Local Political Economy of Foreign Military Withdrawal

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Abstract

How do geopolitical shocks affect local politics? We examine foreign military base closures as discrete geopolitical events that simultaneously restore national sovereignty while disrupting local economies. We argue that base closures trigger political backlash through economic mechanisms, as job losses and population decline mobilize economically vulnerable voters toward anti-establishment parties. We test this claim with novel sub-national data on Soviet military withdrawal from Estonia, Latvia, and Lithuania after 1991. Across multiple estimation strategies, we find that Soviet base closures increased support for pro-Russian parties over multiple electoral cycles. These political effects were strongest in communities with larger ethnic Russian populations and scale with the size of the closed facility. Our analysis reveals that closures caused significant population decline and employment contraction, providing microfounded evidence for economic voting. Local economic disruption from closures can create political opportunities for forces aligned with the former occupying power.

How do geopolitical shocks affect local politics? We answer this question by examining foreign military base closures. Like industrial company towns, foreign military bases often dominate local economies, acting as primary employers and hubs for supporting services. At the height of the U.S. presence in Afghanistan, over 12,000 local civilians worked at Bagram airfield. Ramstein Air Base remains one of the largest employers in Germany's Kaiserslautern region, as does Camp Humphreys in Pyeongtaek, South Korea. Yet unlike factory closures or gradual industrial decline, foreign military withdrawals can carry profound political symbolism. Communities may associate bases with occupation, protection, or dependency (Yeo, 2017; Allen et al., 2020), shaping how voters respond to their closure.

This paper analyzes the political consequences of foreign military withdrawals, and shows that these geopolitical events produce substantial and persistent electoral backlash. We advance economic voting as a micro-founded mechanism linking base closures to political outcomes. When bases close, they eliminate jobs and trigger population decline. These economic shocks reshape local electorates through selective out-migration and mobilization of vulnerable voters. "Anti-realignment" parties — who oppose breaking ties with the former occupying power and integrating with new security partners — can gain electorally by offering voters an organized vehicle for economic grievance in post-occupation contexts.

Our scope conditions extend to post-occupation polities with meaningful electoral competition: settings where a foreign power had exercised sustained military and administrative control, and where voters retain the capacity to reward or punish parties at the ballot box.[1] In the Philippines, for example, the closure of Subic Bay U.S. Naval Base in 1992 eliminated tens of thousands of civilian jobs and reshaped electoral competi-

[1]We focus on "post-occupation" contexts to distinguish cases where a foreign power imposed military presence through conquest or coercion from voluntary basing arrangements between sovereign states. We focus on "meaningful electoral competition" because the operative scope condition is functional electoral accountability, not full democratic consolidation. Opposition parties must exist, compete, and plausibly gain from incumbent punishment, even if the broader polity falls short of canonical democratic standards.

tion between pro-American and nationalist parties. Syria's 29-year military occupation of Lebanon ended abruptly in 2005, leaving behind organized pro-Syrian parties competing against an anti-Syrian coalition in parliamentary elections months later. In Senegal and Côte d'Ivoire, France's ongoing military withdrawal has reorganized electoral competition around sovereignty and alignment with the former colonial power. This universe of cases may yet expand, should the U.S. reduce its military presence in South Korea, Japan, or Germany: all are polities with organized electoral forces on both sides of the U.S.-alignment question, with local communities deeply dependent on base economies.

We study the local political-economic fallout of Soviet (and Russian) military withdrawal from the Baltic states after 1991. Using novel sub-national data on Estonia, Latvia and Lithuania, we show that communities experiencing base closures saw increased turnout and vote shares for "pro-Russian" parties, exceeding generic anti-incumbent punishment.[2] We also confirm that closures caused significant population decline and employment contraction, providing granular evidence that economic distress drove political behavior.

Our theoretical framework combines retrospective economic voting and spatial models of electoral competition based on geopolitical orientation. Our theory makes no assumptions about which motivations (e.g., rational sanctioning, cognitive heuristics, affective responses) drive individual voter behavior (Healy and Malhotra, 2013). Instead, we show how economic shocks reshape the electorate through selective out-migration of low-propensity voters and mobilization of economically sensitive voters, regardless of their underlying psychological processes. We characterize voters by their geopolitical ideal points (on a pro-realignment to anti-realignment spectrum) and economic sensitivity, demonstrating how base closures create different pressures across voter types while generating consistent aggregate patterns: electoral shifts toward anti-realignment challengers. Crucially, our theory is

[2] The "pro-Russian" label applies to political parties that either (a) oppose economic and security integration with Western institutions, (b) support expansion of Russian language rights, or (c) have financial or institutional ties to the Russian government or Kremlin-aligned entities.

flexible on blame attribution, acknowledging that voters may punish incumbents, sanction challengers for their associations with the former occupier, or both – allowing empirical patterns to inform which attribution mechanisms dominate.

To empirically test our argument, we exploit quasi-experimental variation in the location and timing of Soviet withdrawals: Moscow made base closure decisions in response to macro-level geopolitical changes, rather than local political-economic considerations inside Estonia, Latvia, and Lithuania.[3] The Baltic context works against finding the effects we document. Post-independence citizenship laws disenfranchised the Soviet-era settlers and Russian-speaking base workers whom closures harmed most directly, filtering our estimates toward those with weaker economic grievances. Baltic economies also reoriented rapidly toward EU and Nordic markets, offering affected communities faster recovery paths than most comparable post-occupation settings. That we nonetheless find substantial and persistent electoral backlash suggests our estimates may represent a lower bound on the political-economic consequences of military withdrawals.

We combine information on Soviet military base locations and closure timing with demographic data from Soviet censuses, firm-level economic indicators, electoral results from national election commissions, and population dynamics from satellite imagery. Researchers have not previously assembled data on this scale, due to the scarcity of geospatial data on historical sub-national administrative units, technical challenges associated with converting data between spatial units, and the fact that much raw data exists only in scanned PDFs of administrative documents, requiring digitization and preprocessing.

We employ two complementary estimation strategies. First, we estimate a dose-response relationship measuring how the cumulative number of closures affects outcomes, exploiting within-community variation over time. Second, we implement difference-in-differences

[3] Supplementary analyses find no evidence that pre-treatment characteristics like population size, ethnic composition, or geography predict closure probability.

estimation comparing communities experiencing military withdrawals to communities that never experienced withdrawals, in the periods before and after closures.

We find that foreign military withdrawals produce substantial and persistent political consequences. Soviet base closures increased voter turnout and pro-Russian party vote shares across multiple electoral cycles, with effects scaling with facility size and concentrating in communities with larger ethnic Russian populations. Closures also caused significant population decline and employment contraction. The electoral shift reflects both compositional change in the electorate and genuine preference change (or mobilization) among voters who stayed. The durability of these effects points to lasting changes in local political competition rather than transitory anti-incumbent punishment.

By documenting these local demographic, economic, and electoral effects — and particularly the concentration of political gains among anti-realignment parties rather than opposition parties generally — we advance several strands of research.

First, we extend international relations scholarship on foreign military installations into new temporal territory. While existing IR research examines how foreign military bases emerge and why host countries sometimes contest their presence (Cooley, 2008; Holmes, 2014; Yeo, 2011, 2017; Allen et al., 2020), we examine what happens *after* bases close. This represents a temporally distinct process with different causal mechanisms: during presence, extant scholarship shows that geopolitical and sovereignty concerns tend to dominate political mobilization, while the economic benefits of basing don't always deliver local support (Cooley, 2008; Hikotani et al., 2023); post-withdrawal, we show that concentrated economic disruption can override national-level geopolitical realignment.

Second, our paper extends research on economic voting (Lewis-Beck and Stegmaier, 2000; Healy and Malhotra, 2013; Margalit, 2019) by examining sudden, localized disruptions in a post-communist setting where voters navigate trade-offs between economic distress and preferences over their country's geopolitical orientation. Building on studies of how trade exposure (Autor et al., 2020; Colantone and Stanig, 2018), manufacturing decline (Margalit, 2011; Jensen et al., 2017), and other localized economic disruptions shape voting (Baccini and Weymouth, 2021), we contend that withdrawals represent a distinctive class of economic shock, whose costs voters must weigh against geopolitical considerations.

Our theoretical grounding in economic voting generates distinct empirical predictions. While IR theory on military basing would predict nationalist (anti-Russian) mobilization following Soviet withdrawal, celebrating restored sovereignty (Cooley, 2008), we find pro-Russian electoral gains, suggesting that economic harm from closure may exceed the relief from sovereignty restoration for local stakeholders. These findings align with recent evidence from other post-communist contexts, showing that communities economically dependent on Russia exhibit pro-Russian political outcomes following economic disruptions, whether through Soviet base closures fostering lasting pro-Russian attitudes in East Germany (Schulze, 2025) or through trade shocks driving political violence and territorial losses to Russian-backed separatists in Eastern Ukraine (Zhukov, 2016)

Third, our focus on foreign military withdrawal distinguishes our study from political economy research on base closures, which has centered on the U.S. Base Realignment and Closure (BRAC) process and generally found muted effects (Bradshaw, 1999; Hooker and Knetter, 2001; Lee, 2018; Andersson et al., 2007).[4] BRAC differs from foreign withdrawal in two ways that dampen shocks: closures relocate personnel to other domestic bases rather than removing them from the country, and affected communities receive federal compensation (Dardia et al., 1996; Cowan, 2012; Lee, 2018; Lockwood and Siehl, 2004). Foreign withdrawals also activate competing pressures between local economic interests and national sovereignty concerns — dynamics absent when domestic bases close (Cooley, 2008). We show that concentrated economic costs can be more politically consequential than the diffuse benefits of restored sovereignty.

[4]See Paloyo et al. (2010) for an analysis of BRAC in Germany.

1 Theory

Foreign military base closures create distinctive political dynamics that simultaneously affect electoral participation and vote choice. We develop a hybrid theory combining retrospective economic voting (Fiorina, 1981; Lewis-Beck and Stegmaier, 2000; Healy and Malhotra, 2013) and spatial models of electoral competition (Enelow and Hinich, 1984; Adams et al., 2020) to explain how these dual effects operate. The theory applies to post-occupation polities, where competitive elections feature viable alternatives that differentiate on geopolitical orientation (Kopstein and Reilly, 2000; Pop-Eleches, 2010). We summarize our argument qualitatively here, and formally in Appendix A1.

Our theoretical framework conceptualizes base closures as events that operate along two dimensions simultaneously: a geopolitical one and an economic one. By removing foreign military presence, closures represent geopolitical shifts. From a national perspective, the removal of foreign forces and (partial) restoration of sovereignty create an opportunity for geopolitical reorientation away from the occupier. In the Baltic states, for example, Soviet withdrawal a facilitated pro-Western reorientation through NATO and EU accession — a national-level geopolitical realignment with diffuse benefits. On the economic dimension, closures can generate severe material shocks. Military installations serve as major regional employers, and their closure triggers job losses, depopulation, and collapse of local economies that depended on base personnel and defense industry activity. These costs concentrate in communities hosting bases, creating a fundamental tension: geopolitical benefits apply nationally, but economic costs concentrate locally. Voters facing this hardship seek electoral vehicles to express economic grievances and demand policy responses.

Foreign military bases generate economic interactions with local communities in several ways. On-site, local civilians staff canteens, perform custodial and groundskeeping work, and handle certain clerical tasks. Off-site, they farm and distribute food, haul freight, provide fuel and building materials. Locals with specialized skills (e.g., electricians, plumbers, carpenters, mechanics) cover construction and repair needs. Local shops, barbers, and saloons cater to off-duty personnel. Where language barriers exist, locals also provide translation and interpretation services. When bases close, these economic activities stop.

Our theory builds on three assumptions about the post-occupation political environment. First, two distinct political party blocs compete along a geopolitical dimension. Pro-realignment parties favor strategic reorientation away from the former occupier, and integration with new security partners. Pursuing this integration requires supporting a bundle of domestic policy changes. In the case of NATO and EU accession, this might include market reforms, privatization, rule of law development, anti-corruption measures, and democratic institution building. Anti-realignment parties favor maintaining orientation toward the former occupier, and/or oppose the policy changes associated with realignment. Geopolitical positioning can create strange bedfellows, with left-wing redistributive parties (e.g., Communist successors) and right-wing anti-establishment populists (e.g., Euroskeptic nationalists) finding common cause against pro-realignment incumbents, despite divergent economic platforms.[5] In contexts where occupation entailed semi-permanent population transfer to occupied areas, anti-realignment parties might mobilize co-ethnics or co-linguals of the occupying power through nostalgic appeals. Economic shocks create opportunities to expand the anti-realignment coalition beyond its core support base.

Second, we assume governing coalitions generally exclude anti-realignment parties. This exclusion is crucial: anti-realignment parties can campaign as outsiders, with no need to defend state policy decisions. When bases close and economic conditions deteriorate, anti-realignment parties can oppose the status quo while bearing no responsibility for it.

Third, voters choose based on both geopolitical ideal point proximity and exposure

[5]In Appendix A4 we examine whether base closures affect incumbent vote shares generally or anti-realignment party vote shares specifically. We show that anti-realignment parties gain support beyond what generic anti-incumbent voting would predict.

to economic shocks. In normal economic times, voters select parties based primarily on geopolitical orientation. Base closures disrupt this calculus by introducing retrospective economic considerations that compete with geopolitical preferences.

These competing pressures affect voters differently, based on their geopolitical preferences and economic sensitivity. Voters whose geopolitical ideal points align more closely with anti-realignment parties experience geopolitical dissatisfaction from the withdrawal and economic grievances from its consequences, creating multiple motivations to oppose pro-realignment incumbents. The economic shock validates these voters' geopolitical critique, strengthening their support for anti-realignment alternatives. Pro-realignment voters generally approve of the geopolitical shift but experience economic losses. For economically sensitive voters in this group, the retrospective punishment mechanism can overcome geopolitical preferences, weakening their support for pro-realignment forces. Geopolitically indifferent voters mobilize primarily in response to economic conditions. For them, base closures are purely negative economically, creating incentives to punish incumbents by supporting available challengers. All three forces point in the same direction: a reduction in support for realignment parties or an increase in support for anti-realignment alternatives.

A substantial literature documents that voters respond to economic shocks, but scholars debate the mechanisms underlying these responses (Healy and Malhotra, 2013). The traditional interpretation posits rational voters who sanction poorly-performing incumbents or select alternatives based on observed performance (Fiorina, 1981; Fearon, 1999). Other research emphasizes voters' reliance on cognitive heuristics when processing complex information about government performance, leading to biases like overweighting recent economic conditions or misattributing responsibility for outcomes beyond government control (Healy and Malhotra, 2013). Affective responses to economic pain may also drive voting behavior (Achen and Bartels, 2004). We make no assumptions about which mechanism dominates for any given voter.[6] Whether voters engage in rational sanctioning, use cognitive shortcuts, or react emotionally to hardship, the same aggregate patterns emerge.

A critical question concerns how voters attribute responsibility for base closures. The retrospective voting literature documents substantial variation in attribution patterns (Healy and Malhotra, 2013). In some cases, voters correctly identify which actors control specific decisions and apportion blame accordingly. In other cases, voters engage in "blind retrospection," mechanically punishing incumbents for outcomes beyond their control (Achen and Bartels, 2004; Healy and Malhotra, 2009).

Base closures present a particularly complex attribution problem, since decisions on force withdrawal often originate with the former occupier rather than local authorities. Consider three attribution scenarios. Under "nearsighted" attribution, voters predominantly punish local pro-realignment incumbents, either because they mechanically sanction whoever holds office or because economic distress erodes trust in establishment institutions. Under "farsighted" attribution, voters instead punish anti-realignment parties for their association with the external source of the shock. Under "equal blame" attribution, voters either hold all parties equally accountable or view the shock as beyond any party's control.

These scenarios generate distinct empirical predictions. Both nearsighted and farsighted attribution increase turnout by creating differential blame that raises electoral stakes for marginal voters. This stakes-based turnout mechanism disappears under equal blame attribution, as the economic shock does not change the relative attractiveness of party blocs. The direction of vote share effects depends on which party bloc bears greater responsibility in voters' minds: nearsighted attribution predicts increased anti-realignment support, while farsighted attribution predicts decreased anti-realignment support. We expect voters to be more nearsighted in their attribution, and respond to closures by voting for

[6] The formal model captures this heterogeneity through utility shocks that encompass both idiosyncratic preferences and systematic differences in how voters process information about economic conditions.

anti-realignment parties and turning out in greater numbers.

Five testable predictions follow from our theory:

H1: Communities experiencing base closures will exhibit population decline.

H2: Communities experiencing base closures will exhibit economic decline.

H3: Communities experiencing base closures will exhibit higher voter turnout.

H4: Communities experiencing base closures will exhibit higher anti-realignment support.

H5: Political effects of base closures will be stronger where the economic shock is more severe (e.g., larger bases, fewer alternative employment opportunities).

Derivation. Appendix A1 provides a formal model, with definitions of voter utilities, equilibrium conditions, proofs of the main theoretical results, comparative statics, and the heterogeneous attribution extension. Hypotheses 1 and 2 test the model's Assumption 1. Hypotheses 3 and 4 follow from Theorem 1. Hypothesis 5 follows from Proposition 1.

2 History

Occupation of the Baltics. Our study focuses on the three Baltic states within their current borders. During Soviet occupation, Estonia, Latvia, and Lithuania comprised the USSR's Baltic Military District. The Soviets first established the district in 1941, shortly before German forces attacked the USSR, and it took its final shape after authorities transferred Estonia back from the Leningrad Military District in 1956.[7] Because the Baltic Military District straddled the USSR's western frontier, the region underwent heavy militarization. Klaipeda, Liepaja, Ventspils, Tallinn, and Parnu became important naval

[7] The district also included the current Russian exclave of Kaliningrad, which the Soviets added in 1946.

bases for Soviet submarines and ships. The Soviets built high concentrations of new military infrastructure across the Baltic states and sent an influx of new military personnel (CIA, 1955). The military's land takeover was extensive. The Estonian government has estimated that military installations accounted for 87,000 hectares, or roughly 2 percent, of Estonia's territory (Järv et al., 2013). In comparison, the U.S. Department of Defense administers around 0.35 percent of total U.S. land area.

Moscow selected locations to serve military-strategic objectives, not to reward politically aligned communities or stimulate economically developed areas. The General Staff's considerations included geographic proximity to potential adversaries, access to ice-free ports for naval installations, positioning along strategic transportation corridors for rapid troop movement, suitability of terrain (e.g., flat areas for airfields, elevated positions for radar and early warning systems), and the availability of legacy Imperial Russian or German infrastructure. These criteria operated independently of local political loyalty, economic development, or demographic composition.[8]

Local civilian governments had virtually no say over military bases' location, size, or logistics within their administrative areas, and lacked jurisdictional power over nearby military units. Whereas U.S. basing agreements involve negotiations over employment, compensation, and local labor, Moscow made all strategic decisions and planning on object locations unilaterally, without known input from local bureaucracies (Cooley, 2008, 79). Locals also held very few positions in the military hierarchy. The Soviet Union generally

[8]For example, if base placement rewarded areas with historical pro-Soviet loyalty, we would expect concentration in industrial centers and working-class districts that supported Bolshevik movements during the Baltic Wars of Independence (1918-1920), like Riga's factory districts or ethnically Russian communities. Conversely, if placement targeted politically hostile areas, we would expect heavy military concentration in rural interior regions where post-war insurgent resistance was most intense, like southern Lithuania and eastern Latvia (Vladimirtsev and Kokurin, 2008). Instead, bases clustered on coasts and near borders and logistical hubs, with relatively sparse presence in these former pro- or anti-Bolshevik strongholds. Similarly, remote coastal areas might host major naval facilities despite limited economic activity (e.g., Estonian islands), while some economically developed areas like central Lithuania and Riga's industrial suburbs had fewer installations relative to their populations.

posted new conscripts outside their national republics, and left most decision-making to officers from distant republics with few or no local ties (Rakowska-Harmstone, 1986). Neither local party officials nor military leaders meaningfully pushed back against Moscow's policies on local military land use (Bleiere, 2016).

Soviet authorities pursued industrial policies in the Baltic states that served political rather than economic purposes. Moscow's decisions to establish local machine- and ship-building plants defied economic logic, requiring the import of workers from other republics, sourcing of components from distant locations, and expansion of housing in cities that lacked industrial infrastructure (CIA, 1950). This deliberate industrialization strategy created lasting demographic and political divisions. Cities like Riga and Tallinn developed segregated neighborhoods that remain predominantly Russophone today (Pang et al., 2022). Soviet housing policies favored military officers and Red Army veterans, creating durable residential patterns that concentrated ethnic minorities in specific areas (Marcińczak et al., 2015). Moscow also constructed dedicated military towns for army personnel and their families. After the withdrawal, many of these settlements became ghost towns that the newly independent Baltic states struggled to repurpose.

Geography and strategic importance shaped each Baltic state's distinct experience during Soviet occupation. Latvia hosted the Baltic Military District headquarters, transforming Riga into the region's primary administrative center for army officials and security services (Scott and Scott, 2019). The Soviets leveraged Latvia's advanced pre-war industrial infrastructure and railway connections to Moscow and St. Petersburg, establishing it as the region's logistical and industrial hub (Kasekamp, 2023). Estonia's extensive 1,200-kilometer coastline made it the focal point for Soviet naval and coast guard operations. Lithuania followed a different path. Moscow implemented less intensive industrial policies there, resulting in smaller waves of immigration from other Soviet republics compared to its northern neighbors. Lithuania's shorter coastline also reduced its importance to the navy, limiting the scope of military installations and associated population transfers.

Although all three Baltic states endured similar occupations - featuring hundreds of military installations, large-scale industrialization, and forced population transfers - the magnitude of accompanying demographic change varied significantly. Estonia and Latvia experienced massive population shifts that fundamentally altered their ethnic composition. Share of ethnic Estonians dropped from 94 percent of the population in 1945 to 65 percent by 1989, while ethnic Latvians declined from 80 percent to 52 percent over the same period (Kasekamp, 2010). Lithuania's ethnic composition was more stable (83.9 to 79.6 percent).

Base closures. When the Soviet Union collapsed, the Baltic states inherited hundreds of military installations and thousands of Russian military personnel. Soviet military presence generated local economic activity through multiple channels: large bases directly employed civilian workers (janitors, construction workers, technical staff); military-industrial facilities produced equipment and supplies; military personnel and families patronized local establishments for goods and services. In the absence of U.S.-style negotiated economic provisions, this integration occurred mainly through incidental rather than intentional channels, as bases required local labor and personnel spent wages in local economies.

Moscow dissolved the Baltic Military District in 1992, prompting each new state to begin negotiations with Russia over troop withdrawals and base closures. Russia deliberately obstructed and prolonged these talks, apparently seeking to extend its military presence (Upmalis et al., 2012). After multiple negotiation rounds and several abrupt halts, Russia signed withdrawal agreements with all three states in 1994 (Clinton, 1994). The final agreements transferred approximately 104,000 hectares to Latvia, 66,000 hectares to Lithuania, and 85,000 hectares to Estonia (Bonn International Center for Conversion, 1996).

In practice, the 1994 agreements could not tame the chaotic reality of the withdrawal process, which had already begun in 1991. Russian forces abandoned many bases without proper inventories or condition assessments, leaving facilities in disrepair while ignoring environmental protocols. Military-industrial facilities ceased operations, eliminating both direct employment and demand for local suppliers. Base personnel departed suddenly, removing consumer spending from local economies. During this volatile period, some soldiers stole and sold movable military assets (e.g., machinery, electronics, weapons, ammunition) for personal profit. The Soviet military's practice of dumping toxic materials into the environment made many sites unusable without significant cleanup and investment (Jauhiainen, 1998). The combination of abandoned facilities, departed personnel, and environmental contamination created severe, concentrated economic shocks in base-hosting communities.

The withdrawal agreements provided no compensation to cushion economic disruptions from base closures. Russian opposition to financial assistance, combined with Baltic politicians' single-minded focus on rapid military withdrawal, eliminated any possibility of coordinated economic transition support. This haphazard process contrasted sharply with post-Cold War base closure programs in Germany, Denmark, and Sweden, where governments provided targeted aid to soften economic and social disruption (Kauppi, 2014).

The Baltic states faced fundamentally different circumstances from organized closure processes like the U.S. BRAC program. While BRAC commissions planned closures with congressional oversight and dedicated funding for conversion efforts, Moscow made its decisions unilaterally and abruptly. Baltic governments could only respond to closure decisions post factum. They had no capacity to control their timing, sequence, or manner.

The closures took place as all three states were navigating political and economic transformations from communist command economies to market systems. State bureaucracies were nascent, regional administrations were undergoing wholesale reforms, leaving municipal governments to manage complex base conversion projects. Local authorities typically lacked the financial resources and administrative expertise necessary to attract private investment or prevent abandoned sites from deteriorating into environmental hazards.

Post-independence economic developments. The Baltic states are rare examples of post-Soviet republics in which the independence movements of the late 1980s managed to push through broad economic restructuring without suffering elite capture (Hellman, 1998). Nevertheless, central-planning and militarization left long-term impacts on economic development and a lasting Russian influence on energy and trade policy.

At the outset of the 1990s, large industrial enterprises dominated all three economies. These enterprises often produced energy-intensive intermediate goods for the entire Soviet economy. The concentration of monopolistic industrial firms created vested interests that frequently opposed reform agendas. Moreover, strong ties bound these enterprises to other Soviet republics, predominantly Russia, with less than 5 percent of production heading to markets outside the USSR before 1990 (Hanson, 1996).

Important sectoral differences distinguished the three states. Estonia housed more light industry, relied less on all-Union coordination, and employed more workers in private enterprises, easing its transition. Latvia was the most industrialized of the three, with approximately 15 percent of its labor force working in military production facilities that Russians predominantly staffed and managed (World Bank, 1993). Lithuania maintained a smaller industrial base and depended more heavily on agriculture and light industries.

All three states pursued similar reform strategies. Governments liberalized currency exchange, limited capital controls, and implemented mass privatization programs. Given the higher proportion of Russian-dominated industrial enterprises, Latvia and Estonia followed a path of mass privatization, whereas Lithuania adopted a more case-by-case approach that emphasized restructuring companies before privatizing them. Land privatization throughout the 1990s proceeded at a much slower pace, complicated by voucher schemes and competing claims over plots that the Soviets had nationalized (OECD, 2000, p.28-38).

This context proved crucial for voters evaluating politicians. The initial decade after regaining independence required citizens to judge leaders on complex economic reforms while simultaneously considering long-term geopolitical goals of joining the EU and NATO — objectives that delivered few immediately tangible benefits. The reform process left substantial economic goods as objects of political competition, creating conditions in which retrospective economic voting could powerfully shape electoral outcomes.

Privatization also preserved channels for Russian influence, as state companies like Gazprom acquired stakes in local enterprises and maintained leverage through energy dependence, trade, and tourism. Yet Russia's invasion of Georgia in 2008 and annexation of Crimea in 2014 prompted Baltic states to reduce energy dependence on Russia. Liberalizing gas markets, the U.S. shale revolution, and emerging LNG infrastructure allowed security concerns to displace economic ones in Baltic-Russian relations (Bergmane, 2020).

At the same time that they were experiencing Soviet base withdrawals, local communities were simultaneously navigating broader economic restructuring, privatization, and shifting geopolitical alignments. Voters had to attribute responsibility for economic hardship across multiple potential sources: Soviet legacy industries, reform-minded governments, Russian economic influence, or local management of base conversion efforts.

Post-independence political developments. Outside the economic domain, citizenship policy emerged as the most divisive political issue across the Baltic states. Lithuania adopted the most inclusive approach, automatically granting citizenship to anyone who could prove their birth – or that of a parent or grandparent – within Lithuanian territory. It also allowed other permanent residents to obtain citizenship by taking an oath of loyalty, without requiring Lithuanian language proficiency (Barrington, 1995).

Estonia and Latvia, facing much larger ethnic minority populations, implemented more restrictive citizenship policies, restoring citizenship only to those who held it before Soviet occupation on June 16, 1940, and their descendants. This framework effectively created two categories of residents, classifying approximately 740,000 Latvians and 500,000 Estonians as “non-citizens” or “aliens” and barring them from voting (Muiznieks et al., 2013). Former military personnel, veterans, and their families faced three options: remain stateless, acquire Russian citizenship, or undergo naturalization.

Estonia and Latvia pursued markedly different naturalization timelines and strategies. Estonia launched its naturalization process in 1992, allowing the majority of applications to succeed by 1995, before the country tightened language requirements. Latvia delayed implementation until 1994, imposing strict language standards and a complex age-bracket system that restricted eligibility based on applicants’ arrival dates and ages. Latvian voters eliminated these restrictions in a 1998 referendum, triggering a surge in applications. Both countries experienced dramatic naturalization spikes following their 2004 European Union accession, as non-citizens sought access to Schengen zone mobility and EU benefits (Muiznieks et al., 2013). A crucial difference remains: Estonia extends municipal voting rights to non-citizen residents, while Latvia denies them any electoral participation.

Latvia, Estonia, and Lithuania each took a distinct approach to democratic representation. Latvia uses pure proportional representation with 100 parliamentary seats across five constituencies, alongside municipal elections with population-scaled councils. Estonia elects a 101-member parliament through 12 multi-mandate districts using vote quotas for seat allocation. Lithuania maintains a mixed system combining 71 single-seat majority constituencies with 70 nationwide proportional seats, and uniquely holds direct mayoral elections alongside proportional council elections. All three states use four-year parliamentary terms and 5% national thresholds (7% in Lithuania for multi-party lists) and offer voters preference-expression mechanisms like candidate ranking and plus/minus voting.

Political parties in the region have consistently differentiated themselves along a geopolitical cleavage that pits pro-Russian orientation against pro-EU/NATO integration. This divide has closely overlapped with party positions on citizenship and minority language rights. In Estonia, the Centre Party has historically advocated for Russian-language education rights and closer economic ties with Russia, while simultaneously opposing restrictive citizenship policies.[9] Latvia's Harmony Centre has similarly positioned itself as a champion of Russian-speaking minorities, by supporting bilingual education, while also maintaining cooperation agreements with Putin's United Russia party.[10] Lithuania presents a more complex pattern, where the Electoral Action of Poles in Lithuania (EAPL-CFA) forms coalitions with ethnic Russian parties (e.g., Russian Alliance), creating cross-ethnic minority coalitions that advocate for expanded citizenship rights and language protections while maintaining more ambivalent positions on EU integration and NATO membership. Following Russia's annexation of Crimea in 2014, most of these parties have softened or shifted away from openly pro-Moscow positions. However, the broader structural alignment between pro-Russian geopolitical orientation and expansive minority rights positions reflects the historical legacy of Soviet-era demographic changes. Parties representing Russian-speaking populations oppose restrictive citizenship laws that disenfranchise post-1940 migrants, while favoring policies that maintain cultural and economic ties with Russia.

While popular front parties (i.e., Sajudis in Lithuania, Tautas Fronte in Latvia, Rahvarinne in Estonia) dominated early coalition governments and implemented crucial market reforms, political dynamics shifted over time. Pro-Russian parties and populist movements gradually consolidated bases of support, and mounted increasingly effective electoral challenges (Kreuzer and Pettai, 2003). Despite their growing organizational strength, these parties have remained largely isolated from governing coalitions, due to mainstream parties' concerns about their geopolitical orientations and tacit loyalty to Moscow. How Soviet base closures have affected these parties' electoral fortunes is an open empirical question.

[9] The party has shifted toward more mainstream European social democracy after 2014.

[10] In 2017, Harmony Centre joined Party of European Socialists and adopted pro-EU sanctions policies.

3 Data

To test our theoretical predictions about the political and economic effects of base closures, we employ a comprehensive sub-national dataset covering Estonia, Latvia, and Lithuania from 1975 to 2025. The dataset combines information from Soviet archival records, post-independence electoral databases, commercial firm registries, and satellite-derived demographic indicators, organized at the level of 1989 Soviet census enumeration units.[11]

Our spatial framework encompasses 1,224 census enumeration units across the three countries: 230 units in Estonia, 572 in Latvia, and 422 in Lithuania (Figure 1).[12] We constructed polygon geometries for these historical boundaries using Soviet census tables, contemporaneous administrative maps, and contemporaneous GIS datasets, implementing geoprocessing procedures to "roll back" modern boundaries to their 1989 configurations.

Our dependent variables capture three domains of outcomes. For demographic outcomes, we use population counts and densities derived from satellite imagery at 1-kilometer resolution (Schiavina et al., 2023), providing consistent coverage across time and space independent of administrative boundary changes. For economic outcomes, we measure firm counts by sector, employment levels and revenue (converted to constant U.S. dollars), using historical data from Moody's Orbis commercial database (Bureau van Dijk, 2025).

For political outcomes, we measure voter turnout and party vote shares using precinct-level results from parliamentary and municipal elections. We obtained local vote tallies from the Estonian State Electoral Office, Latvian Central Election Commission, and

[11]We anchor our analysis on 1989 Soviet census enumeration boundaries for four reasons. First, they reveal local variation in base impacts that nationally aggregated data might miss (Hikotani et al., 2023; Allen et al., 2020). Second, they avoid the endogeneity of post-independence boundary reforms, implemented in response to some of the same political and economic developments we study. Third, Soviet-era boundaries ensure that spatial units correspond to the governance structures and population distributions that existed when bases closed. Fourth, they enable standardized measurement across all three countries during a transition period when lower-tier administrative units were poorly defined.

[12]These spatial units represent the second-tier administrative level (admin-2) beneath Soviet-era rayons. Most eventually became municipalities or parishes.

Figure 1: **Spatial units and Soviet base locations**. Grey lines represent 1989 administrative boundaries, at the level of republic (thick), rayon (medium), and census enumeration unit (thin). Circles denote locations with closed or abandoned Soviet bases (white), and locations with Soviet bases that were repurposed or transferred to host nation (black).

Lithuanian Central Electoral Commission. For Estonia, we have data on 8 municipal election cycles from 1993 to 2017 and 7 parliamentary cycles from 1995 to 2019. For Latvia, our dataset covers 7 municipal elections from 1997 to 2021 and 9 parliamentary elections from 1993 to 2022. For Lithuania, we include 8 municipal elections from 1995 to 2019 and 7 parliamentary elections from 1992 to 2024.[13] We developed bespoke parsing pro-

[13] Our dataset covers Estonian municipal elections in 1993, 1996, 1999, 2002, 2005, 2009, 2013, 2017, and parliamentary elections in 1995, 1999, 2003, 2007, 2011, 2015, 2019. For Latvia, we include municipal elections in 1997, 2001, 2005, 2009, 2013, 2017, 2021, and parliamentary elections in 1993, 1998, 2002, 2006, 2010, 2011, 2014, 2018, 2022. For Lithuania, we have municipal election data for 1995, 1997, 2000,

cedures for each election, including automated web scraping for machine-readable data formats, and table extraction using optical character recognition for elections stored only as non-searchable scanned PDF documents. We classify parties along the pro-Russian versus pro-Western dimension based on their geopolitical orientations, positions on minority language rights, and coalition behaviors (see Appendix A2).

Our primary explanatory variables identify military base locations (Figure 1), closure timing (Figure 2), and base characteristics. We identified closure events from Soviet military archives, post-independence defense ministry records, and contemporary news reports, creating indicators for base presence, closure occurrence, and post-closure status (abandoned versus repurposed).[14] Base typology variables distinguish between naval, aviation, ground, strategic, educational, research, industrial support, and other facility types.

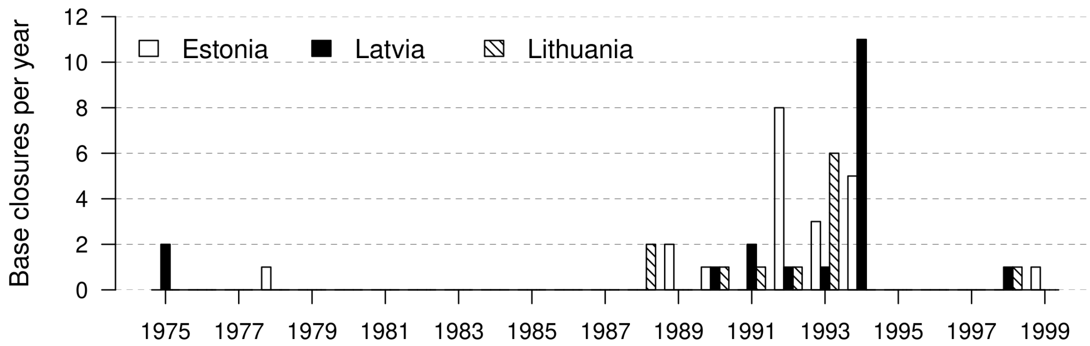
We classify each Soviet base as high, moderate, or low economic profile, based on size, personnel numbers, and integration with the local economy. High-profile bases (e.g., large garrisons, naval installations, military-industrial facilities) were economic anchors, employing local civilians in substantial numbers and generating demand for food, freight, construction, and professional services. Moderate- and low-profile bases were smaller and more specialized, and generated a more limited set of local economic interactions (.e.g, basic provisioning and occasional day labor, shops catering to off-duty personnel and families).

To address potential confounders that might influence local outcomes independent of base closures, we include 1989 census measures of population size, ethnic composition (percentage Russian, Latvian, Estonian, Lithuanian, others), pre-independence urbanization,

2002, 2007, 2011, 2015, 2019, and parliamentary elections in 1992, 1996, 2008, 2012, 2016, 2020, 2024.

[14]Key primary sources include Fes'kov et al. (2004, 2013); Upmalis (2014); BIVIAP (2025). Repurposed bases include facilities that Baltic governments transferred to national military forces, converted to civilian uses (e.g., airports, industrial parks, housing developments), or allocated to other governmental functions (e.g., border guard stations, police training facilities). In contrast, abandoned bases were vacant and unused. The distinction matters economically: repurposed facilities could partially offset job losses through new employment opportunities, while abandoned sites generated no replacement economic activity.

Figure 2: **Timing of Soviet base closures**.



Note: Our main analyses exclude Soviet-era (pre-1991) base closures. Appendix A4.3 reports supplementary analyses with modified treatment variables that include these older events.

economic activity, and geography (Torchenov and Markov, eds, 1983; Goskomstat, 1989).

The panel structure extends from 1975 to 2025, providing substantial pre-treatment and post-treatment observation periods for most base closures, which occurred primarily between 1990 and 1995. This temporal coverage enables us to exploit both cross-sectional variation in base locations and temporal variation in closure timing.

4 Analysis

We employ two complementary specifications to evaluate how military withdrawals affected local demographic, economic, and political outcomes. First, we estimate a dose-response relationship, capturing how the cumulative number of base closures affects outcomes, net of unobserved heterogeneity across communities and common temporal shocks:

$$y_{i,t} = \beta \text{Closures}_{i,t} + \mathbf{X}_{i,t}' \boldsymbol{\gamma} + \alpha_i + \lambda_t \times \text{Country}_i + \epsilon_{i,t} \tag{1}$$

where $y_{i,t}$ denotes an outcome for community i at time t, $\text{Closures}_{i,t}$ measures the cumulative number of base closures in community i by time t, $\mathbf{X}_{i,t}$ contains time-varying controls,

α_i represents community fixed effects, $\lambda_t \times \text{Country}_i$ are country-specific year fixed effects, and $\epsilon_{i,t}$ is the error term.[15] We cluster standard errors at the community and year levels to account for spatial and temporal correlation in outcomes. The coefficient β captures the average effect of each additional base closure on local outcomes, under the assumption of strict exogeneity: that closure timing is uncorrelated with unobserved determinants of outcomes after controlling for observables, and community and time fixed effects.

Our second specification uses a difference-in-differences design with a binary treatment, comparing communities that experienced any base closure to those that never did:

$$y_{i,t} = \delta(\text{Treated}_i \times \text{Post}_t) + \mathbf{X}'_{i,t}\boldsymbol{\gamma} + \alpha_i + \lambda_t \times \text{Country}_i + \epsilon_{i,t} \tag{2}$$

where Treated_i equals one for communities that eventually experienced base closures and zero otherwise, Post_t equals one for periods after the first closure occurs in that community. δ represents the average treatment effect on the treated.

Both specifications rely on the parallel trends assumption that treated and control communities would have followed similar outcome trajectories absent base closures. We test this assumption in Appendix A3 using event study regressions and Wald joint significance tests. Our analyses show no systematic pre-trends or pre-treatment effects across our main outcome measures, supporting the validity of our estimation strategy.

For electoral outcomes like turnout and vote shares (Hypotheses 3 and 4), which are proportions bounded between zero and one, we estimate both specifications using generalized linear models with binomial family and logit links. Because GLM coefficients do not directly represent marginal effects on the outcome scale, we report average marginal effects (AMEs). For GLMs with a logit link, the marginal effect of treatment at observation (i,t) is $\hat{\beta}\, \hat{p}_{it}(1-\hat{p}_{it})$, where $\hat{\beta}$ is the treatment coefficient (β in (1), δ in (2)) and $\hat{p}_{it}$ is the model's

[15] 52 communities (4.2%) experienced more than one closure.

predicted probability of the outcome (turnout, vote share) at that observation.[16] We average this quantity across all observations to obtain $\text{AME} = \frac{1}{NT}\sum_{i=1}^{N}\sum_{t=1}^{T}\hat{\beta}\;\hat{p}_{it}\,(1-\hat{p}_{it})$, which represents the average percentage point change in outcome associated with base closures.[17] For non-electoral outcomes (Hypotheses 1 and 2), we use linear regression.

4.1 Results

Tables 1–5 present our main results, first pooling all three countries and then estimating separate models for Estonia, Latvia, and Lithuania.

Table 1: **Test of Hypothesis 1**. Base closures and population decline.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-5.5 (1.4)**	-4.7 (1.7)**	-5.7 (2.2)*	-3.8 (3.1)	-5 (2)*	-4.6 (2.1)*	-5.8 (1.9)**	-6.6 (3)*
Location FE	N=1227	N=1227	N=231	N=231	N=574	N=574	N=422	N=422
Country-Year FE	T=153	T=153	T=51	T=51	T=51	T=51	T=51	T=51
Sample size	62,576	62,576	11,780	11,780	29,274	29,274	21,522	21,522
R-squared	0.982	0.981	0.981	0.98	0.981	0.981	0.983	0.983

Dependent variable is **local population count (thousands)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$.

Table 1 tests Hypothesis 1, examining how base closures affected local demographics. Base closures consistently reduced local population across all three countries. In the pooled model, each additional base closure reduces community population by approximately 4,700–5,500 people, with two-way fixed effects and difference-in-differences estimates aligning closely. Country-specific results reveal similar magnitudes: Estonia experiences population losses of 3,800–5,700 per closure, Latvia 4,600–5,000, and Lithuania

[16] $\hat{p}_{it}(1-\hat{p}_{it})$ represents the derivative of the inverse logit function evaluated at observation (i,t).

[17] We estimate standard errors for average marginal effects using the delta method, which applies a first-order Taylor expansion to approximate the variance of the AME as a function of estimated coefficients and their covariance matrix.

5,800–6,600. While point estimates vary somewhat across countries, all are statistically significant and economically substantial, providing strong support for Hypothesis 1.

Table 2: **Test of Hypothesis 2**. Base closures and economic decline.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-0.4 (0.1)**	-0.4 (0.1)**	-0.4 (0.1)**	-0.6 (0.2)**	-0.03 (0.2)	-0.1 (0.2)	-0.8 (0.1)**	-0.8 (0.3)**
Location FE	N=1227	N=1227	N=231	N=231	N=574	N=574	N=422	N=422
Country-Year FE	T=111	T=111	T=37	T=37	T=37	T=37	T=37	T=37
Sample size	45,395	45,395	8,545	8,545	21,237	21,237	15,613	15,613
R-squared	0.865	0.865	0.653	0.653	0.853	0.853	0.705	0.704

Dependent variable is **average number of employees per local firm (logged)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$.

Table 2 tests Hypothesis 2 and examines economic consequences of military withdrawals. In both pooled models, a base closure produces an estimated $100 \times (e^{-0.4} - 1) = -33$ percent change in average firm employment.[18] In Estonia, the coefficient estimates imply $100 \times (e^{-0.4} - 1) = -33$ percent and $100 \times (e^{-0.6} - 1) = -45$ percent declines. In Lithuania, the estimated percent change is $100 \times (e^{-0.8} - 1) = -55$ in both specifications. Latvia shows weaker evidence, potentially because of greater economic diversification, different base integration patterns, or data limitations in Latvian firm registries during the transition period. Together, the economic contractions in the Baltics far exceed those typically found in U.S. BRAC studies, potentially reflecting the absence of compensation and the simultaneous challenges of economic transition from planned to market systems.

Table 3 tests Hypothesis 3 for Latvia and Lithuania only, as precinct-level turnout data are unavailable for Estonia. The pooled model shows that closures increase voter turnout by 0.9–1.1 percentage points (pp). Both Latvia and Lithuania display positive turnout effects, although Lithuania shows substantially larger magnitude (10 pp) compared to Latvia (1

[18] We use the log of average firm employment as the outcome, and report percent change as $100 \times (e^{\hat{\beta}} - 1)$.

Table 3: **Test of Hypothesis 3**. Base closures and increased voter turnout.

	All		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD
Estimate	0.01 (0.004)*	0.01 (0.005)*	0.01 (0.002)**	0.01 (0.003)$'$	0.1 (0.002)**	0.1 (0.003)**
Location FE	N=996	N=996	N=572	N=574	N=422	N=422
Country-Year FE	T=28	T=28	T=16	T=16	T=15	T=15
Sample size	15,511	15,511	9,183	9,183	6,328	6,328
R-squared	0.196	0.196	0.265	0.265	0.083	0.083

Dependent variable is **local voter turnout (proportion of registered voters)**. Turnout data are not available for Estonia. Reported values are average marginal effect estimates $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $^{'}p < 0.1$.

pp). The larger Lithuanian effect may reflect differences in the timing and geographic concentration of base closures relative to electoral cycles, or heterogeneity in how local labor markets in each country depended on Soviet bases.

Table 4: **Test of Hypothesis 4**. Base closures and increased pro-Russian support.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	0.03 (0.01)*	0.03 (0.02)*	0.1 (0.1)$'$	1.1 (4)	0.04 (0.01)**	0.04 (0.02)*	0.03 (0.01)*	0.04 (0.01)**
Location FE	N=1224	N=1224	N=228	N=228	N=574	N=574	N=422	N=422
Country-Year FE	T=45	T=30	T=14	T=14	T=16	T=16	T=15	T=15
Sample size	18,095	18,095	2,734	2,734	9,039	9,039	6,322	6,322
R-squared	0.567	0.564	0.56	0.56	0.542	0.542	0.591	0.591

Dependent variable is **pro-Russian party vote share (proportion of valid votes)**. Reported values are average marginal effect estimates $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $^{'}p < 0.1$.

Table 4 tests Hypothesis 4 across all three countries. In the pooled results, closures increase pro-Russian vote shares by 3.0–3.2 pp. Country-specific estimates reveal consistent effects: Estonia shows 10 pp increases (but with large standard errors), Latvia displays 4 pp increases, and Lithuania shows 3–4 pp increases, all statistically significant in at least one specification. The pro-Russian vote share increases confirm that economic disruptions may activate retrospective voting against pro-Western incumbents, with pro-Russian parties serving as natural vehicles for anti-establishment protest across all three Baltic states.

Table 5: **Test of Hypothesis 5**. Base closures have larger political effects where the severity of the economic shock is greater.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
High impact	0.04 (0.01)**	0.04 (0.01)**	1.1 (0.1)**	1.1 (0.01)**	0.04 (0.003)**	0.05 (0.005)**	0.05 (0.01)**	0.05 (0.01)**
Low/Moderate	-0.002 (0.005)	0.01 (0.004)$'$	-0.03 (0.01)**	1.1 (0.01)**	0.02 (0.1)	0.02 (0.1)	0.001 (0.005)	0.01 (0.005)
Location FE	N=1224	N=1224	N=228	N=228	N=574	N=574	N=422	N=422
Country-Year FE	T=45	T=45	T=14	T=14	T=16	T=16	T=15	T=15
Sample size	18,095	18,095	2,734	2,734	9,039	9,039	6,322	6,322
R-squared	0.567	0.567	0.56	0.56	0.542	0.542	0.591	0.591

Dependent variable is **pro-Russian party vote share (proportion of valid votes)**. Reported values are average marginal interaction effect estimates $\left(\text{High impact} = \frac{1}{NT}\sum_i \sum_t \hat{\beta}_1 \hat{p}_{it}(1-\hat{p}_{it})\right)$, $\left(\text{Low/Moderate impact} = \frac{1}{NT}\sum_i \sum_t (\hat{\beta}_1 + \hat{\beta}_2)\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

Table 5 tests Hypothesis 5, which predicts that the political effects of base closures will be stronger where the economic shock is more severe. The results show that base closures at high economic profile sites (e.g., large garrisons, military-industrial facilities) consistently produce larger increases in pro-Russian party vote share than closures at lower-profile sites. In the pooled sample, high-impact closures increase pro-Russian vote share by 4 pp (FE and DiD, both significant at $p < 0.01$), while closures at moderate/low-impact bases yield smaller, more uncertain effects. Estonia shows the largest effect for high-profile closures, with Latvia and Lithuania also exhibiting positive and significant effects, although somewhat smaller in magnitude. For lower-profile bases, effects are smaller, sometimes negative, and often not statistically significant, especially in Latvia and Lithuania. These patterns support Hypothesis 5, indicating that communities that lost their primary economic anchors exhibited the strongest electoral backlash against pro-Western incumbents.

These findings strongly support our theoretical framework, despite some cross-country heterogeneity and data limitations. Soviet withdrawals created demographic shocks across all countries (H1), economic shocks that varied in measurable employment effects (H2), and political responses that manifested in increased turnout (H3) and elevated pro-Russian vote shares (H4). Moreover, the data confirm that that the magnitude of economic shock directly moderates the electoral consequences of military withdrawal (H5).

Our event study analyses in Appendix A3 provide additional validation for these findings. Pre-treatment coefficient estimates cluster around zero and show no systematic trends, while post-treatment coefficients diverge sharply, indicating that base closures caused the observed changes rather than merely correlating with pre-existing differences between affected and unaffected communities. Wald tests fail to reject the null hypothesis of joint pre-treatment coefficient insignificance across all outcomes, further supporting the parallel trends assumption underlying our difference-in-differences estimates.

4.2 Robustness

While our main results generally support our theoretical predictions, several threats to inference warrant examination (see full analyses in Appendix A4).

First, our estimation strategy assumes that Moscow made base closure decisions independently of local political-economic conditions. Supplementary analyses (Appendix A4.1) find no evidence that pre-treatment characteristics (e.g., population size, ethnicity, geography, base type) predict closure probability, supporting our claim that withdrawal decisions responded to macro-level geopolitical realignments, not community-level factors. Interestingly, base re-openings do show systematic patterns: larger and more ethnically Russian communities were more likely to see re-openings. This divergence suggests that while Soviet withdrawals reflected external imperatives, subsequent facility conversion decisions incorporated localized considerations about economic viability and political constituencies.

Second, our results may depend on specific measurement choices for demographic and economic outcomes. Robustness tests (Appendix A4.2) using population density and firm operating revenues confirm our findings. Population density reductions mirror our population count results, while firm operating revenues show substantial, statistically significant contractions that exceed employment declines in magnitude, and suggest closures reduced both the number of workers and revenue per worker. These convergent results confirm that base closures created substantial material hardship in affected communities.

Third, Soviet-era closures might have operated through different mechanisms than post-independence withdrawals. Including pre-1991 closures in our analysis (Appendix A4.3) leaves demographic effects substantively unchanged, with population declines closely matching our main estimates.[19] This consistency across time periods suggests that population responses (e.g., out-migration of military personnel, families, mobile civilians) operated similarly regardless of broader systemic context.

Fourth, spatial spillovers across neighboring communities could inflate the precision of our estimates. Appendix A4.4 shows that our results withstand corrections for spatial correlation using Conley standard errors, with nearly all key findings retaining statistical significance despite modestly larger standard errors. This robustness demonstrates that our conclusions do not depend on assumptions of spatially independent errors and remain valid when accounting for correlated economic shocks across neighboring communities.

[19] We limit this check to demographic outcomes given the fundamental incomparabilities between Soviet and post-Soviet economic and electoral institutions.

5 Mechanisms and Interpretation

We now examine the mechanisms and interpretations underlying our main findings, addressing how economic shocks from base closures translate into electoral change.

Electorate composition or preference change? A fundamental interpretive question concerns whether increased pro-Russian vote shares reflect compositional change (i.e., disproportionately pro-realignment voters exiting the community) or preference change (i.e., voters who stay updating behavior in response to economic hardship). Both channels are theoretically consistent with our framework, but they carry different implications for the scope and generalizability of economic voting as a mechanism. A purely compositional result would suggest that elections aggregate pre-existing preferences rather than reflecting dynamic response to economic shocks, while a preference-shift result would imply that economic disruption actively reshapes political behavior.

We decompose these channels by estimating the effect of base closures on (logged) anti-realignment vote totals, with and without conditioning on the (logged) size of the potential electorate. If the electoral shift were purely compositional, anti-realignment vote totals would scale one-for-one with electorate size, and we would expect the treatment coefficient to vanish after conditioning. Departures from this benchmark indicate that something beyond mechanical composition is at work. The Baltic context gives this decomposition a distinctive feature: post-independence citizenship laws in Estonia and Latvia denied automatic citizenship to Soviet-era settlers, who were disproportionately Russian speakers employed on or near military installations. The population most economically exposed to base closures was therefore largely ineligible to vote, and we expect eligible voter counts to be relatively insulated from the demographic attrition we documented in our test of H1.

Our results support this expectation (Appendix A5.1). Base closures have modest positive effects on log eligible voters, consistent with insulation of the enfranchised electorate from direct demographic attrition. Conditioning on eligible voters absorbs approximately 54 percent of the total effect on log anti-realignment vote totals. The remaining 46 percent persists as a direct effect, consistent with genuine preference or mobilization change among enfranchised residents who stayed. Under pure compositional change, this residual should be zero; we formally reject this null ($\chi^2(1) = 31.3$, $p < 0.001$).[20] Roughly half the electoral shift thus reflects the changing composition of the enfranchised population; the other half reflects genuine preference or mobilization change among those who stayed and could vote.

Electoral arenas. Electoral institutions vary in ways that could shape how voters channel economic grievances. Voters may perceive local governments as bearing more direct responsibility for managing base conversion. Municipal elections may also attract voters more motivated by concrete local economic conditions than by abstract geopolitical alignments. As Appendix A5.2 shows, base closures increased pro-Russian vote shares in both parliamentary and municipal elections, with somewhat stronger effects in municipal contests across all three countries. Our theoretical framework anticipated that closures would mobilize economically pragmatic voters without strong geopolitical preferences. The larger municipal effects align with this mechanism. The consistently positive effects across both levels suggest that economic disruptions activated protest voting in multiple arenas.

Ethnic voting. Ethnic composition could mediate how geopolitical and economic motivations interact to shape voter responses. Constituencies with higher shares of ethnic Russians might respond to base closures more strongly, because they face aligned rather than competing pressures: geopolitical dissatisfaction with Soviet withdrawal and eco-

[20]Conditioning on log valid votes instead of, or in addition to, log eligible voters yields virtually identical residual estimates, confirming that the compositional channel operates through population departure rather than differential turnout mobilization among stayers.

nomic grievances from job losses. The empirical evidence (Appendix A5.3) provides mixed support, with Latvia showing clear ethnic heterogeneity, while Estonia presents a more complex pattern. The divergent patterns likely reflect differences in institutional design: Estonia's extension of municipal voting rights to non-citizens potentially mobilized Russian-speaking residents across communities with varying ethnic composition, while Latvia's more restrictive citizenship policies concentrated political participation among ethnically Russian citizens in specific localities. These findings highlight a crucial scope condition: ethnic heterogeneity in political responses depends not just on demographic composition but also on citizenship and electoral rules that determine which residents can vote.

Anti-realignment vote or anti-incumbent protest? Are our findings on pro-Russian electoral support merely capturing generic anti-incumbent sentiment? The retrospective voting literature documents that voters often engage in "blind retrospection," mechanically punishing incumbents for negative outcomes regardless of actual responsibility or ideological alignment (Healy and Malhotra, 2013; Achen and Bartels, 2004). Under this interpretation, voters respond to economic hardship by supporting any available opposition, with pro-Russian parties benefiting simply because they typically occupied challenger status in Baltic politics during the 1990s. To adjudicate between these mechanisms, we conducted supplementary analyses examining how base closures affected vote shares for incumbent parties, defined as those in the governing coalition at the national level (Appendix A5.4). The results provide limited evidence for pure anti-incumbent punishment: our estimates show small negative effects on incumbent vote share, but these estimates lack statistical precision and vary substantially across countries.

If voters engaged purely in blind retrospection, we would expect symmetric effects: substantial losses for incumbents matched by gains distributed proportionally among all opposition parties. Instead, we see strong pro-Russian gains despite weak incumbent losses, suggesting that closures mobilized voters with specific affinities for the political positions that pro-Russian parties represented. This pattern aligns with our theoretical framework emphasizing that pro-Russian parties united multiple anti-establishment constituencies (redistributive left-wing and right-coded populist movements) that particularly appealed to economically distressed voters (Margalit, 2019). The heterogeneity we document by ethnic composition (discussed above) further supports this interpretation, as pure anti-incumbent voting should not systematically vary by community demographics.

6 Conclusion

This paper investigated how foreign military base closures affect local political participation and preferences. We argued that these closures create competing pressures: geopolitical shifts that might satisfy nationalist or pro-realignment voters, and economic disruptions that activate retrospective voting. Our theoretical framework showed how these cross-cutting forces reshape the electorate, ultimately benefiting anti-realignment parties that serve as vehicles for anti-establishment sentiment in post-occupation contexts. We found robust evidence of these patterns in Estonia, Latvia, and Lithuania after the Soviet collapse.

Our findings contribute to several research programs. First, we extend scholarship on economic voting by demonstrating that economic disruptions generate adverse political effects even when they coincide with celebrated geopolitical outcomes. The Baltic states represent a hard case: Soviet withdrawal meant complete footprint removal and full sovereignty restoration (Cooley, 2008), yet concentrated economic costs drove local political attitudes more powerfully than diffuse geopolitical benefits (Hikotani et al., 2023).

Second, our analysis reveals that pro-Russian electoral gains reflect both genuine preference change and compositional shifts in the electorate: pro-realignment residents disproportionately exited, while those who remained showed increased anti-realignment support.

These effects appear in national and municipal elections and are stronger in communities with larger ethnic Russian populations, where geopolitical and economic grievances align.

Third, our findings speak to debates about military installations and host-country politics. Recent research shows that contact with U.S. military personnel and associated economic benefits build local support during consensual deployments (Allen et al., 2020). Our results reveal that even non-consensual occupation creates economic dependencies that can outlast geopolitical animosity after withdrawal (Cooley, 2008).

From a policy perspective, our findings carry implications for contemporary debates about base closures and military retrenchment (Yeo, 2011, 2017). The contrast between organized closure processes like U.S. BRAC and the chaotic Soviet withdrawal underscores the importance of institutional design. Where base closures are unavoidable, advance planning and economic transition support may help mitigate political fallout. The national security risks of sudden military withdrawals extend beyond immediate strategic concerns to include long-term electoral shifts that can benefit foreign-aligned political parties. These dynamics remain relevant for understanding contemporary U.S. force posture adjustments, Russian withdrawals from post-Soviet states, and the political challenges of economic transition planning in communities hosting military installations.

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A1 Theoretical Appendix

Let $\mathcal{C}$ denote a set of communities, indexed by $c \in \mathcal{C}$. We characterize each community c at time t by its economic state $\omega_{c,t} \in \mathbb{R}$, base closure indicator $\mathcal{B}_{c,t} \in 0, 1$, number of eligible voters $N_{c,t} \in \mathbb{N}$, and competing sets of parties $\mathcal{J}_{c,t}$.

Each voter i has geopolitical ideal point $g_i \in [-1, 1]$ (where 1 represents pro-realignment orientation and -1 represents anti-realignment orientation), economic sensitivity $\alpha_i \in \mathbb{R}+$, participation decision $d_{i,c,t} \in 0, 1$, and vote choice $v_{i,c,t} \in \mathcal{J}_{c,t}$.

In each election, $J = 2$ groups of parties compete: $\mathcal{J}_{c,t} = A, B$. A denotes the pro-realignment set of parties, and B denotes the anti-realignment set. In the post-Soviet context, A might include EU/NATO-oriented reformists, liberal democrats, and nationalists. B might comprise both left-wing forces (e.g., communist successor parties seeking redistributive policies) and right-coded populist movements (e.g., ethnic Russian minority parties and Euroskeptic groups favoring closer Moscow ties), making them vehicles for multiple forms of anti-establishment sentiment following economic shocks (Margalit, 2019).

Each group of parties j takes a geopolitical position $y_j^g \in [-1, 1]$ and has incumbent status $I_j^{inc} \in 0, 1$ where $I_j^{inc} = 1$ if party group j is in the governing coalition. We assume that $y_B^g < y_A^g$. Crucially, we also assume that the anti-realignment bloc is generally excluded from governing coalitions ($I_B^{inc} = 0$). As outsiders, who are not responsible for state policy and are not defending past government decisions, anti-realignment parties can oppose the status quo without bearing accountability for the economic state of the community. This allows anti-realignment parties to position themselves as natural vehicles for retrospective punishment of pro-realignment incumbents (Healy and Malhotra, 2013).

Let $s_{j,c,t}$ be party group j's vote share in community c at time t.

Definition 1 (Hybrid Spatial-Retrospective Voter Utility)**.** Voter i's utility from supporting party group j under current conditions is:

$$u_{i,c,t}(j) = -\lambda_i(g_i - y_j^g)^2 - \alpha_i \cdot \delta \cdot I_j^{inc} + \varepsilon_{ij} \tag{3}$$

where $\lambda_i > 0$ weights geopolitical salience (spatial utility loss from distance), $\delta \geq 0$ measures the magnitude of economic shock, and $\varepsilon_{ij} \sim \text{Gumbel}(0, \sigma)$ captures utility shocks.

The first term generates spatial voting based on geopolitical proximity. The second term creates retrospective economic voting where voters punish incumbent parties for poor economic performance. Economic shock intensity $\delta = 0$ represents normal economic conditions, while $\delta > 0$ represents the magnitude of economic disruption from base closure.

The stochastic component ε_{ij} encompasses idiosyncratic preferences and multiple sources of heterogeneity in voter decision-making (Healy and Malhotra, 2013). This includes not only idiosyncratic individual variation in party evaluations, but also systematic differences in how voters process information about economic conditions.[21] Electoral responses to these conditions may reflect rational updating about incumbent competence, cognitive heuristics, or affective responses to economic hardship. We are agnostic about which mechanism dominates for any given voter, allowing the model to accommodate diverse voter types.

Definition 2 (Voter Types by Geopolitical Preferences)**.** Based on their pre-shock geopolitical preferences, we classify voters into three types using the parameter $\Gamma_i = \lambda_i[(g_i - y_A^g)^2 - (g_i - y_B^g)^2]$, which measures the geopolitical advantage of the pro-realignment party group for voter i:

1. *Anti-realignment voters* have ideal points closer to anti-realignment parties ($\Gamma_i < 0$).
2. *Pro-realignment voters* have ideal points closer to pro-realignment parties ($\Gamma_i > 0$).
3. *Geopolitically indifferent voters* (or *swing voters*) lack strong preferences between party groups based on geopolitical considerations alone ($\Gamma_i \approx 0$).

Voters without strong geopolitical commitments become pivotal in translating economic shocks into electoral outcomes.

Definition 3 (Voter's Optimization Problem)**.** The participation condition is

$$d_{i,c,t} = \begin{cases} 1 & \text{if } \mathbb{E}[\max_j u_{i,c,t}(j)] > \kappa \\ 0 & \text{otherwise} \end{cases} \tag{4}$$

where $\mathbb{E}[\max_j u_{i,c,t}(j)]$ is voter i's maximum expected utility from voting, and κ represents the fixed cost voters incur from participating in the election (e.g. time spent traveling to polling station, waiting in line, gathering information about candidates).

If participating, voter i chooses party group j^* such that $j^* \in \arg\max_{j \in \mathcal{J}_{c,t}} u_{i,c,t}(j)$.

Definition 4 (Community Electoral Equilibrium)**.** An electoral equilibrium in community c at time t comprises a participation rate:

$$T_{c,t} = \frac{1}{N_{c,t}} \sum_{i=1}^{N_{c,t}} d_{i,c,t} \tag{5}$$

and a distribution of vote shares by party group:

$$s_{j,c,t} = \frac{\sum_{i=1}^{N_{c,t}} d_{i,c,t} \cdot \mathbf{1}\{v_{i,c,t} = j\}}{\sum_{i=1}^{N_{c,t}} d_{i,c,t}} \quad \text{for all } j \in \mathcal{J}_{c,t} \tag{6}$$

[21] The Gumbel distribution naturally handles individual-level randomness in utility evaluation and bounded systematic biases, assuming misperceptions are distributed across voters with mean zero.

where $d_{i,c,t} \in \{0,1\}$ is voter i's participation decision and $v_{i,c,t} \in \mathcal{J}_{c,t}$ is voter i's vote choice, conditional on participation.

Assumption 1 (Base Closure Effects)**.** Foreign military base closures create simultaneous shifts on two dimensions:

$$N_{c,t+1} = N_{c,t} - \nu \tag{7}$$

$$\omega_{c,t+1} = \omega_{c,t} - \delta \tag{8}$$

where $\nu > 0$ represents a decrease in population (number of eligible voters) and $\delta > 0$ represents the magnitude of economic disruption.

Assumption 1 is falsifiable. If base closures instead created new economic opportunities, we should see an increase in population and improved economic conditions in these communities, invalidating eq. (7) and (8). We will test the empirical validity of this assumption as dedicated hypotheses (see below).

Base closures can increase voter turnout through two pathways: selective out-migration of lower-propensity voters (Lemma 1), and increased stakes of vote choice (Lemma 2).

Lemma 1 (Selective Out-Migration and Voter Turnout)**.** *Base closure-induced population decline increases aggregate turnout rates through selective out-migration of lower-propensity voters. For a community c experiencing base closure at time t, if out-migrants have below-average participation rates, then:*

$$\frac{Votes_{c,t+1}}{N_{c,t+1}} > \frac{Votes_{c,t}}{N_{c,t}} \tag{9}$$

Proof. Let $N_{c,t}$ denote the eligible voter population in community c at time t, and let p_i represent the participation probability of voter i.

Pre-closure, the aggregate turnout rate is:

$$T_{c,t} = \frac{1}{N_{c,t}} \sum_{i=1}^{N_{c,t}} p_i = \bar{p}_{c,t} \tag{10}$$

where $\bar{p}_{c,t}$ is the mean participation probability across all eligible voters.

Base closure causes a subset $\mathcal{L} \subset \{1, 2, \ldots, N_{c,t}\}$ of $\nu = |\mathcal{L}|$ voters to migrate, where out-migrants have below-average participation propensity:

$$\frac{1}{\nu} \sum_{i \in \mathcal{L}} p_i = \bar{p}_{\mathcal{L}} < \bar{p}_{c,t} \tag{11}$$

The remaining population includes $\mathcal{S} = \{1, 2, \ldots, N_{c,t}\} \setminus \mathcal{L}$ stayers, with $N_{c,t+1} = N_{c,t} - \nu$ (from Assumption 1). We can decompose the total population as:

$$N_{c,t} \cdot \bar{p}_{c,t} = \nu \cdot \bar{p}_{\mathcal{L}} + (N_{c,t} - \nu) \cdot \bar{p}_{\mathcal{S}} \tag{12}$$

where $\bar{p}_{\mathcal{S}} = \frac{1}{N_{c,t}-\nu} \sum_{i \in \mathcal{S}} p_i$ is the mean participation rate of stayers.

Rearranging for the stayers' participation rate:

$$\bar{p}_{\mathcal{S}} = \bar{p}_{c,t} + \frac{\nu}{N_{c,t} - \nu}(\bar{p}_{c,t} - \bar{p}_{\mathcal{L}}) > \bar{p}_{c,t} \tag{13}$$

Since out-migrants have below-average participation ($\bar{p}_{\mathcal{L}} < \bar{p}_{c,t}$), we have $(\bar{p}_{c,t} - \bar{p}_{\mathcal{L}}) > 0$.

The post-closure turnout rate equals the participation rate of stayers:

$$T_{c,t+1} = \frac{1}{N_{c,t+1}} \sum_{i \in \mathcal{S}} p_i = \bar{p}_{\mathcal{S}} \tag{14}$$

The turnout increase is proportional to migration rate $\frac{\nu}{N_{c,t}}$ and participation gap $(\bar{p}_{c,t} - \bar{p}_{\mathcal{L}})$:

$$T_{c,t+1} - T_{c,t} = \frac{\nu}{N_{c,t} - \nu}(\bar{p}_{c,t} - \bar{p}_{\mathcal{L}}) > 0 \tag{15}$$

□

Lemma 2 (Stakes-Based Participation and Voter Turnout)**.** *Base closures increase voter turnout by raising the stakes of electoral choice. For a community c experiencing base closure at time t, aggregate participation increases:*

$$\Pr(vote_{c,t+1}) > \Pr(vote_{c,t}) \tag{16}$$

Proof. Base closures create a negative economic shock $\delta > 0$ (from Assumption 1). Before base closure, with $\delta = 0$, the deterministic components of utility are:

$$V_{i,A}^{\text{pre}} = -\lambda_i (g_i - y_A^g)^2 \tag{17}$$

$$V_{i,B}^{\text{pre}} = -\lambda_i (g_i - y_B^g)^2 \tag{18}$$

After the closure, the economic shock $\delta > 0$ creates punishment opportunities against pro-realignment incumbents. In this baseline specification, we assume anti-realignment parties face no equivalent punishment mechanism due to non-incumbency ($I_B^{\text{inc}} = 0$):

$$V_{i,A}^{\text{post}} = -\lambda_i (g_i - y_A^g)^2 - \alpha_i \delta \tag{19}$$

$$V_{i,B}^{\text{post}} = -\lambda_i (g_i - y_B^g)^2 \tag{20}$$

This asymmetry captures the immediate electoral environment but abstracts from potential attribution of blame to the former occupier (and, by extension, anti-realignment parties). We relax this assumption below, allowing voters to punish either group of parties.

Define $\Gamma_i = \lambda_i [(g_i - y_A^g)^2 - (g_i - y_B^g)^2]$ as the pre-shock geopolitical advantage of the pro-realignment party group for voter i.

For anti-realignment voters ($\Gamma_i < 0$), the post-shock utility gap becomes:

$$V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} = -\Gamma_i + \alpha_i \delta > -\Gamma_i \tag{21}$$

Since $\Gamma_i < 0$, the addition of $\alpha_i \delta > 0$ increases the utility advantage of their preferred (anti-realignment) party group. This makes electoral participation more worthwhile for anti-realignment voters who were previously close to the participation margin. Whether they interpret this as rational sanctioning of incompetence, expression of economic grievance, or affective response to hardship, the mechanism increases their incentive to vote.

For geopolitically indifferent voters ($\Gamma_i \approx 0$), the economic shock creates:

$$V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} = \alpha_i \delta > 0 \tag{22}$$

Where previously there was near-indifference, the economic shock creates a meaningful incentive to vote against the incumbent. This transforms previously apathetic voters into motivated participants with clear anti-incumbent preferences, consistent with multiple mechanisms in the retrospective voting literature (Healy and Malhotra, 2013).

For pro-realignment voters ($\Gamma_i > 0$), the post-shock utility gap becomes:

$$V_{i,A}^{\text{post}} - V_{i,B}^{\text{post}} = \Gamma_i - \alpha_i \delta \tag{23}$$

The effect here depends on the relative magnitudes. If $\alpha_i \delta < \Gamma_i$, the pro-realignment party group remains preferred but with reduced margin, making the choice more competitive. If $\alpha_i \delta > \Gamma_i$, the voter switches preference to anti-realignment parties, creating meaningful stakes where strong pro-realignment preference previously existed. In both cases, the choice becomes more consequential for voters near the participation margin.

For each voter type, base closures can strengthen existing preferences or create competitive choices where strong preferences previously existed. This makes electoral participation more worthwhile for marginal voters, regardless of whether their responses reflect rational calculation, cognitive shortcuts, or emotional reactions to economic distress.

Formally, let $\mathcal{M}_t = i : \kappa - \epsilon < \mathbb{E}[\max_j u_{i,c,t}(j)] < \kappa$ be the set of marginal voters at time t. Base closures push a substantial subset of $\mathcal{M}_t$ above the participation threshold, expanding the participating electorate. Therefore, $\Pr(\text{vote}_{c,t+1}) > \Pr(\text{vote}_{c,t})$. □

Lemma 3 (Anti-realignment Vote Share Response)**.** *Base closures increase anti-realignment vote share when the economic punishment effect dominates geopolitical preferences. Specifically, for voters with moderate geopolitical preferences and high economic sensitivity, base closures create vote switching toward anti-realignment party groups:*

$$s_{B,c,t+1} > s_{B,c,t} \tag{24}$$

when the condition $0 < \Gamma_i < \alpha_i\delta$ *holds for a sufficient mass of voters.*

Proof. We establish conditions for vote switching using the deterministic components of utility. Voter i switches from pro- to anti-realignment party groups when the deterministic utility difference changes sign due to base closure. Pre-shock deterministic utilities are:

$$V_{i,A}^{\text{pre}} = -\lambda_i(g_i - y_A^g)^2 \tag{25}$$

$$V_{i,B}^{\text{pre}} = -\lambda_i(g_i - y_B^g)^2 \tag{26}$$

and the post-shock deterministic utilities are:

$$V_{i,A}^{\text{post}} = -\lambda_i(g_i - y_A^g)^2 - \alpha_i\delta \tag{27}$$

$$V_{i,B}^{\text{post}} = -\lambda_i(g_i - y_B^g)^2 \tag{28}$$

Vote switching occurs when both of the following are true:

$$V_{i,A}^{\text{pre}} - V_{i,B}^{\text{pre}} > 0 \quad \text{(preferred pro-realignment pre-shock)} \tag{29}$$

$$V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} > 0 \quad \text{(prefer anti-realignment post-shock)} \tag{30}$$

Using the voter type classification from Definition 2, where $\Gamma_i = \lambda_i[(g_i - y_A^g)^2 - (g_i - y_B^g)^2]$, we can express these conditions as $\Gamma_i > 0$ and $-\Gamma_i + \alpha_i\delta > 0$. Voters switch when:

$$0 < \Gamma_i < \alpha_i\delta \tag{31}$$

Voters satisfying condition (31) have two key properties. The first is a moderate pro-realignment preference, where $\Gamma_i > 0$ but small, meaning these voters initially prefer pro-realignment party groups but without strong conviction. The second is sufficient economic sensitivity, $\alpha_i\delta > \Gamma_i$, meaning their retrospective response to economic conditions exceeds their geopolitical preferences. This response may reflect rational sanctioning of incumbent performance, selection of alternatives expected to provide better economic management, cognitive heuristics linking hardship to those in power, or affective reactions to deteriorating conditions (Healy and Malhotra, 2013). For geopolitically indifferent voters ($\Gamma_i \approx 0$), the switching condition reduces to $0 < \alpha_i \delta$, which holds for all economically sensitive voters ($\alpha_i > 0$), making them particularly responsive to economic shocks.

We now establish that switching flows in only one direction under the baseline asymmetric punishment structure. Let $\mathcal{Z}$ denote the set of voters who switch from pro-realignment to anti-realignment party groups:

$$\mathcal{Z} = i \in N : 0 < \Gamma_i < \alpha_i \delta \tag{32}$$

Consider voters who initially preferred anti-realignment party groups ($\Gamma_i < 0$). Post-shock, they prefer anti-realignment groups even more strongly, since:

$$V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} = -\Gamma_i + \alpha_i \delta > -\Gamma_i > 0 \tag{33}$$

For strongly pro-realignment voters with $\Gamma_i > \alpha_i \delta$, the geopolitical preference dominates and they continue supporting pro-realignment party groups. Therefore, switching occurs only from pro- to anti-realignment party groups in this baseline specification, where anti-realignment parties face no punishment mechanism.

The change in anti-realignment vote share equals:

$$s_{B,c,t+1} - s_{B,c,t} = \frac{\text{Net switchers to anti-realignment party groups}}{\text{Total participating voters}} \quad = \frac{|\mathcal{Z}|}{\sum_{i=1}^{N_{c,t+1}} d_{i,c,t+1}} > 0 \tag{34}$$

Anti-realignment vote share increases significantly when $|\mathcal{Z}|$ is large, which occurs when there is either a large population of moderate voters (many voters have Γ_i small but positive), there is high economic sensitivity (many voters have large α_i), or there is a substantial economic shock (large δ makes $\alpha_i \delta$ likely to exceed geopolitical preferences Γ_i).

Therefore, base closures increase anti-realignment vote share through unidirectional vote switching from pro-realignment to anti-realignment party groups. The magnitude depends on the prevalence of voters with moderate geopolitical preferences and high economic sensitivity. These voters prioritize retrospective responses to economic hardship over geopolitical alignment, whether as punishment of incumbents, search for better alternatives, or expression of economic grievance. □

Theorem 1 (Political Effects of Base Closures)**.** *A community c experiencing base closure at time t (i.e., $\mathcal{B}_{c,t} = 1$) will experience increased voter participation, and increased electoral* *support for anti-realignment parties.*

Proof. The voter participation result follows directly from both Lemma 1 and Lemma 2. The vote share result follows directly from Lemma 3. □

Proposition 1 (Shock Size and Electoral Response). *Base closure effects on both turnout and anti-realignment vote share increase with the magnitude of economic shock:*

1. *Turnout response: Larger economic shocks activate more marginal voters*
2. *Vote share response:* $\frac{\partial|\mathcal{Z}|}{\partial\delta} > 0$

Proof. From Lemma 2, voters participate when $\mathbb{E}[\max_j u_{i,c,t}(j)] > \kappa$. For voters with $\alpha_i > 0$, utility gaps increase with δ: anti-realignment voters experience gap $-\Gamma_i + \alpha_i\delta$, geopolitically indifferent voters experience gap $\alpha_i\delta$. Since expected maximum utility increases with utility gaps, larger δ pushes more voters above threshold κ.

From Lemma 3, switchers satisfy $0 < \Gamma_i < \alpha_i\delta$. Taking the derivative:

$$\frac{\partial|\mathcal{Z}|}{\partial\delta} = \int \alpha_i \cdot f(\Gamma_i = \alpha_i\delta)\, dF > 0 \tag{35}$$

since $\alpha_i > 0$. □

The model generates the following main empirical predictions:

H1: Communities experiencing base closures will exhibit population decline

H2: Communities experiencing base closures will exhibit employment decline

H3: Communities experiencing base closures will exhibit increased voter turnout

H4: Communities experiencing base closures will exhibit more anti-realignment support

Hypotheses 1-2 follow from Assumption 1. Hypotheses 3-4 follow from Theorem 1. The comparative statics in Proposition 1 generate an additional hypothesis about heterogeneity:

H5: Effects are stronger where the magnitude of the base closure is higher (e.g. larger bases, location with fewer alternative economic opportunities)

A1.1 Extension: Heterogeneous attribution of blame

The baseline model assumes asymmetric punishment opportunities, where only pro-realignment incumbents face electoral sanctions for base closures. This reflects a typical Baltic political configuration where anti-realignment parties serve as challengers. However, voters may differ in how they attribute responsibility for base closures across the party spectrum.

We extend the utility function to allow for party-specific punishment parameters:

Definition 5 (Extended Utility with Heterogeneous Blame Attribution)**.** Voter i's utility from supporting party group j under current conditions is:

$$u_{i,c,t}(j) = -\lambda_i(g_i - y_j^g)^2 - \alpha_i \cdot \rho_j \cdot \delta \cdot \mathcal{B}_{c,t} + \varepsilon_{ij} \tag{36}$$

where $\rho_j \in \mathbb{R}$ captures the extent to which voters blame party group j for base closure-induced economic hardship. When $\rho_j > 0$, voters punish party group j; when $\rho_j < 0$, they reward j (perhaps viewing j as offering protection against such shocks); when $\rho_j = 0$, voters view j as irrelevant to the shock.

This specification nests the baseline model as a special case where $\rho_A = I_A^{\text{inc}}$ and $\rho_B = 0$. The extension accommodates multiple theoretically plausible scenarios:

1. Nearsighted attribution ($\rho_A > \rho_B$). Voters predominantly punish pro-realignment incumbents for base closure-induced economic hardship. This echoes the "blind retrospection" critique in the voting behavior literature, where voters fail to properly benchmark incumbent performance or attribute causality (Achen and Bartels, 2004; Healy and Malhotra, 2013). It is difficult to hold accountable a far-away former occupying power, but it is relatively easy to punish local or national authorities for economic pain that lingers on their watch. Our baseline model represents a special case of this scenario, where voters mechanically punish whoever holds office while completely exempting anti-realignment parties ($\rho_A > 0, \rho_B = 0$). More generally, voters may simultaneously blame both sides but hold incumbents more accountable ($\rho_A > \rho_B > 0$). Under this scenario, voters with moderate pro-realignment preferences ($0 < \Gamma_i < \alpha_i(\rho_A - \rho_B)\delta$) switch to anti-realignment parties, increasing $s_{B,c,t}$.
2. Farsighted attribution ($\rho_B > \rho_A$). Voters predominantly punish anti-realignment parties for their association with the former occupying power responsible for base closures. In this case, anti-realignment parties face electoral sanctions despite not holding office, as voters engage in prospective evaluation of parties' geopolitical alignments and attribute responsibility for the closure to the former occupier. The switching condition from Lemma 3 reverses: voters with moderate anti-realignment preferences ($\alpha_i(\rho_A - \rho_B)\delta < \Gamma_i < 0$) switch to pro-realignment parties, decreasing $s_{B,c,t}$.
3. Equal blame ($\rho_A = \rho_B$). Voters attribute responsibility equally across the political spectrum, either blaming all parties uniformly for not preventing or mitigating base closures ($\rho_A = \rho_B > 0$), or viewing the economic shock as beyond any party's control ($\rho_A = \rho_B = 0$). In the latter case, voters view base closures as exogenous events unrelated to electoral choices, consistent with models of voter rationality that benchmark incumbent performance against structural constraints (Achen and Bartels, 2004).

This extension has implications for vote share dynamics. Voter i switches from pro-realignment to anti-realignment parties when:

$$V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} = -\Gamma_i + \alpha_i(\rho_A - \rho_B)\delta > 0 \ \Rightarrow \Gamma_i < \alpha_i(\rho_A - \rho_B)\delta \tag{37}$$

This generalizes the baseline switching condition. When $\rho_A > \rho_B$, the right-hand side remains positive, and voters with moderate pro-realignment preferences ($0 < \Gamma_i < \alpha_i(\rho_A - \rho_B)\delta$) switch to anti-realignment parties, as in the baseline. When $\rho_B > \rho_A$, the inequality reverses, and voters with moderate anti-realignment preferences switch to pro-realignment.

The change in anti-realignment vote share becomes:

$$\Delta s_{B,c,t} = \frac{1}{\sum_{i=1}^{N_{c,t+1}} d_{i,c,t+1}} \left[|\mathcal{Z}^{A\to B}| - |\mathcal{Z}^{B\to A}| \right] \tag{38}$$

where $\mathcal{Z}^{A\to B} = i : 0 < \Gamma_i < \alpha_i(\rho_A - \rho_B)\delta$ comprises voters switching from pro-realignment to anti-realignment parties, and $\mathcal{Z}^{B\to A} = i : \alpha_i(\rho_A - \rho_B)\delta < \Gamma_i < 0$ comprises voters switching in the opposite direction.

Returning to our hypotheses, some of the extended model's predictions depend on the population distribution of blame attribution. For the effect on vote shares (H4), the sign and magnitude of anti-realignment electoral response depend on whether voters predominantly engage in nearsighted incumbent punishment ($\rho_A > \rho_B$) or farsighted punishment of the occupier and its fellow travelers ($\rho_B > \rho_A$). Anti-realignment parties gain when voters blame pro-realignment incumbents more than anti-realignment challengers. Under equal attribution ($\rho_A = \rho_B$), however, the post-shock utility gap becomes $V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} = -\Gamma_i + \alpha_i(\rho_A - \rho_B)\delta = -\Gamma_i$, identical to the pre-shock gap. No vote switching occurs, as the condition $\Gamma_i < \alpha_i(\rho_A - \rho_B)\delta$ cannot be satisfied when $\rho_A = \rho_B$.

The turnout increase result (H3) also remains unchanged, as long as $\rho_A \neq \rho_B$. Any attribution structure with differential blame raises stakes and mobilizes marginal voters:

$$\Pr(\text{vote}_{c,t+1}) > \Pr(\text{vote}_{c,t}) \quad \text{for all } \rho_A \neq \rho_B \tag{39}$$

This prediction survives the extension intact in scenarios 1 and 2 because base closures increase the utility gap between parties for marginal voters, regardless of which party faces punishment. The turnout increase result from Lemma 2 does not hold when $\rho_A = \rho_B$. When voters blame both party groups equally, the shock affects utilities symmetrically:

$$V_{i,A}^{\text{post}} = -\lambda_i(g_i - y_A^g)^2 - \alpha_i \rho \delta \tag{40}$$

$$V_{i,B}^{\text{post}} = -\lambda_i(g_i - y_B^g)^2 - \alpha_i \rho \delta \tag{41}$$

The utility gap between parties becomes $V_{i,B}^{\text{post}} - V_{i,A}^{\text{post}} = -\Gamma_i + \alpha_i(\rho_A - \rho_B)\delta = -\Gamma_i$. This is identical to the pre-shock utility gap. The economic shock does not change the relative attractiveness of the parties.

Consider two cases. If $\rho_A = \rho_B = 0$ ("no blame"), base closures do not affect utility calculations at all. Turnout remains unchanged through the stakes mechanism, although selective migration from Lemma 1 still applies. If $\rho_A = \rho_B = \rho > 0$ ("equal positive blame"), both parties receive equal punishment, and the expected maximum utility from voting decreases relative to the pre-shock period, pushing voters below the participation threshold κ and causing turnout to fall.

An important observable implication follows: turnout increases only when differential blame exists ($\rho_A \neq \rho_B$). Finding increased turnout after base closures would constitute evidence against the equal-blame scenario and support asymmetric attribution.

Our baseline model expects empirical patterns to align most closely with the "near-sighted attribution" scenario ($\rho_A > 0, \rho_B = 0$), but the data will inform which attribution mechanisms dominate in the Baltic context.

A2 Data and Measurement

This appendix documents our measurement and classification procedures for two key variables in our analysis: pro-Russian political parties and Soviet military installations.

A2.1 Pro-Russian Parties

We classify political parties and electoral alliances as pro-Russian if they meet at least one of three criteria. First, we examine geopolitical orientation, identifying parties that advocate for closer political, economic, or security ties with Russia, oppose integration with Western institutions like the European Union and NATO, publicly support Russian foreign policy objectives, or explicitly criticize Western sanctions against Russia. Second, we assess positions on Russian minority rights and language policy, including promotion of Russian as a second state language, opposition to Estonian-, Latvian-, or Lithuanian-only language laws, and advocacy of special status or rights for Russian-speaking minorities. Third, we evaluate political alliances and rhetoric, documenting electoral or formal cooperation with the Russian government or Kremlin-aligned entities such as the United Russia party, public expressions of support by party leaders for Russian actions in neighboring countries, and/or participation in coalitions or electoral lists where a Russia-friendly orientation is explicit.

Tables A1, A2, and A3 present all parties and alliances meeting these criteria in Estonia, Latvia, and Lithuania respectively. The tables indicate which specific criteria each organization satisfies, revealing considerable variation in how pro-Russian political forces position themselves across the three Baltic states. Some parties exhibit all three characteristics simultaneously, while others qualify based on a single dimension such as minority rights advocacy or coalition participation with explicitly pro-Russian organizations.

A2.2 Soviet Base Locations and Status

Tables A4, A5, and A6 document the locations of Soviet military bases across Estonia, Latvia, and Lithuania, organized by region and locality. We identified these installations and their closure events from Soviet military archives, post-independence defense ministry records, and contemporary news reports.[22] The tables indicate each base's post-closure status (abandoned, repurposed, or active) and economic profile classification. We classify each installation as high, moderate, or low economic profile by evaluating its size, personnel numbers, and integration with the local economy. High-profile bases include large garrisons or military-industrial facilities that served as economic anchors for nearby towns and generated substantial demand for goods and services through significant local employment. Moderate-profile bases are smaller or more specialized installations with medium personnel levels and limited but notable economic ties to local communities, supporting local transport, retail, or technical services. Low-profile facilities were small, remote, or minimally integrated, with few personnel and little direct influence on local economic activity beyond basic supply needs. This classification scheme enables us to test H5.

[22] Key primary sources include Fes'kov et al. (2004, 2013); Upmalis (2014); BIVIAP (2025).

Table A1: **Pro-Russian political parties and electoral alliances** (Estonia)

Party Name	**Geopolitical Orientation**	**Minority Rights & Language**	**Political Alliances & Rhetoric**
Eesti Keskerakond[1]	✓		✓
Eesti Konservatiivne Rahvaerakond[2]	✓		✓
Eestimaa Ühendatud Rahvapartei[3]	✓	✓	✓
Eestimaa Ühendatud Vasakpartei[4]			✓
EVL Eesti Keskerakond ning Eesti Pensionäride ja Perede Erakond[5]	✓	✓	✓
EVL Eesti Keskerakonna ja Eesti Maarahva Erakonna[5]	✓	✓	✓
EVL Keskerakond ja Maaliit[5]	✓	✓	✓
EVL Keskerakond-Maaliit[5]	✓	✓	✓
EVL Keskerakonna ja Koonderakonna Liit[5]	✓	✓	✓
EVL Kesktee[5]	✓	✓	✓
EVL Ühtsus ja Usaldus[6]	✓	✓	✓
Konstitutsioonierakond[6]	✓	✓	✓
KVL Keskerakonna Liit[5]	✓		✓
KVL Keskerakonna Toetajad[5]	✓		✓
KVL Kesktee[5]	✓		✓
MKOE[7]	✓	✓	✓
PEEK[8]	✓	✓	✓
Valimisliit Sinuga Koos[9]	✓	✓	✓
Valimisliit Tegutseme Koos[9]	✓	✓	✓
Vene Balti Erakond Eestis[10]	✓	✓	✓
Vene Erakond Eestis[11]	✓	✓	✓
VL Edasi Koos Meiega[9]	✓	✓	✓
VL Koos Edasi[9]	✓	✓	✓
VL Koos Rohelise Looduse Eest[9]	✓	✓	✓
VL Teeme Koos[9]	✓	✓	✓

[1] Historians and political analysts widely describe the Centre Party as the most Russia-friendly among Estonia's political parties. Source [2] While the party is eurosceptic, EKRE also exhibits xenophobic and anti-immigration positions, opposing minority rights rather than explicitly aligning with Russia. Source
[3] The party later became the Constitution Party (Konstitutsioonierakond). Source [4] We classify the party as pro-Russian before 2023, though it reaffirmed its support for Ukraine thereafter. Source [5] We classify this alliance as pro-Russian based on Eesti Keskerakond's participation. [6] We classify this as pro-Russian based on its alliance with Eestimaa Ühendatud Rahvapartei. [7] Political parties formed the Electoral Union "Our Home is Estonia" for the 1995 Estonian parliamentary elections. David James Smith, John Hiden (2012), *Ethnic Diversity and the Nation State: National Cultural Autonomy Revisited*. [8] The "Coalition Party" refers to an electoral alliance involving the Estonian Centre Party (Eesti Keskerakond). Source [9] This alliance associates with the Together (Koos) political party in Estonia. For VL Edasi Koos Meiega, see Source. [10] The Vene Balti Erakond Eestis (VBEE) operated as a political party in Estonia from around 2000 to 2004. [11] The Russian Party in Estonia (Vene Erakond Eestis) represents Russian-speaking minority interests.

Table A2: **Pro-Russian political parties and electoral alliances** (Latvia)

Party Name	**Geopolitical Orientation**	**Minority Rights & Language**	**Political Alliances & Rhetoric**
Jaunā Saskaņa[1]	✓	✓	✓
Krievu Nacionālais Demokrātiskais Saraksts Demokrātiskās Iniciatīvas Centrs Baltijas Konstitucionālā Partija[2]	✓	✓	✓
Krievu Partija[3]	✓	✓	✓
Latvijas Krievu Savienība[4]	✓	✓	✓
Latvijas Sociālistiskā Partija[5]	✓	✓	✓
Latvijas Sociālistiskā Partija un Kustība par Sociālo Taisnīgumu un Līdztiesību Latvijā[6]	✓	✓	✓
Līdztiesība[7]	✓	✓	✓
PCTVL Par Cilvēka Tiesībām Vienotā Latvijā[8]	✓	✓	✓
Politiskā Partija Stabilitātei[9]	✓	✓	✓
Politisko Organizāciju Apvienība Par Cilvēka Tiesībām Vienotā Latvijā[8]	✓	✓	✓
Politisko Partiju Apvienība Saskaņas Centrs[10]	✓	✓	✓
Politisko Partiju Apvienība Saskaņas Centrs Partija Gods Kalpot Rīgai[10]	✓	✓	✓
Saskaņa[1]	✓	✓	✓
Saskaņa Latvijai – Atdzimšana Tautsaimniecībai[1]	✓	✓	✓
Saskaņa Pašiem[1]	✓	✓	✓
Saskaņa Sociāldemokrātiskā Partija[1]	✓	✓	✓
Saskaņa Sociāldemokrātiskā Partija Partija Gods Kalpot Rīgai[1]	✓	✓	✓
Saskaņas Centrs[1]	✓	✓	✓
Tautas Saskaņas Partija[11]	✓		✓
Vēlētāju Apvienība Saskaņa[1]	✓	✓	✓

[1] This party represents the Saskaņa (Harmony) movement, which continues under various names including Jaunā Saskaņa and Saskaņas Centrs. Scholars widely consider Saskaņa the main pro-Russian political force in Latvia. Source 1, Source 2 [2] This alliance connects to the Latvijas Krievu Savienība (LKS). [3] The Krievu Partija operates as another name for the Latvian Union of Russians (LKS). [4] The Latvijas Krievu Savienība (LKS) later became the Latvian Union of Russians. Authorities banned the party in 2024 for threatening Latvia's sovereignty. Source [5] The party connects to Līdztiesība and later aligned with LKS alongside PCTVL. Source [6] This alliance includes Latvijas Sociālistiskā Partija as a member organization. [7] Līdztiesība later became part of PCTVL alongside Aleksandrs Mitrofanovs and Tatjana Ždanoka, both identified as FSB agents. Source [8] Par Cilvēka Tiesībām Vienotā Latvijā (For Human Rights in United Latvia) operates as a pro-Russian political organization. [9] Politiskā Partija Stabilitātei advocates for pro-Russian policies in Latvia. Source [10] These alliances center around Saskaņas Centrs, the predecessor organization to Saskaņa. [11] Tautas Saskaņas Partija (National Harmony Party) operated as a pro-Russian political party. Source

Table A3: **Pro-Russian political parties and electoral alliances** (Lithuania)

Party Name	**Geopolitical Orientation**	**Minority Rights & Language**	**Political Alliances & Rhetoric**
Darbo Partija[1]		✓	✓
Koalicija Darbo Partija – Jaunimas[1]		✓	✓
Koalicija Už Tikrąją Savivaldą Lietuvos Demokratinė Darbo Partija Naujoji Sąjunga[2]		✓	✓
Lenkų Rinkimų Akcijos ir Rusų Aljanso Koalicija Krikščionių Šeimų Sąjunga[3]	✓	✓	✓
Lietuvos Demokratinė Darbo Partija[4]			✓
Lietuvos Lenkų Rinkimų Akcija[3]	✓	✓	✓
Lietuvos Lenkų Rinkimų Akcija Krikščionių Šeimų Sąjunga[3]	✓	✓	✓
Lietuvos Liaudies Partija[5]	✓	✓	✓
Lietuvos Rusų Sąjunga[6]	✓	✓	✓
Lietuvos Socialistų Partija[7]	✓	✓	✓
Partija Tvarka ir Teisingumas[8]		✓	✓
Partija Tvarka ir Teisingumas Liberalai Demokratai[8]		✓	✓
Taikos Koalicija Darbo Partija Lietuvos Krikščioniškosios Demokratijos Partija[1]		✓	✓

[1] The Darbo Partija (Labour Party) and its various coalition formations advocate for minority rights and maintain Russia-tolerant positions. The party emerged in the early 2000s and has participated in multiple electoral coalitions. Source
[2] This coalition originated from Lithuania's post-Soviet political transformation and includes parties with roots in the communist era that maintain accommodating stances toward Russia. [3] The Electoral Action of Poles in Lithuania–Christian Families Alliance (EAPL-CFA) represents Polish and Russian minority interests in Lithuania. Various formations of this alliance have operated under different names, including coalitions with the Russian Alliance. The organization maintains close ties to both Polish and Russian minority communities. Source [4] The Lietuvos Demokratinė Darbo Partija (LDDP) originated from the Lithuanian Communist Party, which ruled during Soviet times. This historical connection influences its Russia-accommodating positions. Source [5] The Lietuvos Liaudies Partija (Lithuanian People's Party) adopts pro-Russian positions and explicitly states it does not fear being called a pro-Russian party. Source [6] The Lietuvos Rusų Sąjunga (Union of Russians of Lithuania) represents Russian minority interests in Lithuania and advocates for closer ties with Russia. Source
[7] The Lietuvos Socialistų Partija (Lithuanian Socialist Party) maintains pro-Russian positions and advocates for policies favorable to Russian interests. Source [8] Partija Tvarka ir Teisingumas (Order and Justice Party) exhibits cautious pragmatism and right-wing populism. Leader Rolandas Paksas maintained close ties to Russian criminal organizations. While not explicitly pro-Russian, the party adopts Russia-tolerant rhetoric that distinguishes it from mainstream Lithuanian politics. Source

Table A4: **Soviet military base locations** (Estonia)

Region	Locality	Base Status	Economic Profile
Harju	Harku	Closed (1)	High (1)
Harju	Joelahtme	Closed (1), Active (1)	High (2)
Harju	Loksa	Closed (1)	High (1)
Harju	Paldiski	Closed (1), Active (1)	High (2)
Harju	Saue	Closed (1)	High (1)
Harju	Tallinn	Closed (3), Repurposed (2)	High (2), Mid (2), Low (1)
Harju	Vasalemma	Active (1)	High (1)
Harju	Viimsi	Closed (2)	High (2)
Ida-Viru	Johvi	Active (1)	High (1)
Ida-Viru	Kohtla-Jarve	Closed (3)	High (3)
Ida-Viru	Sillamae	Closed (1)	High (1)
Laane	Haapsalu	Closed (1)	High (1)
Laane	Hanila	Closed (1)	High (1)
Laane-Viru	Tapa	Active (1)	High (1)
Laane-Viru	Vosu	Closed (1)	High (1)
Parnu	Parnu	Closed (1)	High (1)
Saare	Karla	Closed (1)	High (1)
Tartu	Tartu	Repurposed (2), Active (2)	High (1), Mid (3)
Valga	Puhajarve	Closed (1)	High (1)
Voru	Antsla	Closed (1)	Low (1)
Voru	Voru	Active (2)	High (2)

Values in parentheses indicate number of facilities in each category. Bases marked 'active' remained open after transfer to host nation. Bases marked 'repurposed' are decommissioned or closed facilities converted to civilian use. Sources: Fes'kov et al. (2004, 2013); Upmalis (2014); BIVIAP (2025).

Table A5: **Soviet military base locations** (Latvia)

Region	Locality	Base Status	Economic Profile
Aizkraukles	Aizkraukle	Repurposed (1), Active (1)	High (1), Mid (1)
Aluksnes	Aluksne	Active (2)	High (1), Mid (1)
Aluksnes	Zeltinu	Closed (1)	High (1)
Cesu	Cesis	Active (1)	High (1)
Cesu	Ligatne	Closed (1)	Low (1)
Cesu	Vecpiebalgas	Active (1)	High (1)
Daugavpils	Daugavpils	Closed (1), Active (1)	High (2)
Daugavpils	Liksnas	Active (1)	Mid (1)
Dobeles	Dobele	Repurposed (1), Active (1)	High (2)
Gulbenes	Gulbene	Active (1)	High (1)
Jekabpils	Jekabpils	Closed (1), Repurposed (1), Active (1)	High (3)
Jekabpils	Selpils	Repurposed (1)	Mid (1)
Jekabpils	Zasas	Closed (1)	High (1)
Jelgavas	Jelgava	Closed (1), Active (1)	High (2)
Jurmala City	Jurmala	Closed (1), Repurposed (1)	High (1)
Kraslavas	Kraslava	Active (1)	High (1)
Kuldigas	Kuldiga	Active (1)	High (1)
Kuldigas	Ranku	Closed (1), Active (1)	Mid (1), Low (1)
Liepajas	Liepaja	Closed (1), Repurposed (1), Active (2)	High (4)
Liepajas	Nicas	Closed (1)	Low (1)
Liepajas	Rucavas	Closed (1)	High (1)
Liepajas	Vainode	Closed (1)	High (1)
Limbazu	Limbazi	Active (1)	High (1)
Limbazu	Salacgriva	Closed (1)	High (1)
Madonas	Madona	Active (1)	High (1)
Ogres	Lielvarde	Active (2)	High (2)
Preilu	Preili	Active (1)	High (1)
Rezeknes	Maltas	Active (1)	High (1)
Rezeknes	Rezekne	Active (2)	High (2)
Rigas	Adazu	Closed (1), Active (2)	High (3)
Rigas	Riga	Closed (1), Active (3)	High (1), Mid (1), Low (2)
Rigas	Sigulda	Closed (1)	Low (1)
Rigas	Stopinu	Repurposed (1)	High (1)
Saldus	Novadnieku	Closed (1)	Mid (1)
Saldus	Saldus	Active (1)	High (1)
Talsu	Talsi	Active (1)	High (1)
Tukuma	Tukums	Active (1)	High (1)
Valmieras	Valmiera	Active (1)	High (1)
Ventspils	Ances	Closed (1)	Low (1)
Ventspils	Targales	Closed (1)	Low (1)
Ventspils	Ventspils	Closed (1), Repurposed (1), Active (1)	High (1), Low (2)

See note under Table A4 for details and source information.

Table A6: **Soviet military base locations** (Lithuania)

Region	Locality	Base Status	Economic Profile
Ignalinos	Rimse	Closed (1), Repurposed (1)	High (1)
Jonavos	Dumsiai	Active (1)	High (1)
Jurbarko	Jurbarkas	Closed (1)	Mid (1)
Kauno	Karmelava	Closed (1), Repurposed (1)	Mid (1)
Kauno	Kaunas	Active (1)	High (1)
Kedainiu	Josvainiai	Closed (1)	High (1)
Kedainiu	Kedainiai	Closed (1)	High (1)
Klaipedos	Sendvaris	Closed (1), Active (1)	High (2)
Lazdiju	Sangruda	Repurposed (1), Active (1)	High (2)
Marijampoles	Kazlu Ruda	Active (1)	Mid (1)
Plunges	Plateliai	Repurposed (2)	High (2)
Plunges	Sateikiai	Closed (1)	Mid (1)
Prienu	Islauzas	Repurposed (1)	High (1)
Siauliu	Siauliai	Active (2)	High (2)
Silales	Pajuris	Active (1)	High (1)
Svencioniu	Pabrade	Active (1)	Mid (1)
Ukmerges	Pabaiskas	Closed (1)	High (1)
Ukmerges	Ukmerge	Closed (1)	High (1)
Ukmerges	Vepriai	Closed (1)	High (1)
Vilniaus	Grigaiciai	Active (1)	High (1)
Vilniaus	Juodsiliai	Repurposed (1)	Mid (1)
Vilniaus	Vilnius	Closed (2), Active (1)	Low (3)

See note under Table A4 for details and source information.

A3 Tests of Parallel Trends Assumption

We test the parallel trends assumption using event study regressions that estimate separate coefficients for each year relative to base closure:

$$y_{i,t} = \sum_{k \neq -1} \theta_k \mathbf{1}[t - T_i^* = k] + \mathbf{X}'_{i,t}\boldsymbol{\gamma} + \alpha_i + \lambda_t \times \text{Country}_i + \epsilon_{i,t} \tag{42}$$

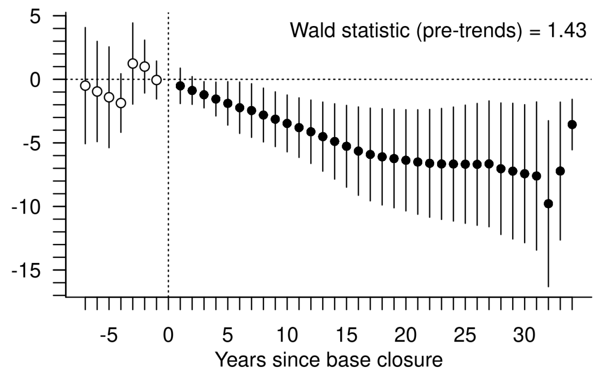
where T_i^* denotes the year of first base closure in community i, and θ_k captures the effect k years before or after closure. We normalize $\theta_{-1} = 0$ as the reference period.

To formally assess whether pre-treatment trends differ between treated and control communities, we also conduct Wald tests of the joint null hypothesis that all pre-treatment coefficients equal zero: $H_0 : \theta_k = 0$ for all $k < -1$. Rejection of this null would indicate differential pre-trends that violate the parallel trends assumption, while failure to reject supports the validity of our identification strategy.

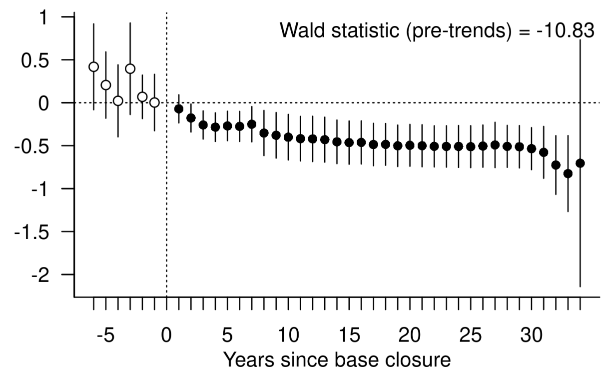
Figure A1 presents the event study estimates alongside Wald test statistics. The figures show no systematic pre-trends across any outcome variable. Wald tests fail to reject the null hypothesis of zero pre-treatment effects at conventional significance levels. These results support the validity of our difference-in-differences design.

Figure A1: **Event study coefficient estimates**. p-values for Wald joint significance test statistics: $^{**}p < 0.01, ^{*}p < 0.05$.

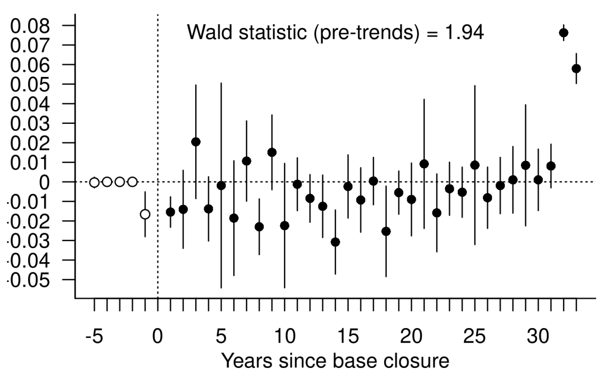
(a) H1: Population size (1000s)



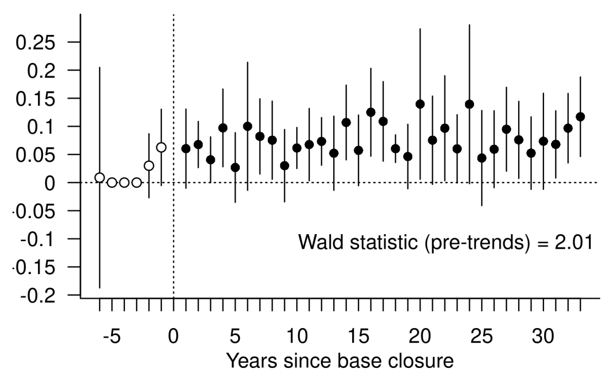
(b) H3: Employment (log)



(c) H3: Voter turnout



(d) H4: Pro-Russian vote share



A4 Supplementary Analyses: Robustness

We conducted several supplementary analyses to assess the robustness of our results and explore additional dimensions of heterogeneity in base closure effects. The analyses in this section examine: (1) pre-treatment differences and determinants of base closures, (2) alternative outcome measures for demographic and economic effects, (3) sensitivity to treatment definition including Soviet-era closures, and (4) spatial correlation in standard errors.

A4.1 Determinants of Base Closures

Our estimation strategy assumes that Moscow's decisions about where and when to close bases were orthogonal to local political-economic conditions. To test this assumption, we estimated fixed effects models regressing indicators of base closures and re-openings (e.g. transfer of base to host nation, re-opening of closed facility) on pre-treatment community characteristics from 1989 and earlier, including population size, ethnic composition, geography, and base type. These models incorporate spatial splines rather than community-level fixed effects, since the latter are completely collinear with time-invariant pre-treatment covariates like geographic area and base type. The spatial spline specification allows us to control for broad spatial patterns in closure probabilities while preserving estimates of the substantive effects of local characteristics that motivate this analysis.

The results in Table A7 reveal no systematic relationship between pre-treatment community characteristics and the likelihood of experiencing base closures. Population size, Russian ethnic share, gender ratios, cropland availability, and distance to manufacturing facilities show no significant associations with closure probability. Base type characteristics similarly fail to predict closures, with all coefficients small in magnitude and statistically insignificant. These null results support our assumption that Moscow made withdrawal decisions based on macro-level geopolitical considerations rather than local conditions.

Base re-openings follow a different pattern. Communities with larger populations, higher Russian ethnic shares, greater geographic area, and locations more distant from manufacturing centers experienced higher probabilities of base re-opening. Some types of facilities (e.g. professional military education) were less likely to reopen than others. These patterns suggest that, while initial closures occurred without regard to local characteristics, subsequent decisions about which facilities to repurpose or reactivate incorporated more strategic considerations about population size and local economic opportunities.

Table A7: **Supplementary Analysis**. Determinants of base closures and re-openings.

Outcome	Base closure		Base re-opening	
Model	FE	FE	FE	FE
Population (1989, log)	0.002 (0.002)	0.003 (0.002)	0.003 (0.001)**	0.002 (0.001)$'$
Proportion Russian (1989)		-0.01 (0.01)		0.005 (7e-04)**
Female-male ratio (1989)	0.002 (0.01)	0.004 (0.01)	-0.01 (0.01)	-0.01 (0.02)
Area (1989, sq.km)	0.02 (0.01)	0.01 (0.02)	0.03 (0.01)**	0.02 (0.01)**
Cropland (1983)	-0.004 (0.004)	-0.005 (0.004)	-5e-04 (0.003)	8e-04 (0.003)
Distance to manufacturing (1983, km)	0.01 (0.2)	0.1 (0.1)	0.3 (0.1)**	0.2 (0.1)*
Type: Aviation	-0.001 (0.004)	5e-04 (0.004)	0.002 (0.002)	0.001 (0.003)
Type: Strategic	-0.01 (0.01)		-0.01 (0.004)$'$	
Type: Ground	0.003 (0.004)	-0.01 (0.004)$'$	0.003 (0.002)	0.002 (0.003)
Type: Education	0.003 (0.01)	-0.003 (0.01)	-0.01 (0.004)**	-0.01 (0.01)
Type: Support	-2e-04 (0.003)	0.01 (0.01)$'$	-8e-04 (0.002)	0.005 (0.003)
Country FE	N_1=3	N_1=2	N_1=3	N_1=2
Rayon FE	N_2=66	N_2=40	N_2=66	N_2=40
Year FE	T=51	T=51	T=51	T=51
Sample size	9,843	7,548	9,843	7,548
R-squared	0.06	0.073	0.022	0.024

Dependent variables are indicators of **base closures** and **base re-openings** in communiry i in year t. Reported values are coefficient estimates from linear probability model with spatial spline; clustered robust standard errors in parentheses. Pooled analysis of all Baltic countries. Russian ethnicity data not available for Lithuania. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

A4.2 Alternative Outcome Measures

Our main analyses measured demographic change through population counts and economic change through firm employment. Here, we re-estimate all models using alternative measures: population density (persons per square kilometer) for H1 and firm operating revenues for H2. The revenue data come from Bureau van Dijk's Orbis database, which provides standardized firm-level financial information across countries. We use the operating revenue (turnover) variable, measured in thousands of USD for the last available year, log-transformed to account for skewness in the firm size distribution.

Table A8 shows that base closures reduced population density by approximately 66-76 persons per square kilometer in the pooled sample. Country-specific estimates show somewhat larger magnitudes than initially described: Estonia experiences density reductions of 55-80 persons per square kilometer, Latvia 79-81, and Lithuania 55-57. All estimates remain statistically significant and directionally consistent with our main population count results, confirming that closures created substantial demographic shocks.

Economic effects on firm operating revenues (Table A9) mirror the employment findings. In the pooled model, closures reduced firm revenues by approximately $100 \times (e^{-0.7} - 1) = -50$ percent (FE) to $100 \times (e^{-1.0} - 1) = -63$ percent (DiD). Estonia experienced revenue declines of 40-59 percent, Latvia 50-55 percent, and Lithuania 67-70 percent. Unlike the employment results where Latvia showed weaker effects, the revenue specifications reveal significant contractions across all three countries. This substantial economic disruption suggests that base closures affected both the number of workers and revenue per worker.

Event study analyses for population density (Figure A2) reveal some evidence of pre-treatment differences, with Wald test p-values meeting conventional significance thresholds. This pattern suggests that communities experiencing closures may have been on slightly different population density trajectories before treatment, although the magnitude of pre-trends is small relative to post-treatment effects. Revenue event studies show no systematic pre-trends, supporting the parallel trends assumption for economic outcomes.

Table A8: **Supplementary Test of Hypothesis 1**. Alternative outcome measure.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-75.1 (24.3)**	-65 (24.8)*	-79.8 (44.3)$'$	-55.1 (48.3)	-81 (30.8)*	-78.9 (33.6)*	-55.2 (19.5)**	-56.8 (27.3)*
Location FE	N=1227	N=1227	N=231	N=231	N=574	N=574	N=422	N=422
Country-Year FE	T=153	T=153	T=51	T=51	T=51	T=51	T=51	T=51
Sample size	62,576	62,576	11,780	11,780	29,274	29,274	21,522	21,522
R-squared	0.963	0.963	0.907	0.905	0.983	0.982	0.98	0.979

Dependent variable is **local population density (population per square km.)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$.

Table A9: **Supplementary Test of Hypothesis 2**. Alternative outcome measure.

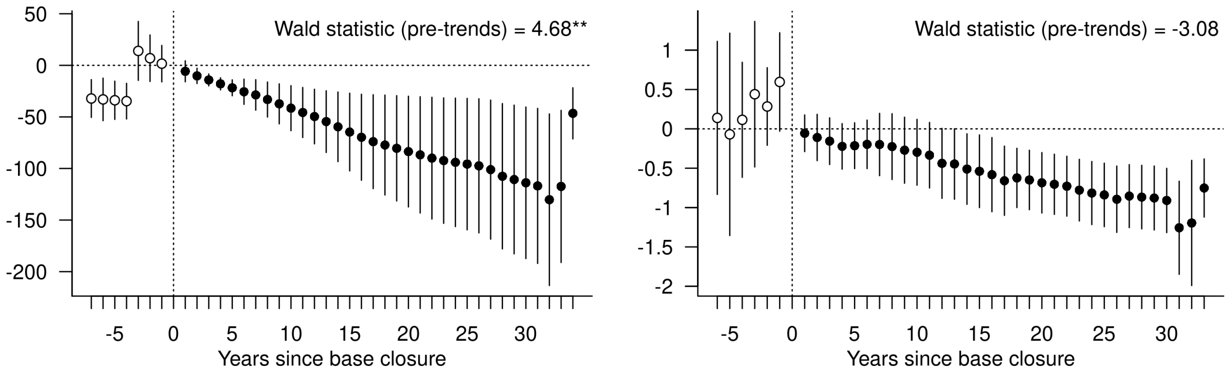
	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-0.7 (0.2)**	-0.9 (0.2)**	-0.5 (0.2)*	-0.9 (0.3)*	-0.7 (0.2)**	-0.8 (0.4)*	-1.1 (0.2)**	-1.2 (0.5)*
Location FE	N=853	N=853	N=231	N=231	N=200	N=200	N=422	N=422
Country-Year FE	T=111	T=111	T=37	T=37	T=37	T=37	T=37	T=37
Sample size	28,496	28,496	7,975	7,975	6,111	6,111	14,410	14,410
R-squared	0.742	0.741	0.619	0.619	0.84	0.839	0.737	0.736

Dependent variable is **local firm revenues, USD (logged)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$.

Figure A2: **Event study coefficient estimates, alternative measures**.

(a) H1: Population density (sq.km)

(b) H2: Firm Revenues (log)



A4.3 Soviet-Era Base Closures

Our main analyses excluded base closures that occurred before 1991, in the final years of Soviet rule, because these early closures occurred under fundamentally different geopolitical conditions than post-independence withdrawals. However, the demographic consequences of withdrawals likely operated through similar mechanisms regardless of whether they occurred before or after independence. We therefore re-estimate our tests of Hypothesis 1, using an expanded treatment measure that includes pre-1991 closures.

We limit this analysis to demographic outcomes for two reasons. First, Soviet-era enterprises operated under central planning with non-market prices, soft budget constraints, and production targets divorced from demand, making it impossible to meaningfully compare employment levels or revenues across the 1991 transition. The Orbis firm-level data also provide very sparse coverage before 1991, when most enterprises were state-owned and did not report financial information in formats comparable to market economies. Second, Soviet-era and post-independence elections differ fundamentally in their institutional structure, competitiveness, and openness. Late Soviet elections operated under single-party dominance with limited competition, featured different party organizations than post-independence democratic contests, and lacked the meaningful geopolitical cleavage between pro-Russian and pro-Western orientations that structures post-independence Baltic politics. These institutional discontinuities make it analytically inappropriate to pool Soviet and post-Soviet electoral observations.

The results in Table A10 show that demographic effects remain substantively unchanged when including Soviet-era closures. Each additional closure reduces population by approximately 4,800-5,600 people in the pooled sample, nearly identical to our main estimates of 4,500-5,200 people. Country-specific results similarly replicate the main findings. All estimates remain statistically significant at conventional levels.

The consistency of these demographic effects across treatment definitions provides additional evidence that base closures created substantial population decline through the mechanisms our theory identifies: out-migration of military personnel, their families, and economically mobile civilians seeking opportunities elsewhere. The robustness to including pre-1991 closures also suggests that demographic responses to military withdrawals operated similarly in the late Soviet period and the post-independence era, despite the broader systemic differences between these two contexts.

Table A10: **Supplementary Test of Hypothesis 1**. DiD estimates with pre-1991 closures.

Model	All DiD	Estonia DiD	Latvia DiD	Lithuania DiD
Estimate	-4.6 (1.6)**	-4.1 (2.9)	-4.8 (2.2)*	-5 (2.5)$'$
Location FE	N=1227	N=231	N=574	N=422
Country-Year FE	T=153	T=51	T=51	T=51
Sample size	62,576	11,780	29,274	21,522
R-squared	0.981	0.98	0.981	0.983

Dependent variable is **local population count (thousands)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

A4.4 Spatial Correlation in Errors

Our main analyses cluster standard errors at the community and year levels to account for within-unit correlation over time and common temporal shocks. However, base closures in neighboring communities might create spatial spillovers or correlated economic shocks that violate the assumption of independent errors. Here, we re-estimate all models using Conley standard errors, with a spatial threshold of 16.26 kilometers (the average nearest-neighbor distance between community centroids) to account for spatial correlation.

Tables A11–A15 suggest that standard errors increase modestly in most specifications, reflecting the additional uncertainty from spatial correlation. Despite larger standard errors, nearly all key results retain statistical significance at conventional levels.

Demographic effects (Table A11) remain strongly significant across all countries, with closures reducing population by 4,600-5,400 people in pooled analyses. Employment effects (Table A12) show similar robustness, with pooled estimates indicating 33-39 percent declines and country-specific results maintaining significance in Estonia and Lithuania.

Political effects also withstand spatial correlation adjustments. Turnout (Table A13) increases of 0.9-1.1 percentage points remain significant in Latvia, although Lithuania shows larger standard errors. Pro-Russian vote share (Table A14) increases remain significant in pooled samples, as do most country-specific estimates. The heterogeneous effects by base impact (Table A15) similarly survive Conley correction, with high-impact closures producing significantly larger pro-Russian vote share increases than lower-impact closures.

These results demonstrate that our main findings do not depend on the assumption of spatially independent errors, and remain valid even when accounting for potential spillovers or correlated shocks across neighboring communities.

Table A11: **Supplementary Test of Hypothesis 1**. Conley standard errors.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-5.5 (1.2)**	-4.7 (1.5)**	-5.7 (1.8)**	-3.8 (2.6)	-5 (2)*	-4.6 (2.1)*	-5.8 (2)**	-6.6 (3)*
Location FE	N=1227	N=1227	N=231	N=231	N=574	N=574	N=422	N=422
Country-Year FE	T=153	T=153	T=51	T=51	T=51	T=51	T=51	T=51
Sample size	62,576	62,576	11,780	11,780	29,274	29,274	21,522	21,522
R-squared	0.982	0.981	0.981	0.98	0.981	0.981	0.983	0.983

Dependent variable is **local population count (thousands)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models. Conley standard errors in parentheses, with spatial threshold of 16.26 km (average nearest-neighbor distance). Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$.

Table A12: **Supplementary Test of Hypothesis 2**. Conley standard errors.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-0.4 (0.1)**	-0.4 (0.1)**	-0.4 (0.1)**	-0.6 (0.3)*	-0.03 (0.1)	-0.1 (0.2)	-0.8 (0.2)**	-0.8 (0.4)*
Location FE	N=1227	N=1227	N=231	N=231	N=574	N=574	N=422	N=422
Country-Year FE	T=111	T=111	T=37	T=37	T=37	T=37	T=37	T=37
Sample size	45,395	45,395	8,545	8,545	21,237	21,237	15,613	15,613
R-squared	0.865	0.865	0.653	0.653	0.853	0.853	0.705	0.704

Dependent variable is **average number of employees per local firm (logged)**. Reported values are coefficient estimates from two-way fixed effects (FE) and difference-in-differences (DiD) models. Conley standard errors in parentheses, with spatial threshold of 16.26 km (average nearest-neighbor distance). Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$.

Table A13: **Supplementary Test of Hypothesis 3**. Conley standard errors.

	All		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD
Estimate	0.01 (0.005)*	0.01 (0.005)*	0.01 (0.003)*	0.01 (0.003)$'$	0.1 (0.01)**	0.1 (0.01)**
Location FE	N=996	N=996	N=572	N=574	N=422	N=422
Country-Year FE	T=28	T=31	T=16	T=16	T=15	T=15
Sample size	15,511	15,511	9,183	9,183	6,328	6,328
R-squared	0.196	0.198	0.265	0.265	0.083	0.083

Dependent variable is **local voter turnout (proportion of registered voters)**. Turnout data are not available for Estonia. Reported values are average marginal effect estimates $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family. Conley standard errors in parentheses, with spatial threshold of 16.26 km (average nearest-neighbor distance). Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

Table A14: **Supplementary Test of Hypothesis 4**. Conley standard errors.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	0.03 (0.02)	0.03 (0.02)$'$	0.1 (0.1)*	1.1 (4)	0.04 (0.02)*	0.04 (0.03)	0.03 (0.02)	0.04 (0.02)$'$
Location FE	N=1224	N=1224	N=228	N=228	N=574	N=574	N=422	N=422
Country-Year FE	T=45	T=45	T=14	T=14	T=16	T=16	T=15	T=15
Sample size	18,095	18,095	2,734	2,734	9,039	9,039	6,322	6,322
R-squared	0.567	0.567	0.56	0.56	0.542	0.542	0.591	0.591

Dependent variable is **pro-Russian party vote share (proportion of valid votes)**. Reported values are average marginal effect estimates $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family. Conley standard errors in parentheses, with spatial threshold of 16.26 km (average nearest-neighbor distance). Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

Table A15: **Supplementary Test of Hypothesis 5**. Conley standard errors.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
High impact	0.04 (0.02)*	0.04 (0.02)$'$	1.1 (0.1)**	1.1 (0.1)**	0.04 (0.02)*	0.05 (0.03)$'$	0.05 (0.03)$'$	0.05 (0.03)$'$
Low/Moderate	-0.002 (0.004)	0.01 (0.01)	-0.03 (0.01)**	1.1 (0.1)**	0.02 (0.1)	0.02 (0.1)	0.001 (0.004)	0.01 (0.01)
Location FE	N=1224	N=1224	N=228	N=228	N=574	N=574	N=422	N=422
Country-Year FE	T=45	T=45	T=14	T=14	T=16	T=16	T=15	T=15
Sample size	18,095	18,095	2,734	2,734	9,039	9,039	6,322	6,322
R-squared	0.567	0.567	0.56	0.56	0.542	0.542	0.591	0.591

Dependent variable is **pro-Russian party vote share (proportion of valid votes)**. Reported values are average marginal interaction effect estimates $\left(\text{High impact} = \frac{1}{NT}\sum_i \sum_t \hat{\beta}_1 \hat{p}_{it}(1-\hat{p}_{it})\right)$, $\left(\text{Low/Moderate impact} = \frac{1}{NT}\sum_i \sum_t (\hat{\beta}_1 + \hat{\beta}_2)\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family. Conley standard errors in parentheses, with spatial threshold of 16.26 km (average nearest-neighbor distance). Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

A5 Supplementary Analyses: Interpretation

The current section provides additional analyses into (1) whether the observed electoral shifts reflect genuine preference changes or changes in electorate composition, (2) heterogeneity by election type, (3) heterogeneity by ethnic composition, and (4) whether increases in pro-Russian support might reflect generic anti-incumbent punishment.

A5.1 Decomposing Compositional and Preference-Shift Effects

Let A_{it} denote the total anti-realignment (pro-Russian) vote count in community i at time t, $S_{it} = A_{it}/V_{it}$ denote the anti-realignment vote *share*, and N_{it} denote the number of eligible voters. The total anti-realignment vote count is:

$$A_{it} = S_{it} \cdot V_{it} = S_{it} \cdot \tau_{it} \cdot N_{it} \tag{43}$$

where $\tau_{it} = V_{it}/N_{it}$ is the turnout rate. Taking logs:

$$\log(A_{it}) = \log(S_{it}) + \log(\tau_{it}) + \log(N_{it}) \tag{44}$$

This identity decomposes log anti-realignment votes into three components: log vote share, log turnout rate, the log eligible electorate. A pure compositional effect (i.e., one operating entirely through changes in electorate size) would imply that base closures have no effect on $\log S_{it}$ or $\log \tau_{it}$, with $\log N_{it}$ alone transmitting the full effect of closures on $\log A_{it}$.

We operationalize this decomposition within the panel framework of Equation (1). Substituting $\log A_{it}$ as the dependent variable and progressively conditioning on $\log N_{it}$ (log eligible voters) yields the following sequence of estimating equations:

$$\log(A_{it}) = \beta_1 \text{Closures}_{it} + \alpha_i + \lambda_t \times \text{Country}_i + \epsilon_{it} \tag{45}$$

$$\log(A_{it}) = \beta_2 \text{Closures}_{it} + \gamma \log(N_{it}) + \alpha_i + \lambda_t \times \text{Country}_i + \epsilon_{it} \tag{46}$$

where $\hat{\beta}_1$ captures the total effect of base closures on log anti-realignment votes, combining all channels. $\hat{\beta}_2$ captures the direct effect net of changes in eligible voter composition. The share of the total effect attributable to the compositional channel is $(\hat{\beta}_1 - \hat{\beta}_2)/\hat{\beta}_1$.

Under the pure compositional null, $\beta_2 = 0$ and $\gamma = 1$: base closures affect anti-realignment votes only through the size of the eligible electorate, and anti-realignment votes scale proportionally with electorate size. We test this restriction formally using a Wald test of $H_0 : \gamma = 1$ in (46). We also estimate first-stage equations with $\log(N_{it})$ (eligible voters) and $\log(V_{it})$ (valid votes) as dependent variables to confirm that the treatment variable is predictive of both electorate size and participation:

$$\log(N_{it}) = \pi, \text{Closures}_{it} + \alpha_i + \lambda_t \times \text{Country}_i + \epsilon_{it} \tag{47}$$

Table A16 reports estimates from the four specifications. Column (1) reports the baseline total effect. Column (2) conditions on log eligible voters. Columns (3) and (4) report first-stage effects of closures on log eligible voters and log valid votes, respectively.

Table A16: **Decomposition of Compositional and Preference-Shift Effects**.

Outcome	(1) Total Effect $\log A_{i,t}$	(2) $+\log N_{i,t}$ $\log A_{i,t}$	(3) FS: Elig. Voters $\log N_{i,t}$	(4) FS: Valid Votes $\log V_{i,t}$
Treatment				
Closures$_{i,t}$	1.264**	0.585*	0.823*	0.839**
	(0.415)	(0.253)	(0.300)	(0.300)
Mediator				
$\log N_{i,t}$		0.819***		
		(0.072)		
Fixed effects				
Community	✓	✓	✓	✓
Country × Year	✓	✓	✓	✓
Election type	✓	✓	✓	✓
R^2	0.744	0.809	0.717	0.674
Observations	15,092	15,092	15,514	15,514

Notes: Standard errors (clustered by community and year) in parentheses.
$^{\cdot}p < 0.10$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$.

The baseline estimate indicates that each additional cumulative base closure is associated with a $(\exp(1.264) - 1) \approx 254$ percent increase in anti-realignment vote totals, a large effect consistent with the concentrated local economic impact of military withdrawal. The second column shows that conditioning on eligible voters reduces this coefficient by approximately 54 percent, from 1.264 to 0.585. The compositional channel thus accounts for roughly half the total electoral shift.

The first-stage estimates reveal a striking pattern: base closures modestly increase both log eligible voters (0.824, $p < 0.05$) and log valid votes (0.839, $p < 0.01$). Citizenship laws in

Estonia and Latvia denied automatic citizenship to Soviet-era settlers (i.e., disproportionately Russian speakers employed on or near military installations) so the population most economically exposed to closures could not vote. Their departure reduced total population without proportionally reducing the registered electorate. The compositional channel therefore operates through the shifting *relative* composition of a stable eligible electorate, not through population exodus or differential turnout.

The residual direct effect in Column (2) remains statistically significant, and we formally reject the pure compositional null ($\chi^2(1) = 31.3$, $p < 0.001$). Anti-realignment vote totals thus grow by more than electorate size alone predicts, consistent with genuine preference change or mobilization among enfranchised stayers. Conditioning on log valid votes instead of, or in addition to, log eligible voters yields virtually identical residual estimates: once we account for who is eligible, variation in who turns out adds little explanatory power. Roughly half the observed electoral shift reflects the changing composition of a partially insulated enfranchised electorate; the other half reflects genuine shifts in political behavior among those who stayed and could vote.

A5.2 Election Type Heterogeneity

Our theoretical framework predicts that base closures increase pro-Russian support through retrospective economic voting, but we did not specify whether these effects should differ between parliamentary and municipal elections. National parliamentary elections involve broader geopolitical stakes and national economic management, while municipal elections focus more directly on local service delivery and community-level governance. We estimated interaction models to test whether closure effects vary by election type.

Table A17 reports that base closures increased pro-Russian vote shares in both parliamentary and municipal elections, with somewhat stronger effects in municipal contests. In pooled analyses, parliamentary elections show 2 percentage point increases in pro-Russian vote share, while municipal elections exhibit 3-4 percentage point increases. This pattern holds across all three countries, although magnitudes vary: Estonia displays the largest effects in both election types (14 percentage points in parliamentary, 9-10 percentage points in municipal elections), Latvia shows 4-5 percentage point increases in both contexts, and Lithuania exhibits 2-3 percentage point increases.

The consistently positive effects across both election types suggest that economic disruptions from base closures activated voters across multiple political arenas. The somewhat larger municipal effects may reflect voters' perception that local governments bear more direct responsibility for economic conditions and base conversion outcomes, making municipal elections particularly salient venues for protest voting. Alternatively, municipal elections may attract more economically motivated voters while parliamentary contests engage citizens more focused on national geopolitical orientation.

Table A17: **Supplementary Analysis**. Do base closures have stronger political effects in national or local elections?

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Parliament	0.02 (0.01)	0.03 (0.01)**	0.2 (0.1)$'$	1.4 (0.02)**	0.04 (0.02)*	0.05 (0.02)*	0.02 (0.01)$'$	0.03 (0.01)**
Municipal	0.03 (0.01)**	0.03 (0.01)**	0.1 (0.1)$'$	0.9 (0.01)**	0.04 (0.01)**	0.04 (0.02)*	0.03 (0.01)*	0.04 (0.02)**
Location FE	N=1224	N=1224	N=228	N=228	N=574	N=574	N=422	N=422
Country-Year FE	T=45	T=45	T=14	T=14	T=16	T=16	T=15	T=15
Sample size	18,095	18,095	2,734	2,734	9,039	9,039	6,322	6,322
R-squared	0.567	0.567	0.56	0.56	0.542	0.542	0.591	0.591

Dependent variable is **pro-Russian party vote share (proportion of valid votes)**. Reported values are estimated average marginal effects of base closures on vote shares in parliamentary $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}_1 \hat{p}_{it}(1-\hat{p}_{it})\right)$ and municipal $\left(\frac{1}{NT}\sum_i \sum_t (\hat{\beta}_1 + \hat{\beta}_2)\hat{p}_{it}(1-\hat{p}_{it})\right)$ elections, with clustered robust standard errors in parentheses. We estimate the interaction effects via two-way FE and DiD models with GLM Binomial family links. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $'p < 0.1$.

A5.3 Ethnic Composition Heterogeneity

Our theoretical model predicts that pro-Russian voters face aligned geopolitical and economic motivations after base closures, while other voter types might need to balance competing considerations. This logic suggests that closure effects might be stronger in communities with larger ethnic Russian populations, where more voters may have geopolitical and economic reasons to support pro-Russian parties. We tested this prediction by estimating interaction models, comparing closure effects in communities with above-median versus below-median Russian ethnic shares, per the 1989 census.

The results in Table A18 provide mixed evidence for differential effects by ethnic composition. In pooled analyses across Estonia and Latvia (Lithuanian ethnicity data are unavailable), both high and low Russian-population communities experienced similar pro-Russian vote share increases, of approximately 20 percentage points (FE) or 5-10 percentage points (DiD). Country-specific results reveal more nuanced patterns. Estonia shows very large effects in both low-Russian (100-110 percentage point increases) and high-Russian communities (20-120 percentage point increases), although these large magnitudes may suggest model specification issues or small sample problems in some Estonian subgroups.

Latvia presents clearer evidence of ethnic heterogeneity. Communities with high Russian populations experienced statistically significant 10 percentage point increases in pro-

Russian vote share, while low-Russian communities showed near-zero, insignificant effects (1 percentage point). This pattern aligns with theoretical predictions that pro-Russian ethnic constituencies respond more strongly to base closures because they face aligned rather than competing geopolitical and economic pressures.

The divergent patterns between Estonia and Latvia may reflect differences in Russian population concentration, naturalization policies, and party system structures. Estonia's policy of extending municipal voting rights to non-citizens potentially mobilized Russian voters in both high and low Russian-share communities, while Latvia's more restrictive citizenship policies concentrated political participation among ethnically Russian citizens in specific localities. These institutional differences may amplify or dampen ethnic heterogeneity in electoral responses to economic shocks.

Table A18: **Supplementary Analysis**. Do base closures have stronger political effects in communities with higher shares of ethnic Russians?

	All		Estonia		Latvia	
Model	FE	DiD	FE	DiD	FE	DiD
Low Russian pop.	0.2 (0.03)**	0.1 (0.04)	1 (0.004)**	1.1 (0.005)**	0.01 (0.1)	0.01 (0.1)
High Russian pop.	0.2 (0.1)**	0.1 (0.01)**	0.2 (0.1)$'$	1.2 (0.02)**	0.1 (0.005)**	0.1 (0.01)**
Location FE	N=802	N=802	N=228	N=228	N=574	N=574
Country-Year FE	T=2	T=30	T=14	T=14	T=16	T=16
Sample size	11,773	11,773	2,734	2,734	9,039	9,039
R-squared	0.522	0.549	0.56	0.56	0.542	0.542

Dependent variable is **pro-Russian party vote share (proportion of valid votes)**. Reported values are estimated average marginal effects of base closures on vote shares in communities with below-median (low) $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}_1 \hat{p}_{it}(1-\hat{p}_{it})\right)$ and above-median (high) $\left(\frac{1}{NT}\sum_i \sum_t (\hat{\beta}_1+\hat{\beta}_2) \hat{p}_{it}(1-\hat{p}_{it})\right)$ shares of ethnic Russians (per 1989 census), with clustered robust standard errors in parentheses. Russian ethnicity data not available for Lithiania. We estimate the interaction effects via two-way FE and DiD models with GLM Binomial family links. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\prime}p < 0.1$.

A5.4 Anti-Incumbent Punishment versus Pro-Russian Gains

To distinguish between generic anti-incumbent punishment and political support for pro-Russian parties, we re-estimate our main specifications using incumbent party vote share as the dependent variable. We define incumbent parties as those belonging to the governing coalition at the national level at the time of each election, coding vote shares for these parties at the local level. Table A19 reports results from both two-way fixed effects and difference-in-differences specifications across all three countries.

Table A19: **Supplementary Test of Hypothesis 4**. Closures and incumbent support.

	All		Estonia		Latvia		Lithuania	
Model	FE	DiD	FE	DiD	FE	DiD	FE	DiD
Estimate	-0.04 (0.01)**	-0.02 (0.02)	-0.02 (0.02)	-0.1 (0.004)**	0.003 (0.005)	-0.04 (1)	-0.04 (0.01)**	-0.03 (0.01)*
Location FE	N=1224	N=1224	N=228	N=228	N=27	N=572	N=422	N=422
Country-Year FE	T=30	T=23	T=7	T=7	T=8	T=8	T=15	T=15
Sample size	12,068	12,068	1,153	1,153	4,592	4,592	6,323	6,323
R-squared	0.542	0.542	0.501	0.501	0.549	0.55	0.543	0.543

Dependent variable is **incumbent party vote share (proportion of valid votes)**. Reported values are average marginal effect estimates $\left(\frac{1}{NT}\sum_i \sum_t \hat{\beta}\hat{p}_{it}(1-\hat{p}_{it})\right)$ from two-way FE and DiD models estimated via GLM Binomial family, with clustered robust standard errors in parentheses. Significance levels (two-tailed): $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\prime}p < 0.1$.

The pooled estimates show small negative effects on incumbent vote share, with point estimates of -0.02 in the fixed effects specification and 0.03 in the difference-in-differences specification, neither achieving statistical significance. These weak aggregate effects mask substantial cross-national heterogeneity. Latvia exhibits essentially null effects across both specifications, with standard errors indicating precise estimation around zero. Lithuania shows the strongest anti-incumbent response, and Estonia falls between these extremes.

These patterns diverge markedly from our main results on pro-Russian vote shares, which show consistently positive and statistically significant effects across all three countries with substantially larger magnitudes. If base closures triggered pure "blind retrospection," where voters mechanically punish incumbents regardless of ideological considerations, we would expect symmetric patterns: substantial incumbent losses matched by gains distributed proportionally among all opposition parties. Instead, the data reveal that strong, consistent pro-Russian gains coexist with weak, inconsistent incumbent losses. This asymmetry suggests that base closures mobilized voters with specific affinities for the positions pro-Russian parties represented, combining redistributive economic appeals (from communist successor parties) and anti-establishment populist rhetoric (from right-coded Euroskeptic movements), rather than undifferentiated opposition to incumbents.