j}|}{|\tilde{w}_{i,j}|^{-k}} + p_2 \sum_{i,j=1, i \neq j}^{N} w_{i,j}^2 \right\}$$

where typically $k = 2.5$, and the full set of penalization parameters (p_1, p_1^*, p_2) is chosen by BIC.

The results of the analysis are presented in Tables A4 and A5. The first column shows the results of Equation (A1) without spillover controls, thus equal to the difference-in-differences and IV specifications. Columns (2)-(7) present the results of the specification with exogenous effects and for various pre-conditioned distance matrices W. These assume that the spillover affect neighbor districts, neighbor or neighbor-of-neighbor districts, neighbor province, distance below 250km and 500km and driving distance below 500km. Columns (8)-(10) apply the method in de Paula et al. (2019), restricting the interaction of districts beyond 500km and 1000km driving distance to zero. Column (10) includes endogenous effects. In both tables, and across most specifications, we find that the main treatment effects – the security handover in Table A4, and troop withdrawal in Table A5 – remain robust to the inclusion of spillover controls.

B Distant Gridcell Pair Matching

In an attempt to relax the identification assumption that underlies our main district level difference-in-differences approach, we change the unit of analysis to 10×10 km gridcells. The choice of 10 x 10 km gridcells is appealing as this resolution is the basis of the geo-coordinate standard used by NATO militaries for locating points on the earth. This is only possible for the SIGACTS data, as the ANQAR survey data is reported at the district level. In the resulting high-resolution dataset, we construct pairs of matched gridcells. We rely on purely geographical characteristics of gridcells measured at baseline, such as: grid level population (as of 2008), elevation, distance to nearest asphalt road, distance to nearest road, and distance to the nearest airport. In addition we use land cover data and construct the share of grid cells covered by different land cover type across sixteen land cover classes using the detailed 500m pixel resolution MODIS product (Channan et al., 2014). We proceed by constructing these matched pairs sequentially sampling without replacement: we first find matches for grid cells in the first transition waves by sampling from cells in later waves, only retaining matched pairs that are sufficiently similar with a propensity score difference of less than 0.001.[1] Our main estimating sample is chosen such that matched pairs are at least 200km apart (we call these distant matched pairs). This strategy allows us to rule out displacement effects, which could affect estimates relying on close matched pairs.

The estimating specification for the distant matched panel difference-in-differences is as follows:

$$y_{i,p,d,t} = \alpha_i + \beta_{p,t} + \gamma \times \text{Handover}_{d,t} + \eta_d \times t + \epsilon_{i,p,d,t} \tag{A2}$$

As before, the level of analysis is gridcell i, that is part of a matched pair p located in district d, and month t. We include matched-pair specific time fixed effects $\beta_{p,t}$. These are very demanding, as for every matched pair, we allow conflict to be on a different trajectory common only to the cells that form the matched pair. This zooms in to any time-varying changes that are specific to the matched-pair and accounts for any non-linear trends specific to the propensity score. As in earlier specifications, $\text{Handover}_{d,t}$ switches on when ANSF takes over from ISAF. Since the distant matched pair panel is very granular (both in terms of time and geography), we use dummy variables as outcomes capturing the incidence of a conflict event within a given gridcell-month as a more meaningful measure of conflict activity. The crucial identifying assumption remains that there are common trends in conflict levels across observationally similar distant matched grid cells in the different transition phases. Table A9 shows that we achieve improved balance on conflict characteristics compared to the district level when resorting to the distant matched pair analysis, yet, some important baseline differences still exist. As with the district-level difference-in-differences strategy, event studies around the transition dates (in Figure A3) and the estimation of pre-treatment effects (in Panel B of Figure A4) provide evidence in support of the common trend assumption. Results for the gridcell analysis are presented in Table A10, along with event study graphs in Figure A3. The gridcell-level outcomes show reductions in

[1] This approach could result in a decay in match quality for later transition rounds, as the set of available grid cells for matching becomes smaller. It turns out that the average estimated propensity score does not systematically differ between early versus late transition rounds.

violence that are larger although it should be kept in mind that this is at the extensive margin of our violence outcomes.

C Supplemental discussion of mechanisms

C.1 Complementarities in war fighting

In the main text, we highlight several types of complementarities. In this section, we expand on the discussion of the main text and link our argument to the existing literature on insurgent tactics.

Complementarities could arise because ISAF monitors the ANSF and provides military support after local forces take operational command. In particular, we might expect that foreign forces would offer additional evaluation of Afghan forces (leading to improved conduct assessments), provide additional material support in terms of development assistance, and be marginally more likely to respond to violent events that trigger combat support following the security handover. We could find no clear evidence of these types of complementarities — shifts in monitoring, aid delivery, or war fighting support (see Tables 6 and A12). In the text, we also present a brief sketch of a distinct complementarity: an unobserved shock to state capacity occurred just after each local transition announcement and reversed after foreign withdrawal. Here we provide some additional context and references. A shock of this type might be a large shift in the stock of weapons available to Afghan forces, which were depleted by the time coalition forces exit. Another shock might be coordinated crackdowns during the transition period, possibly boosted by the combined troop levels of ANSF and ISAF. However, shocks of this type would have observable implications for the levels and composition of insurgent attacks. Theoretical accounts, most importantly Powell (2007) and Bueno de Mesquita (2013), suggest insurgents should substitute conventional, labor-intensive combat (e.g., direct fire engagements) for guerrilla style attacks (e.g., IEDs) when faced with capacity shocks. Empirical findings from a variety of contexts yield evidence consistent with such a tactical shift (Iyengar et al., 2011; Wood, 2014; Wright, 2016; Vanden Eynde, 2018). In our setting, we would expect a shock to the Taliban's capacity to induce a downward shift in direct fire and an increase in roadside bomb deployment. We find no evidence of such a composition shift (see Tables 1 4). Instead, conventional and guerrilla attacks each decline during the first phase of the transition and jointly increase after the actual closure of bases. This pattern is more consistent with a strategic choice by the Taliban to reduce all types of violence after the transition, and to step up violence after the troop withdrawal. Overall, we find the complementarity mechanism lacks a compelling empirical foundation.

C.2 Lying Low

The central role of the simple model presented in the text is to situate the conflict patterns we observe in a formalized framework. In this section, we introduce qualitative evidence regarding the information about the relative capacity of ANSF and Taliban forces available to ISAF forces during the security transition. This evidence addresses one of the central assumptions of our simple formalization of the lying low mechanism: the relative capacity of Afghan combatants—ANSF and Taliban—was uncertain during the security transition. A summary of this evidence is included in the main text, but this section provides a more detailed discussion. We also discuss the relevance of this mechanism in other settings.

C.2.1 Monitoring Relative Capacity

Despite significant resources allocated to monitoring and assessing ANSF forces, this effort was hampered by several factors. Taliban troop force level estimates were very inconsistent at a macro-scale and likely unreliable at the local level (district).[2] Prior to the security transition, Afghan military and expert estimates of Taliban troop levels ranged from 2,000 to 40,000. Following the security transition, US military assessments have suggested the Taliban maintains between 20,000 and 60,000 troops (Sopko, 2019). In 2018, a US official suggested estimating Taliban troop levels is a "fool's errand."[3] Assessing Taliban strength is also complicated by a dearth of credible intelligence about Taliban resources (Giustozzi, 2019). Anticipating what weaponry and

[2]See https://bit.ly/3nvEMJG.

[3]See https://nbcnews.to/3lDCzLt.

force projection the Taliban could deploy in a given fighting season was challenging as the sources of Taliban taxation were varied and difficult to monitor and assess in real time (Buddenberg and Byrd, 2006; Peters, 2009; Mansfield, 2016). In addition to difficulties in tracking Taliban strength, attrition in local security forces made force level monitoring difficult. The Special Inspector General For Afghanistan Reconstruction (SIGAR) 'Lessons Learned' assessment of the transition highlighted several important challenges. From 2004 to 2014, attrition rates hovered between 25% and 33% (SIGAR, 2017, 81, 156). Assessing training, preparation, and armaments was even more difficult due to corruption and self-serving trainer assessments (SIGAR, 2017, 84-85, 171):

> Corrupt behavior was shown to affect force strength numbers via high attrition rates, and to further perpetuate criminal behaviors, such as pay-for-play schemes; the theft of fuel, supplies, and commodities; and narcotics collusion... DOD forecasts and targets for force readiness were largely based on the U.S. military's capacity for recruitment and training, and not based on battlefield performance and other factors corroding the force. Issues such as ghost soldiers, corruption, and high levels of attrition were more critical than training capacity to measure true [ANSF] capabilities.

More broadly, establishing the relative fighting capacity of ANSF and Taliban troops at a local level was complicated by subjective force preparation standards (SIGAR, 2017, 170). These standards—rating definition levels (RDLs)—changed during the transition in a manner that kept assessments from being backwards compatible (SIGAR, 2013, 89). At the same time, there was a shift during the transition from evaluating battalions, which would have been over one or more districts, to brigades ('kandak'), which serve one or more provinces. This change, from the Commander's Unit Assessment Tool (CUAT) to the Regional Command ANSF Assessment Report (RASR), reduced actionable field assessments from the original 827 national army and police units to 85 unit reports (SIGAR, 2013, 90). This "new assessment system not only incorrectly measured [ANSF] capabilities, it masked fundamental weaknesses in the [ANSF] institutional framework that the United States and coalition ignored or minimized" (SIGAR, 2017, 85). These factors significantly reduced the amount of high quality district-specific information about local ANSF preparedness to engage with Taliban forces available to ISAF forces (SIGAR, 2017, 171):

> Because U.S. military plans for [ANSF] readiness were created in an environment of politically constrained timelines—and because these plans consistently underestimated the resilience of the Afghan insurgency and overestimated [ANSF] capabilities—the [ANSF] was ill-prepared to deal with deteriorating security after the drawdown of U.S. combat forces.

C.2.2 Other Examples

The lying low mechanism we describe is plausibly relevant in a range of other contexts. The number of active occupations globally is substantial and is most directly linked to this mechanism if and when foreign forces transition security assistance to local actors. It is also relevant in non-occupation contexts where peacekeeping forces are present and international organizations are assessing the viability of a timetable for shifting basic functions, including policing and public goods delivery, to local actors on one or both sides of the conflict.

The underlying signalling game is also relevant in non-counterinsurgency settings, including the drawdown of NATO forces around the globe. As international actors pull back, they assess the durability of political or economic institutions when confronted by regional or global rivals. These rivals may strategically manipulate signals of institutional resilience until those actors have completely withdrawn and the costs of reconstituting alliance commitments is large.

A similar logic is present when governments develop and field anti-corruption programs. Illicit actors, recognizing the type and duration of the government's intervention, may strategically manipulate perceptions of programming effectiveness. This is particularly relevant if the program is a short-run trial, like a randomized controlled field experiment, used to guide broader reforms. The corrupt network would have an incentive to manipulate inferences by responding strategically to treatment if it is known. This is related to the strategic response described in Cruz et al. (2020), where mayoral candidates, aware of a field experiment in the Philippines, used vote buying to offset the anticipated effects of an informational campaign about use of municipal development funds.[4]

[4]We thank an anonymous reviewer for highlighting these points.

References

Berman, N., M. Couttenier, D. Rohner, and M. Thoenig (2017). This Mine is Mine! How Minerals Fuel Conflicts in Africa. *American Economic Review 107*(6), 1564–1610.

Blume, L. E., W. A. Brock, S. N. Durlauf, and R. Jayaraman (2015). Linear Social Interactions Models. *Journal of Political Economy 123*(2), 444–496.

Buddenberg, D. and W. A. Byrd (2006). Afghanistan's Drug Industry: Structure, Functioning, Dynamics, and Implications for Counter-Narcotics Policy. Technical report, UNODC and The World Bank, Washington, DC.

Bueno de Mesquita, E. (2013). Rebel Tactics. *Journal of Political Economy 121*, 323–357.

Channan, S., K. Collins, , and W. R. Emanuel. (2014). Global mosaics of the standard MODIS land cover type data. Technical report, University of Maryland and the Pacific Northwest National Laboratory, College Park, Maryland, USA.

Collard-Wexler, S. (2013). Understanding Resistance to Foreign Occupation. *PhD Dissertation (Columbia University)*.

Cruz, C., P. Keefer, and J. Labonne (2020). Buying Informed Voters: New Effects of Information on Voters and Candidates. *The Economic Journal*.

de Paula, A., I. Rasul, and P. Souza (2019). Recovering Social Networks from Panel Data: Identification, Simulations and an Application. *mimeo*.

Ferrara, E. L. and M. Harari (2018). Conflict, Climate, and Cells: A Disaggregated Analysis. *The Review of Economics and Statistics 100*(4), 594–608.

Giustozzi, A. (2019). *The Taliban at War: 2001-2018*. London: Hurst Publishers.

Iyengar, R., J. Monten, and M. Hanson (2011). Building Peace: The Impact of Aid on the Labor Market for Insurgents. *NBER Working Paper 17297*.

Mansfield, D. (2016). *A State Built on Sand: How Opium Undermined Afghanistan*. Oxford: Oxford University Press.

Manski, C. F. (1993). Identification of Endogenous Social Effects: The Reflection Problem. *The Review of Economic Studies 60*(3), 531.

Mueller, H., D. Rohner, and D. Schönholzer (2017). The peace dividend of distance: violence as interaction across space. *CEPR Discussion Paper*, 55.

Peters, G. S. (2009). The Taliban and the Opium Trade. In A. Giustozzi (Ed.), *Decoding the New Taliban: Insights from the Afghan Field*, pp. 7–22. New York: Columbia University Press.

Powell, R. (2007). Allocating Defensive Resources with Private Information about Vulnerability. *American Political Science Review 101*(4), 799–809.

SIGAR (2013). Quarterly Report to the United States Congress. Technical report, Special Inspector General For Afghanistan Reconstruction, Washington DC.

SIGAR (2017). Reconstructing the Afghan National Defense and Security Forces: Lessons From the U.S. Experience in Afghanistan. Technical report, Special Inspector General For Afghanistan Reconstruction, Washington DC.

Sopko, J. F. (2019). Reintegration of Ex-Combatants: Lessons from the U.S. Experience in Afghanistan. Technical report, Special Inspector General For Afghanistan Reconstruction, Washington DC.

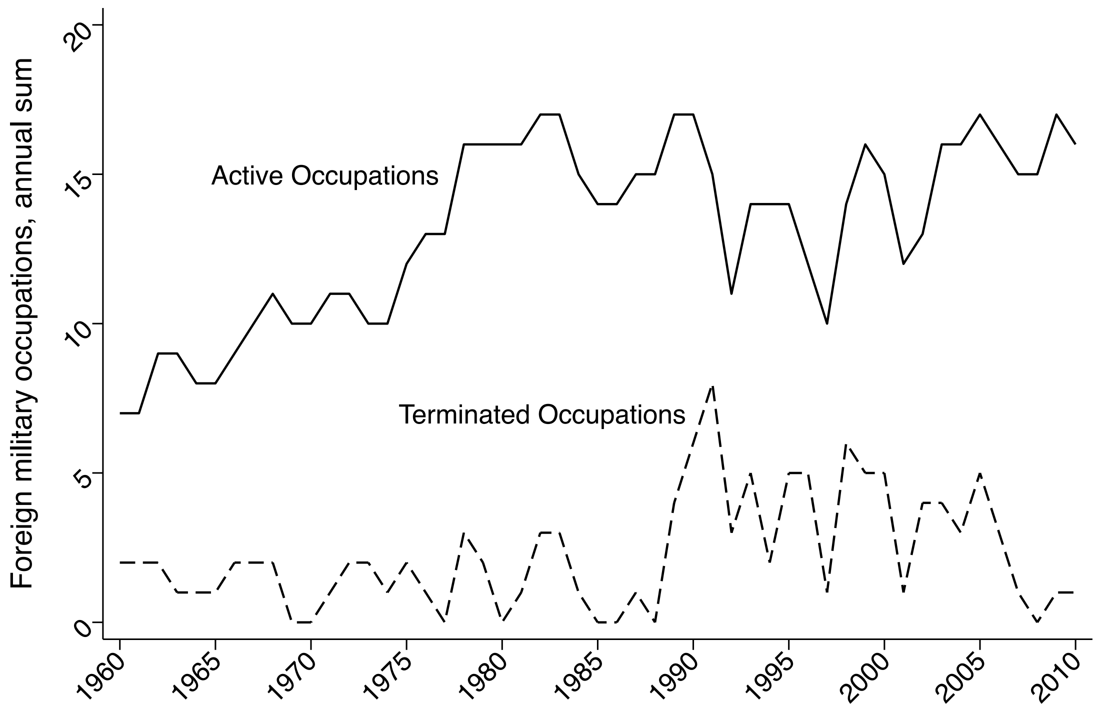
Vanden Eynde, O. (2018). Targets of Violence: Evidence from India's Naxalite Conflict. *The Economic Journal 128*(609), 887–916.

Wood, R. M. (2014). From Loss to Looting? Battlefield Costs and Rebel Incentives for Violence. *International Organization 68*(4), 979–999.

Wright, A. L. (2016). Economic Shocks and Rebel Tactics: Evidence from Colombia. *HiCN paper 232*.

Supplemental Figures and Tables

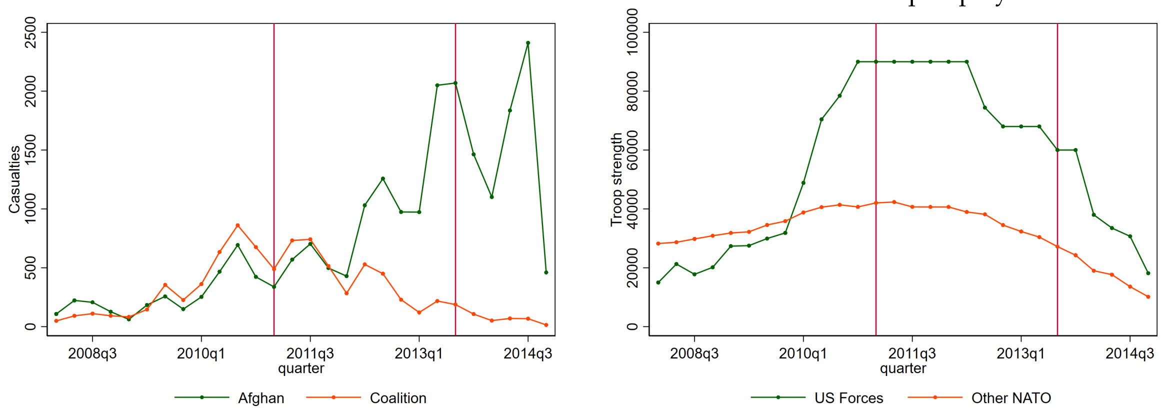
Figure A1: Trends in foreign military occupations and intervention terminations between 1960 and 2010.



Notes: annual counts of military occupations globally are noted with a solid black line; military occupation terminations are noted with a dashed line. Data on occupations is drawn from Collard-Wexler (2013).

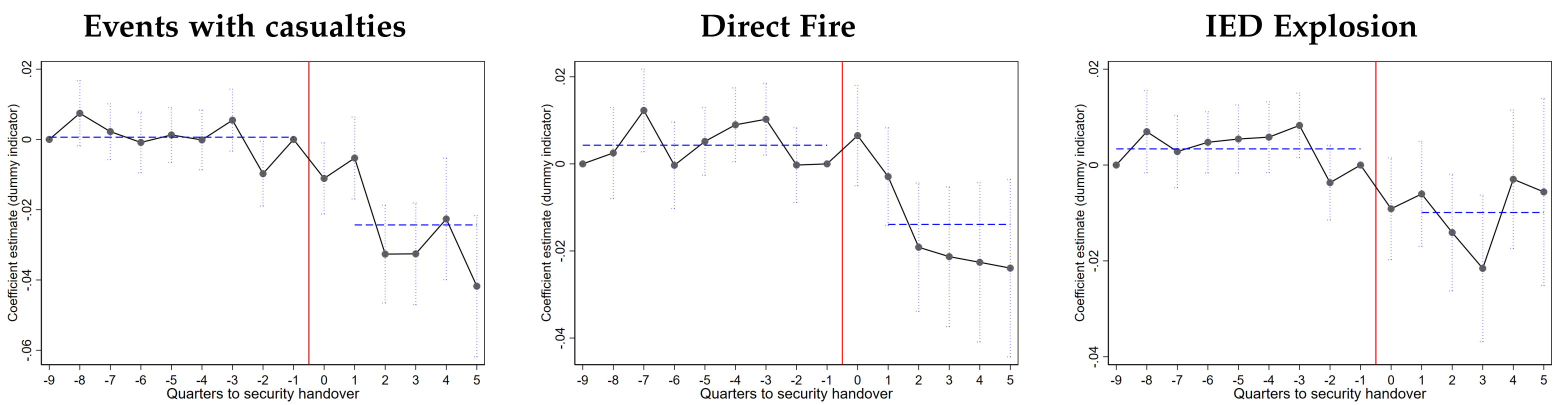
Figure A2: Events with casualties reported in SIGACTS over time and NATO troop strength.

Panel A: Events with casualties — *Panel B:* NATO troop deployments



Notes: The left figure presents the overall number of SIGACTS events with casualties for Afghan- or Coalition forces. The right figure presents average monthly NATO and US troop deployments.

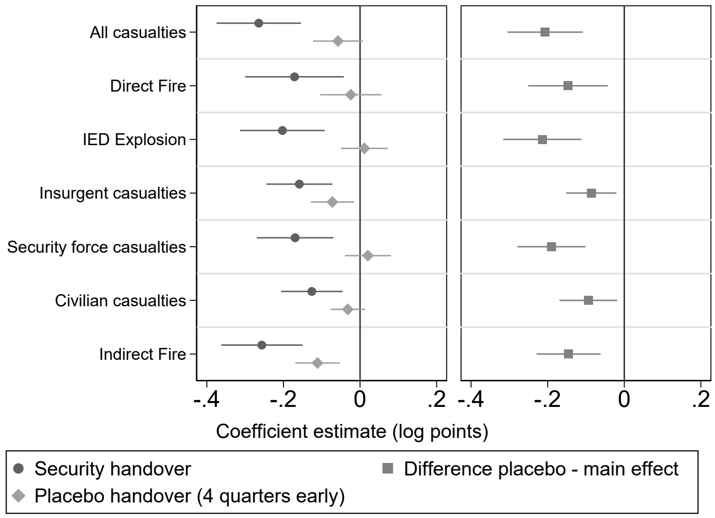
Figure A3: Event Studies around the Security transfer to Afghan National Security Forces (SIGACTS) - Gridcell level



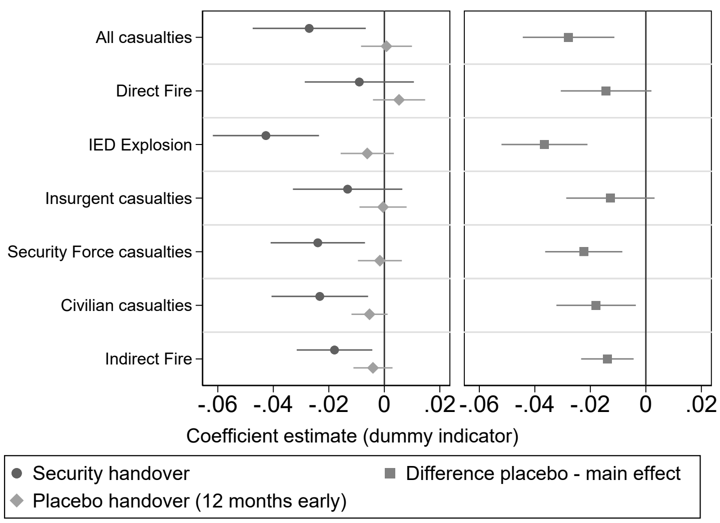
Notes: Event studies around the "Security handover" to the Afghan National Security Forces. Coefficients on "time to Security handover" are shown with 90% confidence intervals. The models are analogous to column (1) in Table A10, but include quarterly dummies for the time to treatment to maintain consistency with the main analysis. The regressions include gridcell fixed effects and match pair $\times$ time fixed effects. Outcomes are measured as binary indicators.

Figure A4: Security handover and Conflict (SIGACTS) - Placebo timing

Panel A: District level

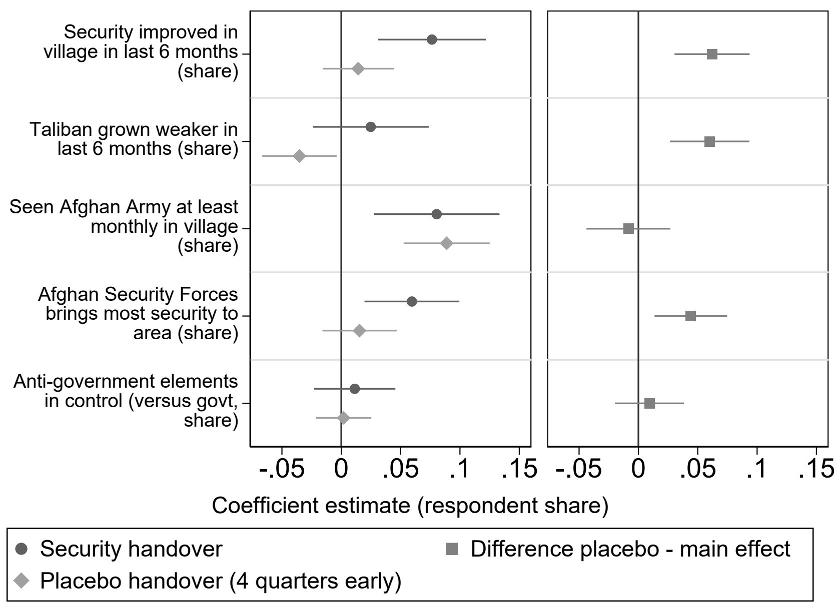


Panel B: Gridcell level



Notes: Coefficients and 90% confidence intervals on "Security handover" and "Security handover (4 quarters early)". We add the forwarded "Security Handover" indicator (by 4 quarters or 12 months) to a model that is analogous to column (1) in Table 4 for Panel A, and the corresponding specification at the gridcell level for Panel B. In the left panel, the forwarded indicator becomes zero after the treatment. In the right panel it remains equal to one, so that we estimate the difference between the placebo effect and the treatment effect. The dependent variable is subject to a Log(x+1) transformation at the district level in Panel A. The outcome is expressed as a binary indicator at the gridcell level in Panel B. Standard errors are clustered at the district level.

Figure A5: Security handover and Conflict (ANQAR) - Placebo timing



Notes: Coefficients and 90% confidence intervals on "Security handover" and "Security handover (4 quarters early)". We add the forwarded treatment indicator (by 4 quarters) to a model that is analogous to column (1) in Table 5. In the left panel, the forwarded indicator becomes zero after the treatment. In the right panel it remains equal to one, so that we estimate the difference between the placebo effect and the treatment effect. The dependent variable measures the share of respondents. Standard errors are clustered at the district level.

Table A1: Summary Statistics

	Mean (1)	Standard Deviation (2)	Observations (3)
Panel A: District-quarter level, SIGACTS			
All casualties	5.256	16.175	10556
Direct Fire	10.341	44.962	10556
IED Explosion	3.258	10.778	10556
Panel B: District-quarter level, ANQAR			
Security improved in village in last 6 months (share)	0.321	0.221	8525
Taliban grown weaker in last 6 months (share)	0.432	0.235	7836
Seen Afghan Army at least monthly in village (share)	0.697	0.318	8310
Afghan Security Forces brings most security to area (share)	0.508	0.236	8524
Anti-government elements in control (versus govt, share)	0.189	0.227	8525
Panel C: District level			
Travel distance to nearest military airport (cost units)	18442	10235	377

Notes: Observations at the district-quarter level in Panel A (2008-2014) and B (2008-2016); and district-level level in Panel C. For ease of interpretation, we report Panel A in levels.

Table A2: Comparison of district level characteristics across different tranche phases

	T1	T2	T2-T1	T3	T3-T2	T4	T4-T3	T5	T5-T4
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Is security in your village better than 6 month ago?	0.288	0.291	0.002	0.216	-0.074	0.156	-0.060	0.138	-0.019
	(0.023)	(0.018)	(0.024)	(0.015)	(0.017)	(0.024)	(0.023)	(0.015)	(0.022)
All casualties per capita	-3.341	-3.291	0.050	0.795	4.086	-2.102	-2.897	9.844	11.946
	(0.804)	(1.095)	(1.294)	(1.087)	(1.660)	(1.246)	(1.623)	(1.951)	(2.728)
Insurgent casualties per capita	-1.005	-1.016	-0.011	-0.366	0.650	-0.871	-0.505	2.819	3.690
	(0.227)	(0.338)	(0.362)	(0.301)	(0.425)	(0.373)	(0.414)	(0.667)	(0.922)
Security force casualties per capita	-1.582	-1.509	0.074	0.724	2.233	-0.840	-1.564	4.962	5.802
	(0.433)	(0.582)	(0.676)	(0.600)	(0.910)	(0.688)	(0.914)	(0.987)	(1.395)
Civilian casualties per capita	-0.754	-0.767	-0.013	0.437	1.203	-0.391	-0.828	2.063	2.454
	(0.199)	(0.223)	(0.276)	(0.260)	(0.381)	(0.247)	(0.369)	(0.398)	(0.531)
Direct Fire per capita	-6.120	-4.156	1.964	-0.392	3.764	-4.310	-3.918	28.560	32.870
	(3.922)	(4.867)	(6.875)	(3.048)	(6.414)	(3.221)	(3.703)	(6.767)	(8.616)
Indirect Fire per capita	-3.540	-2.934	0.606	-0.133	2.801	0.845	0.978	14.739	13.894
	(0.735)	(0.858)	(0.547)	(0.837)	(0.811)	(1.285)	(1.355)	(2.821)	(3.450)
IED Explosion per capita	-3.011	-2.591	0.419	1.863	4.454	-0.107	-1.970	7.290	7.397
	(0.686)	(0.934)	(1.052)	(1.077)	(1.570)	(1.617)	(2.114)	(1.683)	(2.654)
Nightlights per capita	966.713	654.563	-312.149	346.644	-307.919	-121.050	-467.694	-58.441	62.609
	(360.962)	(169.503)	(408.304)	(95.910)	(209.364)	(42.551)	(117.045)	(48.004)	(56.095)
Opium Yield [HA] per capita	0.124	0.169	0.045	0.293	0.123	0.372	0.080	0.498	0.126
	(0.071)	(0.088)	(0.100)	(0.086)	(0.107)	(0.132)	(0.148)	(0.145)	(0.189)

Notes: The table reports coeffients on tranche dummies (and their differences) from a district by quarter-level regression with quarter fixed effects. The district-quarter level panel is restricted to the period before the tranche-specific security handover. As the tranche comparisons rely on cross-sectional variation, we measure the violence outcomes in per capita levels. Standard errors are clustered at the district level and presented in parentheses.

Table A3: Security transfer to Afghan National Security Forces and conflict (SIGACTS) - District level additional outcomes

	Log(x+1)						
	All Casualty Events (1)	Direct Fire Attacks Attacks (2)	IED Explosions (3)	Insurgent Casualty Events (4)	Security Force Casualty Events (5)	Civilian Casualty Events (6)	Indirect Fire Attacks (7)
Panel A: District cell level – Security Transfer							
Security handover	-0.098	-0.066	-0.078	-0.047	-0.068	-0.023	-0.134
	(0.031)	(0.035)	(0.029)	(0.026)	(0.028)	(0.023)	(0.032)
Mean DV	0.920	1.145	0.686	0.398	0.647	0.404	0.518
Std Dev DV	1.137	1.319	0.984	0.725	0.932	0.677	0.892
Observations	10556	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377	377
Panel B: District level – Coalition troop withdrawal (IV)							
Troop withdrawal	0.666	0.572	0.773	0.264	0.707	0.452	0.029
	(0.308)	(0.327)	(0.305)	(0.199)	(0.278)	(0.231)	(0.244)
Security handover	-0.205	-0.146	-0.214	-0.084	-0.191	-0.093	-0.142
	(0.059)	(0.063)	(0.062)	(0.039)	(0.054)	(0.046)	(0.051)
Mean DV	0.920	1.145	0.686	0.398	0.647	0.404	0.518
Std Dev DV	1.137	1.319	0.984	0.725	0.932	0.677	0.892
Weak IV statistic	48.751	48.751	48.751	48.751	48.751	48.751	48.751
Observations	10556	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377	377

Notes: Regressions at the district-quarter level, covering the period 2008-2014. All regressions include district fixed effects, regional command × time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport × time fixed effects, and distance to province borders × time fixed effects. Outcomes are subject to a Log(x+1) transformation. The weak IV statistic is the Kleibergen-Paap rk Wald F-statistic. Standard errors are clustered at the district level and presented in parentheses.

Table A4: Security transfer to Afghan National Security Forces and conflict (SIGACTS data) - Spillover estimates

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
All Fatal Events	Security handover (γ)	-0.098	-0.119	-0.108	-0.156	-0.098	-0.095	-0.097	-0.116	-0.138	-0.088
Log(x+1)		(0.031)	(0.034)	(0.030)	(0.032)	(0.026)	(0.026)	(0.026)	(0.025)	(0.025)	(0.026)
	Exogenous effects (δ)		0.051	0.043	0.146	-0.037	0.600	-0.109	0.577	0.800	0.698
			(0.053)	(0.064)	(0.048)	(0.175)	(0.424)	(0.199)	(0.027)	(0.027)	(0.071)
	Endogenous effects (ρ)										0.180
											(0.256)
Direct Fire Attacks	Security handover (γ)	-0.066	-0.046	-0.036	-0.080	-0.063	-0.065	-0.064	-0.103	-0.075	-0.072
Log(x+1)		(0.035)	(0.036)	(0.032)	(0.035)	(0.028)	(0.028)	(0.028)	(0.027)	(0.027)	(0.028)
	Exogenous effects (δ)		-0.050	-0.130	0.035	-0.159	0.227	-0.184	0.687	1.018	0.565
			(0.058)	(0.069)	(0.052)	(0.189)	(0.458)	(0.215)	(0.029)	(0.030)	(0.068)
	Endogenous effects (ρ)										0.312
											(0.156)
IED Explosions	Security handover (γ)	-0.078	-0.098	-0.079	-0.112	-0.079	-0.079	-0.077	-0.127	-0.122	-0.078
Log(x+1)		(0.029)	(0.030)	(0.027)	(0.029)	(0.023)	(0.023)	(0.023)	(0.023)	(0.022)	(0.023)
	Exogenous effects (δ)		0.049	0.005	0.087	0.049	-0.213	-0.098	0.590	0.815	0.522
			(0.048)	(0.058)	(0.043)	(0.157)	(0.380)	(0.178)	(0.026)	(0.026)	(0.084)
	Endogenous effects (ρ)										0.121
											(0.433)
Number of districts		392	392	392	392	392	392	392	392	392	392
District time trend		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spillover specification		-	Neighbor dist.	Neighbor dist.^{2}	Neighbor prov.	Dist. < 250km	Dist. < 500km	Driving dist. < 500km	Flexible, zero beyond 500km	Flexible, zero beyond 1000km	Flexible, zero beyond 1000km
Edges that are supposed to be known		-	100%	100%	100%	100%	100%	100%	27.51%	17.35%	17.35%

Notes: Estimated from Equation (A1). Column (1): regressions at the district-quarter level, covering the period 2008-2014, including district and regional command x time fixed effects. Dependent variable is expressed as Log(x+1). Standard errors clustered at the district level and are presented in parentheses. Columns (2)-(7) are spatial panel regressions with spatial neighboring matrix assumed to be known and given, respectively, by neighboring districts, neighboring district squared, neighboring provices, geodesical distance smaller than 250km and 500km and driving distance smaller than 500km. Specifications reported in columns (8)-(10) have estimated and flexible spatial neighboring matrix, following de Paula et al. (2019), where weights between districts with driving distance beyond 500km and 1000k are assumed to be equal to zero, which corresponds to 27.51% and 17.35% of all weights.

Table A5: Coalition troop withdrawal and Conflict (SIGACTS data) - Spillover estimates

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
All Fatal Events	Troop withdrawal (γ)	0.616	1.368	1.457	0.732	0.763	0.533	0.611	0.458	0.632	0.606
Log(x+1)		(0.296)	(0.476)	(0.369)	(0.309)	(0.242)	(0.244)	(0.203)	(0.199)	(0.197)	(0.175)
	Exogenous effects (δ)		-0.980	-1.380	-0.191	-0.921	-1.612	0.239	3.897	4.653	2.416
			(0.561)	(0.508)	(0.386)	(0.846)	(2.669)	(1.213)	(0.223)	(0.221)	(0.338)
	Endogenous effects (ρ)										0.600
											(0.060)
Direct Fire Attacks	Troop withdrawal (γ)	0.495	0.022	0.732	0.372	0.677	0.339	0.533	0.509	0.445	0.251
Log(x+1)		(0.310)	(0.515)	(0.400)	(0.335)	(0.263)	(0.265)	(0.220)	(0.214)	(0.213)	(0.181)
	Exogenous effects (δ)		0.617	-0.389	0.202	-1.147	-3.011	-1.760	5.443	5.438	2.468
			(0.608)	(0.550)	(0.419)	(0.917)	(2.891)	(1.314)	(0.274)	(0.250)	(0.274)
	Endogenous effects (ρ)										0.650
											(0.050)
IED Explosions	Troop withdrawal (γ)	0.730	1.549	1.496	1.134	0.726	0.469	0.701	0.698	0.749	0.358
Log(x+1)		(0.287)	(0.428)	(0.332)	(0.278)	(0.218)	(0.220)	(0.183)	(0.178)	(0.178)	(0.152)
	Exogenous effects (δ)		-1.068	-1.258	-0.665	0.021	-5.012	1.310	3.622	3.722	1.228
			(0.505)	(0.456)	(0.347)	(0.761)	(2.399)	(1.090)	(0.204)	(0.193)	(0.235)
	Endogenous effects (ρ)										0.768
											(0.055)
Number of districts		392	392	392	392	392	392	392	392	392	392
Tranche x time FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spillover specification		-	Neighbor dist.	Neighbor dist.^{2}	Neighbor prov.	Dist. < 250km	Dist. < 500km	Driving dist. < 500km	Flexible, zero beyond 500km	Flexible, zero beyond 1000km	Flexible, zero beyond 1000km
Edges that are supposed to be known		-	100%	100%	100%	100%	100%	100%	27.51%	17.35%	17.35%

Notes: Estimated from Equation (A1). Column (1): regressions at the district-quarter level, covering the period 2008-2014, including district and regional command x time fixed effects. Dependent variable is expressed as Log(x+1). Standard errors clustered at the district level and are presented in parentheses. Columns (2)-(7) are spatial panel regressions with spatial neighboring matrix assumed to be known and given, respectively, by neighboring districts, neighboring district squared, neighboring provices, geodesical distance smaller than 250km and 500km and driving distance smaller than 500km. Specifications reported in columns (8)-(10) have estimated and flexible spatial neighboring matrix, following de Paula et al. (2019), where weights between districts with driving distance beyond 500km and 1000k are assumed to be equal to zero, which corresponds to 27.51% and 17.35% of all weights.

Table A6: Security transfer to ANSF and conflict (SIGACTS) - Transformations

	All fatal Events		Direct Fire Attacks		IED Explosions	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Log(x+1)						
Security handover	-0.138	-0.098	-0.134	-0.066	-0.074	-0.078
	(0.032)	(0.031)	(0.036)	(0.035)	(0.029)	(0.029)
Mean DV	0.920	0.920	1.145	1.145	0.686	0.686
Std Dev DV	1.137	1.137	1.319	1.319	0.984	0.984
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
Panel B: Hyperbolic Sine transformation (asinh)						
Security handover	-0.177	-0.126	-0.162	-0.084	-0.094	-0.097
	(0.038)	(0.037)	(0.042)	(0.041)	(0.036)	(0.037)
Mean DV	1.151	1.151	1.414	1.414	0.864	0.864
Std Dev DV	1.384	1.384	1.571	1.571	1.210	1.210
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
Panel C: Per capita violence levels (12-13 census)						
Security handover	-2.817	-1.131	-7.556	-2.446	-2.285	-2.064
	(0.991)	(0.993)	(2.238)	(1.925)	(0.681)	(0.697)
Mean DV	10.325	10.325	20.932	20.932	6.362	6.362
Std Dev DV	25.675	25.675	67.732	67.732	17.583	17.583
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
Panel D: Per capita violence levels (remote sensing)						
Security handover	-2.897	-1.148	-7.619	-2.411	-2.295	-2.080
	(1.008)	(1.004)	(2.265)	(1.950)	(0.686)	(0.702)
Mean DV	10.380	10.380	21.096	21.096	6.374	6.374
Std Dev DV	25.818	25.818	66.078	66.078	17.520	17.520
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377
Panel E: Poisson						
Security handover	-0.108	-0.084	-0.198	-0.115	-0.148	-0.138
	(0.093)	(0.097)	(0.116)	(0.104)	(0.083)	(0.084)
Mean DV outcome	5.489	5.536	10.710	10.774	3.623	3.669
Std Dev DV	16.491	16.553	45.715	45.845	11.308	11.373
Observations	10108	10023	10192	10131	9492	9371
Number of Districts	361	360	364	363	339	336
District time trend	No	Yes	No	Yes	No	Yes

Notes: Regressions at the district-quarter level, covering the period 2008-2014. All regressions include district fixed effects and regional command × time fixed effects. The dependent variable is subject to the transformation specified in each panel. Panels A-D are estimated with OLS, panel E is based on a Poisson model. The number of observations (and districts) in the Poisson model does not include observations that are absorbed by the model parameters. Standard errors clustered at the district level and are presented in parentheses.

Table A7: Security transfer to ANSF and conflict (SIGACTS) - Transformations, dropping the 3 most violent districts

	All fatal Events		Direct Fire Attacks		IED Explosions	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Log(x+1)						
Security handover	-0.144	-0.103	-0.141	-0.073	-0.078	-0.081
	(0.032)	(0.031)	(0.036)	(0.035)	(0.030)	(0.030)
Mean DV	0.892	0.892	1.111	1.111	0.659	0.659
Std Dev DV	1.095	1.095	1.265	1.265	0.938	0.938
Observations	10472	10472	10472	10472	10472	10472
Number of Districts	374	374	374	374	374	374
Panel B: Hyperbolic Sine transformation (asinh)						
Security handover	-0.183	-0.131	-0.169	-0.091	-0.098	-0.100
	(0.039)	(0.038)	(0.042)	(0.041)	(0.037)	(0.037)
Mean DV	1.119	1.119	1.377	1.377	0.833	0.833
Std Dev DV	1.342	1.342	1.518	1.518	1.163	1.163
Observations	10472	10472	10472	10472	10472	10472
Number of Districts	374	374	374	374	374	374
Panel D: Per capita violence levels (12-13 census)						
Security handover	-3.227	-1.706	-7.648	-2.943	-2.296	-2.158
	(0.909)	(0.851)	(2.028)	(1.739)	(0.651)	(0.669)
Mean DV	9.295	9.295	18.054	18.054	5.706	5.706
Std Dev DV	20.844	20.844	51.036	51.036	15.023	15.023
Observations	10472	10472	10472	10472	10472	10472
Number of Districts	374	374	374	374	374	374
Panel E: Per capita violence levels (remote sensing)						
Security handover	-3.312	-1.766	-7.871	-3.008	-2.328	-2.198
	(0.920)	(0.855)	(2.091)	(1.771)	(0.659)	(0.676)
Mean DV	9.388	9.388	18.428	18.428	5.745	5.745
Std Dev DV	21.166	21.166	52.894	52.894	15.179	15.179
Observations	10472	10472	10472	10472	10472	10472
Number of Districts	374	374	374	374	374	374
Panel E: Poisson						
Security handover	-0.164	-0.161	-0.175	-0.125	-0.163	-0.178
	(0.080)	(0.069)	(0.103)	(0.077)	(0.079)	(0.066)
Mean DV outcome	4.590	4.629	8.178	8.228	3.003	3.042
Std Dev DV	11.198	11.237	23.994	24.058	7.801	7.844
Observations	10024	9939	10108	10047	9408	9287
Number of Districts	358	357	361	360	336	333
District time trend	No	Yes	No	Yes	No	Yes

Notes: Regressions at the district-quarter level, covering the period 2008-2014. The three outlying districts that are removed in these samples experienced more than 2,000 casualty events in the sample period. All regressions include district fixed effects and regional command × time fixed effects. The dependent variable is subject to the transformation specified in each panel. Panels A-D are estimated with OLS, panel E is based on a Poisson model. The number of observations (and districts) in the Poisson model does not include observations that are absorbed by the model parameters. Standard errors clustered at the district level and are presented in parentheses.

Table A8: Summary Statistics at the gridcell level

	Mean (1)	Standard Deviation (2)	N (3)
Gridcell-month level			
All casualties	0.135	1.018	107016
Direct Fire	0.284	2.993	107016
IED Explosion	0.086	0.685	107016

Notes: Observations at the gridcell-month level (2008-2014).

Table A9: Comparison of characteristics between matched geographically similar distantly located gridcells

	T1	T2	T2-T1	T3	T3-T2	T4	T4-T3	T5	T5-T4
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Any All casualties	0.043	0.016	-0.026	0.040	-0.003	0.026	-0.017	0.102	0.060
	(0.024)	(0.007)	(0.025)	(0.008)	(0.025)	(0.006)	(0.025)	(0.018)	(0.030)
Any Insurgent casualties	0.012	0.007	-0.006	0.013	0.001	0.009	-0.003	0.041	0.029
	(0.009)	(0.004)	(0.010)	(0.004)	(0.010)	(0.002)	(0.009)	(0.010)	(0.013)
Any Security Force casualties	0.023	0.012	-0.012	0.028	0.005	0.015	-0.008	0.074	0.051
	(0.012)	(0.006)	(0.013)	(0.007)	(0.014)	(0.004)	(0.013)	(0.014)	(0.019)
Any Civilian casualties	0.014	0.008	-0.006	0.016	0.002	0.008	-0.006	0.041	0.027
	(0.007)	(0.004)	(0.008)	(0.004)	(0.009)	(0.002)	(0.008)	(0.010)	(0.013)
Any Direct Fire	0.042	0.022	-0.020	0.057	0.015	0.041	-0.001	0.128	0.086
	(0.027)	(0.009)	(0.028)	(0.011)	(0.029)	(0.011)	(0.029)	(0.022)	(0.034)
Any Indirect Fire	0.009	0.010	0.001	0.026	0.018	0.009	0.000	0.065	0.057
	(0.005)	(0.004)	(0.006)	(0.007)	(0.008)	(0.003)	(0.005)	(0.014)	(0.015)
Any IED Explosion	0.036	0.014	-0.021	0.038	0.003	0.020	-0.016	0.098	0.063
	(0.020)	(0.006)	(0.021)	(0.009)	(0.021)	(0.005)	(0.020)	(0.018)	(0.027)
Any Nightlights	0.139	0.073	-0.066	0.063	-0.077	0.009	-0.131	0.062	-0.078
	(0.068)	(0.014)	(0.070)	(0.014)	(0.070)	(0.005)	(0.068)	(0.017)	(0.070)

Notes: The table reports coeffients on tranche dummies (and their differences) from a gridcell by month level regression with month fixed effects. The panel is restricted to gridcell-months before the tranche-specific security transition. Standard errors clustered at the district level and are presented in parentheses.

Table A10: Security transfer to Afghan National Security Forces and conflict (SIGACTS) - Gridcell Level

	Dummy indicators					
	All fatal Events		Direct Fire Attacks		IED Explosions	
	(1)	(2)	(3)	(4)	(5)	(6)
Security handover	-0.021	-0.009	-0.018	-0.006	-0.016	-0.011
	(0.006)	(0.005)	(0.007)	(0.006)	(0.005)	(0.005)
Mean DV	0.050	0.050	0.064	0.064	0.039	0.039
Observations	107016	107016	107016	107016	107016	107016
Number of Grid Cells	1274	1274	1274	1274	1274	1274
District time trend	No	Yes	No	Yes	No	Yes

Notes: Regressions at the gridcell-month level, covering the period 2008-2014. All regressions include gridcell fixed effects and match pair × time fixed effects. The dependent variable is expressed as a binary indicator variable. Standard errors are clustered at the district level and presented in parentheses.

Table A11: Main results by tranche

	Log(x+1)		
	All Casualty Events (1)	Direct Fire Attacks (2)	IED Explosions (3)
District Level (IV)			
Troop withdrawal	0.683	0.533	0.735
	(0.293)	(0.304)	(0.281)
Security handover Tranche 1	-0.482	-0.330	-0.533
	(0.196)	(0.231)	(0.179)
Security handover Tranche 2	-0.139	-0.136	-0.209
	(0.085)	(0.091)	(0.083)
Security handover Tranche 3	-0.100	-0.014	-0.096
	(0.064)	(0.073)	(0.062)
Security handover Tranche 4	-0.381	-0.396	-0.287
	(0.083)	(0.101)	(0.091)
Security handover Tranche 5	-0.156	-0.026	-0.166
	(0.112)	(0.136)	(0.108)
Mean DV	0.920	1.145	0.686
Std Dev DV	1.137	1.319	0.984
Weak IV statistic	65.038	65.038	65.038
Observations	10556	10556	10556
Number of Districts	377	377	377

Notes: Regressions at the district-quarter level covering the period 2008-2014. All regressions include district fixed effects and regional command × time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport × time fixed effects, and distance to province borders × time fixed effects. Outcomes are subject to a Log(x+1) transformation. The weak IV statistic is the Kleibergen-Paap rk Wald F-statistic. Standard errors are clustered at the district level and presented in parentheses.

Table A12: Military Support

	Log(x+1)					
	Close air support		Medevacs		IED Explosives Found & Cleared	
	(1)	(2)	(3)	(4)	(5)	(6)
Troop withdrawal	-0.069	-0.004	0.395	0.535	-0.165	-0.107
	(0.121)	(0.148)	(0.216)	(0.192)	(0.230)	(0.221)
Security handover		0.014		-0.003		-0.083
		(0.043)		(0.043)		(0.058)
log(Direct Fire)	0.094	0.114	0.065	0.106		
	(0.013)	(0.014)	(0.010)	(0.013)		
Troop withdrawal=1 $\times$ log(Direct Fire)		-0.098		-0.207		
		(0.076)		(0.067)		
Security handover=1 $\times$ log(Direct Fire)		-0.010		-0.016		
		(0.039)		(0.034)		
log(IED Explosion)					0.364	0.414
					(0.019)	(0.023)
Troop withdrawal=1 $\times$ log(IED Explosion)						-0.319
						(0.168)
Security handover=1 $\times$ log(IED Explosion)						-0.006
						(0.065)
Mean DV	0.176	0.176	0.134	0.134	0.674	0.674
Std Dev DV	0.486	0.486	0.465	0.465	1.024	1.024
Weak IV statistic	51.575	25.758	51.575	25.758	51.802	25.420
Observations	10556	10556	10556	10556	10556	10556
Number of Districts	377	377	377	377	377	377

Notes: Regressions at the district-quarter level, covering the period 2008-2014.All regressions include district fixed effects, regional command $\times$ time fixed effects, and district-specific trends. The instrument used for "Troop withdrawal" is the interaction of the travel distance to the nearest military airport and an indicator for the post-2011 period. The IV control set includes distance to any airport $\times$ time fixed effects, and distance to province borders $\times$ time fixed effects. Outcomes are subject to a Log(x+1) transformation. "Medevacs" stands for "Medical Evacuations". The weak IV statistic is the Kleibergen-Paap rk Wald F-statistic. Standard errors are clustered at the district level and presented in parentheses.