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What causes animosity between groups?

Evidence from Israeli settlements in the Palestinian territory

Massimiliano Calì and Sami H. Miaari

Abstract

Political and economic grievances are a key source of animosity between groups but little systematic evidence exists on the sources of such grievances. This paper provides direct evidence on the genesis of grievances between groups by examining whether the presence and growth of Israeli settlements in the Palestinian territories have had any influence on Palestinian attitudes towards the conflict and towards Israel. We find that both the presence and the expansion of formal Israeli settlements caused a significant radicalization of the Palestinian attitudes towards the conflict. This effect holds in different periods spanning over a decade and a half and is robust to the use of different estimation methods, identification strategies, dependent and control variables. The results indicate that an addition of one thousand settlers located within one kilometer from a Palestinian locality reduces the locality's support for more moderate factions by between 0.5 and 0.6 percentage points. We argue that this effect is key to explain the victory of the radical faction Hamas in the 2006 elections. At the district level the same change in settlers' population increases the probability of a Palestinian supporting violence against any Israeli target by 1.5 and against Israeli civilians (including also the settlers) by 4 percentage points. We provide suggestive evidence that it is mainly the increased competition for scarce natural resources, particularly land and water, that drives the radicalization effects of the settlements.

Authors

Keywords

1. Introduction

Political and economic grievances are a key source of animosity between groups. Bøås et al. (2010) find that injustice was perceived to be the primary driver of conflict in most countries and territories where the authors conducted representative surveys. The recent literature has documented the link between political and economic inequalities, especially across ethnic groups, and conflict both across and within countries (Buhaug et al., 2011; Cederman et al., 2011; Hidalgo et al., 2010; Gomes, 2011). While this link is empirically important, it does not provide direct evidence on what are actually the prime determinants of grievances across groups. For example inequalities are in themselves an outcome of specific policies and societal structures. In addition the focus on conflict of most of this literature restricts the analysis of animosity to its most extreme manifestation, while grievances are often expressed in other less violent ways.

In order to provide more direct evidence on the genesis of grievances between groups this paper focuses on the impact of a specific policy, which accentuates the inequality in access to resources across groups. It does so in the context of one of the longest standing conflicts in modern times, i.e. the Israeli-Palestinian conflict. We consider the impact of the Israeli settlement policy in the Palestinian territories on the political preferences and attitudes of the Palestinians towards the Israeli-Palestinian conflict. In this sense our analysis is most closely related to the few studies examining the impact of state policies on attitudes and voting behavior (Della Vigna et al., 2014 and Jaeger et al., 2012).

Since the Israeli occupation of the West Bank and the Gaza Strip in 1967, Israel has been setting up and expanding Jewish settlements in the Palestinian territories. While Israel evacuated all its settlements in Gaza in 2005, today around eight percent of the total Israeli population and ten percent of the Jewish Israeli population lives in settlements, the highest share in Israel's history. The Government of Israel (GoI) justifies the existence and expansion of these settlements on security and religious grounds. The main argument used by the GoI is that the settlements help to keep in check eventual attempts by the Palestinians or by their neighboring countries to conduct military attacks against Israel.

Notwithstanding the motivation behind the Israeli settlements, their presence and expansion can have a substantial impact on Palestinians' livelihoods and thus can affect their political attitudes towards Israel and the conflict.[1] Specifically the settlements can affect Palestinians through three possible channels. First, they increase the tensions over scarce natural resources (e.g., land and water), which need to accommodate the needs of the additional population in already densely inhabited areas.

Second, the settlements may lead to greater violence against Palestinian people and assets both directly (through settlers' attacks) and indirectly (through an enhanced presence of security forces and barriers in proximity to the settlements). Third, settlements can also provide an important source of employment for local Palestinians in an environment with few alternative employment opportunities.

We test for the impact of the presence and growth of settlements around Palestinian localities on the localities' attitudes towards Israel and the conflict. We do so by focusing on two distinct measures of such attitudes. The first is the pattern of voting in the elections for the Palestinian Legislative Council held in 1996 and 2006. The second is the attitudes towards Israel of the Palestinian residents of the nearby districts using several waves of Palestinian individual public opinion surveys between 1993 and 2007.

The main challenge with our assessment is to identify the causal effects of the settlements' presence on Palestinian attitudes as opposed to the simple statistical association. The settlements' population is not randomly distributed across the Palestinian territories as figure 1 on the settlements' built up areas in the West Bank shows. In fact the Israeli authorities have repeatedly claimed that the preoccupation about the possible violent actions of the Palestinian population is among the main drivers of the settlements' policy in the Palestinian territories. This reverse causality would invalidate the claim of causality of the settlements on Palestinian political attitudes. In addition the location (and expansion) of the settlements may be related to local-level unobserved factors, such as availability of water or fertility of the land, which could also affect Palestinian attitudes towards the conflict.

We address this concern in various ways and argue that our analysis is able to identify the causal effect of settlements' presence on the local Palestinian political preferences. First, we provide evidence that challenges the claim that Israel's settlement policy is driven by security concerns. Indeed, Israel started to develop settlements in the Palestinian territories months after it occupied them in 1967, thus well before any violence had erupted in the Palestinian territories. According to B'Tselem – The Israeli Information Center for Human Rights in the Occupied Territories (2010) - had the settlements been expanded in reaction to radical Palestinian political sentiments, the expansion process should have decreased and not increased during the period following the Oslo Accords in 1994. These started the peace process with the Palestinian Authority soon after Fatah, the main Palestinian political party, had just formally recognized for the first time Israel's right to exist. Second we control for a large array of local socio-demographic factors that may affect both settlements' location and Palestinian attitudes. Importantly

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1 The entire analysis is based only on settlements formally recognized by the Israeli government. That excludes all those unofficial outposts, which are considered illegal even by the Israeli authorities and for which we lack time-varying data. These unofficial settlements however constitute only a small percentage of the total settlements' population.

we also control for the level of violence at the local level, as measured by the locality-wise number of Palestinians killed by the Israeli army as well as the Israelis killed by Palestinians in the preceding years. To the extent that this measure is linked to the observable level of Palestinians' animosity towards Israel, its inclusion would relieve some of the concerns of endogeneity. Third, we use two instrumental variables to isolate the factors behind settlements' location, which we argue are only related to the present level of animosity of the Palestinians towards Israel via the presence of the settlements. To that end we employ two instruments: the location of the settlements in 1985, i.e. before the first major episode of civil unrest in the Palestinian territories (the first Intifada), and the distance of the locality to Israel (as measured by the distance to the 1949 armistice line). Finally we use panel data estimation exploiting only the growth rather than the levels in settlements' population on changes in Palestinian voting and attitudes. In this way we are able to control for all time invariant characteristics of the Palestinian localities and districts which may have driven both settlements' location and Palestinian animosity. To ensure that these changes in settlements are not endogenous to changes in attitudes we also instrument them using a shift-share type of instrument (Ottaviano and Peri, 2006), exploiting the initial composition of settlements' population along degree of religious observance.

Our results are consistent across datasets and indicate that the settlements' presence significantly radicalizes the attitudes of the Palestinian population towards the conflict. Larger settlements' population close to a given Palestinian locality causes a higher proportion of local Palestinians to vote for more radical political factions and to support more violent forms of struggle. We obtain similar results when using both the levels and the changes in settlement population, as well as in the number of settlements. These results are also robust to the inclusion of a wide range of socio-economic characteristics and to the use of different approaches to construct the settlement variable. Importantly, the results are very robust to the use of controls for local violence as well as to various instrumentation strategies, supporting the idea that the settlements' location and expansion have had a causal effect on Palestinian attitudes. We argue that the estimated effect of the settlements on Palestinian voting is important to explain the election success of the radical faction Hamas in the 2006 elections.

We also examine the importance of the three channels identified above through which the settlements' presence may affect Palestinians' animosity. Our results support the priors on the direction of the effect of each of the mechanisms. Competition for land, water and electricity appears to be the key driver behind the radicalization effect of the settlements on Palestinian voting. The impact is particularly large in Palestinian localities highly dependent on agriculture and with relatively good connection to

public water. This resource competition channel explains virtually all of the radicalization impact of the settlements on Palestinian voting. The other channels contribute relatively little to explain the settlements' impact, although they are both detected in the data with the expected sign but with small magnitudes: more employment opportunities in the settlements are associated with a slight increase in Palestinian votes for moderate parties; more settlers' attacks on Palestinians are associated with a reduction in moderate votes. In addition typically more belligerent religious settlements exerted a larger negative impact on Palestinian moderate voting than the other settlements, but only in 1996.

The paper is organized as follows: Section 2 places the study in the context of the literature; Section 3 describes the history of Israeli settlement enterprise; Sections 4 and 5 detail the data and the methodology; Section 6 presents the results; and Section 7 concludes.

2. Related Literature

The paper is linked to the literature on the impact of state policies on the behaviors of targeted population. Overall, the research on this topic is sparse and has yielded mixed results, mainly focusing on the effects of state policy on violence of the aggrieved constituency rather than on the constituency's positions and attitudes. Some believe that populations targeted by state sanctions or violence tend to radicalize (e.g., Kydd and Walter, 2006; Rubinstein, 2002; Rosendorff & Sandler, 2004; Kaplan et al., 2005; Siqueira & Sandler, 2006). This radicalization occurs because individuals seek protection or access to public goods (Kalyvas, 2006; Berman & Laitin, 2008). Bueno de Mesquita and Dickson (2007) claim that radicalization is the likely outcome of indiscriminate policy that causes significant suffering and economic damage to the entire civilian population. Others contend that negative sanctions lead to moderation (e.g., Brophy-Baerman & Conybeare, 1994; Ganor, 2005). On a more positive agenda, Berman et al. (2011) found that funding of small-scale public projects was effective in decreasing attacks against allied forces in Afghanistan, Iyengar et al. (2011) found that the same funding had decreased insurgent attacks against civilians but increased attacks against military targets.

Most of this literature has focused on the impact on conflict while only a few studies examine the impact on political preferences and attitudes, which is closer to the approach in this paper. Della Vigna et al. (2014) show that exposure to nationalistic Serbian radio increases hatred among Croatians towards Serbians, as measured by voting for extreme nationalist parties and the presence of ethnically offensive graffiti. Jaeger et al. (2012) found that although local Israeli violence discourages Palestinians from supporting moderate political attitudes, this "radicalization" is fleeting and vanishes completely within 90 days. The authors also found that major political events

in the Palestinian-Israeli conflict have had a longer-term impact on political preferences. Individuals who were teenagers during the period of the Oslo negotiations tend to have relatively moderate preferences, while those who were teenagers during the First Intifada tend to be relatively radical.

Focusing on voting and attitudes rather than violence enables the examination of policies' influence on wider segments of the population, including those who cannot or do not want to participate in violence. In addition, political attitudes and preferences are critical not only insofar as they influence the motivation to participate in violence, but also to the extent that they affect negotiations regarding termination of violent confrontations (Jaeger et al., 2012). Third, political attitudes may also be indicative of changes in the number of those who will eventually participate in the violence.

Finally the paper is related to the specific literature on the Israeli-Palestinian conflict. Benmelech et al. (2010) found that another form of Israeli policy – punitive house demolitions – caused an immediate, significant decrease in the number of suicide attacks. In conjunction, curfews and house demolitions that the Israeli government justified by the location of the house but unrelated to the identity of the house's owner, caused a significant increase in the number of suicide attacks. On the basis of these findings, Benmelech et al. (2010) argue that while selective state violence is effective in decreasing attacks, indiscriminate state violence creates a boomerang effect, increases support for extremists and aggravates conflicts. Similarly, Miaari et al. (2012) show that localities that suffered from a sharper drop in employment from Israel's restriction at the beginning of the second Intifada were more heavily involved in the conflict.

Political violence has been found to affect Israeli political attitudes as well. Through examination of violent attacks in Israel from 1988 to 2006, Gould and Klor (2010) found that local Palestinian attacks against Israelis induced the Israeli public more willing to make concession in the short run. However in the longer run it increased the votes for right-wing parties, as these parties move to the left in response to the violence[2].

3. The Israeli Settlements and the Palestinians

The first settlements' construction was initiated in 1967 by a Labor-led government, three months after Israel occupied the West Bank and Gaza. Following the Allon Plan, the Labor Party's policy at the time promoted the annexation to Israel of areas in the West Bank and established 30 settlements around Jerusalem, Gush Etzion, most of the Judean Desert, and a strip of land in the southern Hebron hills. The Allon Plan and the related annexation plan was

also the source of inspiration of the settlement policy of the following Labor government, led by Yitzhak Rabin.

The settlements' expansion appears to have been remarkably stable across changes in governments. Between 1977 and 1992, the Likud government established dozens of additional settlements in areas densely populated by Palestinians. Much of the motivation behind this expansion of the settlements was related to the view that "the entire historic Land of Israel is the inalienable heritage of the Jewish people, and that no part of the West Bank should be handed over to foreign rule" (Government of Israel, 1977).

This ongoing expansion continued over the years, despite some of Israel's latter governments' promises to freeze the settlements enterprise. The Labor-led Rabin government, voted into office 1992 with a non belligerent platform, continued to build new settlements in the West Bank. And the expansion continued even during the peace negotiation under the aegis of the Oslo process (figure 2). The Likud governments that followed continued the Israeli policy of expanding the settlement enterprise.

In a marked departure from this course, in 2005 the Sharon government evacuated all the Jewish settlements in the Gaza strip and four relatively isolated settlements in the northern West Bank. However the population in these settlements was very small, thus the overall settlements' population was little affected (figure 3).

The settlement population (excluding that of east Jerusalem) has almost tripled since 1993 and it continued to grow sharply even during the period during which Israel was supposed to implement the freeze of the settlements' expansion following international pressure. During that time in 2008, the annual growth of the settler population was three times greater than that of the population inside Israel and in the large ultra-Orthodox settlements of Betar Illit and Modi'in Illit, the figures for 2009 were even higher (B'tselem, 2010).

Importantly for our purposes the establishment of the settlements predated any form of Palestinian violence or uprising In fact, the majority of settlements in both West Bank and Gaza were established before 1987, the time of the first Palestinian uprising - 'first Intifada' – (figure 2). In addition the unilateral withdrawal of settlements out of Gaza in 2005 would be difficult to explain in terms of security concerns as it came at the end of the 'second Intifada' when both West Bank and Gaza had experienced protracted periods of violence. Also, the increase in settlements' population has been remarkably stable since the mid-1980s with little relation with the variation in the conflict intensity (figure 3).

These stylized facts resonate with the non-security motives driving the government's support for the settlements enterprise highlighted above. They are also

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2 Ben Bassat et al. (2012) examined how Palestinian violence influences political attitudes of the Jewish population. They found that whereas fatalities from the conflict make Israelis more willing to grant territorial concessions to the Palestinians, the associated economic costs of conflict do not have a consistent significant effect on individuals' political attitudes.

consistent with the assessment of various Israeli authors who do not identify security concerns as the main reason behind the settlements' expansion (e.g. Goldstein 2006; Gorenberg 2006; Naor (2001); Zertal & Eldar, 2009).

Between 1967 and 2010, Israel built over 125 Jewish settlements (recognized by the Interior Ministry), 100 outposts (not officially approved by the Israeli government), as well as several Jewish settlements within Hebron. Israel has built twelve neighborhoods in the West Bank, which were annexed and made part of Jerusalem. Overall, today, around 600,000 Israelis live in the settlements throughout the West Bank.

This population is distributed across different types of settlements, which have had different growth rate (figure 4). Over 60% of the settlers resides in mixed settlements (i.e. religious and secular); one fourth reside in religious settlements; the rest are essentially in secular settlements, with very little population in other settlements, which comprise settlements' industrial zones. The first two categories have also experienced the highest growth in population since the 1980s.

According to Collier and Hoeffler (2004), historical and political grievance is a major element in civil and ethnic conflict. In this regard, the settlements comprise a major element in Palestinian grievance for at least three reasons. First, they control scarce natural resources thus reducing the access to and the availability of such resources for the Palestinians. Most of the settlements are built on Palestinian land expropriated by the GoI, which seized more than 90,000 hectares of land (16% of the West Bank), mostly between 1979 and 1992. B'tselem (2010) estimates that the settlements' built-up areas occupied only 1% of the West Bank in 2010. However according to B'tselem (2010) their control over the land is much larger: the settlements' municipal areas occupy 9.3% of the West Bank. Adding the areas managed by the settlers-controlled regional councils brings the total land controlled by the settlers to a full 42% of the West Bank (B'tselem, 2010). This control can also hinder the development of Palestinian infrastructure for public service delivery, such as water and electricity distribution networks, when such infrastructures have to cross settlements controlled areas to reach Palestinian communities (Niksic et al., 2014). In addition, approximately 21% of the settlements are constructed over private land owned by Palestinians (Be'tselem, 2010)[3]. The control over local water resources is similarly complex with Israeli settlers consuming on average about six times as much water as the Palestinians in the West Bank (UN OCHA, 2012). Niksic et al. (2014) is the latest of the reports that highlight the substantial adverse impact of such access restrictions for the Palestinian livelihoods.

Second, settlements have represented a continuous source of violence for many Palestinian localities. Violence usually takes the form of attacks on people (such as stone throwing, shooting and physical attacks), destruction of Palestinian property and vehicular attacks. Such violence varies greatly across settlements and thus across Palestinian localities as well as over time. Violent attacks by settlers on Palestinians increased between 2007 and 2011 by 315 percent with a total of 1000 episodes in 2011 (Munayyer, 2012). This violence is likely to increase grievances among local Palestinians and possibly their attitude towards Israel and the conflict.

In addition, since the beginning of the second Intifada in 2000 proximity to the settlements was also associated with a higher Israeli security presence and incidence of mobility restrictions in the form of check-points, earth mounds, road blocks and other barriers. These barriers were officially aimed to providing protection to the Israeli settlements as well as to Israeli population from possible Palestinian violence but were also highly disruptive for the local Palestinian population (Calì and Miaari, 2013).

On the other hand, the settlements also provide precious employment opportunities for local Palestinian communities. That is all the more important for those communities located in areas with high settlements' density as restrictions on access to resources and on mobility are usually higher for Palestinians in such areas due to the settlements' presence. These employment opportunities are almost invariably in manual labor inside the settlements or in the settlements' agricultural fields and provide an important source of livelihood for a number of Palestinian communities. Approximately 2% of total West Bank labor force has been employed in Israeli settlements over the past ten years. We expect the effect of such employment channel to alleviate the grievances of the local Palestinian population.

4. Data

The data in this study are taken from various Palestinian and Israeli sources that include information on voting patterns in the Palestinian Legislative Council elections held in 1996 and 2006, Israeli settlements' populations and locations, economic and socio-demographic characteristics of Palestinian localities, Palestinians legally employed in Israel, the Palestinian labor market, and Paestinian fatalities from the conflict with Israel since 1987. All this information was aggregated, when necessary, to the level of the locality, which serves as the unit of analysis.

The Palestinian Central Elections Committee provided data on the results of the elections for the Palestinian Legislative Council held in 1996 and 2006. That includes data on turnout and votes by parties and candidates by locality. We transcribed the data from paper into electronic format.

The Applied Research Institute – Jerusalem (ARIJ) supplied the data on the population of the Israeli

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3   To date, Israel has seized more than 150,000 hectares of land (26.7 % of the West Bank).

settlements, location, and the settlements' road distance from various Palestinian localities, as well as data on the distance of the Palestinian localities from the green line. Since the population data were missing for some years, we complement these statistics with data from Peace Now, B'Tselem, and the Foundation for Middle East Peace (FMEP)[4]. Figure 1 shows a map of the settlements' location in the West Bank. As the Figure demonstrates, substantial variation exists in the geographical distribution of the settlements across Palestinian localities. The evolution in the number of settlements and settlers, depicted in Figures 2 and 3, shows that the numbers of settlements and their population substantially expand and grow over the years (Figures 2 and 3).

Data on social, demographic and economic variables on Palestinian localities are taken from administrative data collected in the 1997 and 2007 Palestinian census by the Palestinian Central Bureau of Statistics (PCBS). The Palestinian census data includes information about various localities' characteristics, such as total population, gender, age, education, refugee status, number of household's members, civil status, and availability of public utilities. In addition we use the 1997 establishment Census to compute the localities' employment in the Palestinian agricultural sector[5].

The Israeli Ministry of Industry, Trade and Labor, which is in charge of issuing work permits, provided the data on the number of Palestinians legally employed in Israel including their locality of residence. For each Palestinian locality, we have information on share of employment by permit. Data on the share of employment within Israeli settlements for each Palestinian locality was obtained from the Palestinian Labor Force Survey (PLFS), collected by the PCBS[6]. This survey covers only a sample of the universe of localities thus the inclusion of variables from this source restricts the sample over which the analysis is conducted.

Data on the number of Palestinian fatalities from politically-motivated violence (Palestinians killed by Israelis) since the outbreak of the first Intifada in 1987 in each locality are taken from B'Tselem - the Israeli Information Center for Human Rights in the Occupied Territories. Widely considered accurate and reliable, the reports published by B'Tselem record in detail every Israeli and Palestinian fatality on both sides during the First and Second Intifada[7]. In addition data on the attacks of settlers against Palestinians and their property come from the UN Office for the Coordination of Humanitarian Affairs (OCHA). They are available only since 2006.

Finally, longitudinal public opinion poll micro data of the Palestinian population since 1993 comes from the Palestinian Center for Policy and Survey Research (PSR). Every poll has almost 1,200 observations, with approximately 65% of them from the West Bank and Jerusalem and the rest from the Gaza Strip. General information on these polls, including methodology, the wording of the questions, and summary results are available from the PSR web site (http://www.pcpsr.org/). The PSR has conducted regular public opinion polls on all aspects of Palestinian life since the year 1993. The polls include information about respondents' demographic characteristics, location, and attitudes towards various aspects of the Israeli-Palestinian conflict.

5. Empirical strategy

Our identification strategy hinges on the variation of settlements' population and number across the Palestinian territories as well as over time. The assumption is that the effect of the settlements decays across space and eventually becomes negligible after a certain threshold of distance to the locality/district. We check the robustness of the results to the use of different thresholds.

This assumption is justified by the fact that each of the three channels through which we argue the settlements' presence affects Palestinian attitudes operate at the very local level. First, the settlements nearby each Palestinian locality/district will be the ones affecting the locality/district's access to their local natural resources. For example the land over which the settlements are built would generally have been used and/or owned by local Palestinians' communities before the settlements' construction (Sasson, 2005). Similarly, the violence perpetrated by the settlers is typically exercised over surrounding Palestinian population and properties (Munayyer, 2012). Finally, only nearby settlements generally represent an employment opportunities for the Palestinian population as only a small percentage of Palestinians commute to work beyond outside of their district of residence[8].

We use two distinct sets of dependent variables to identify the settlements' effects on Palestinian attitudes. The first focuses on the results of the only two Palestinian Legislative Council elections held so far, i.e. in 1996 and 2006. These elections had a large turnout (76 percent in 1996 and 77 percent in 2006) and thus provide a high representativeness of Palestinian political views. Another advantage is that election results largely avoid the problems typical of subjective survey data (Bertrand and Mullainathan, 2001),

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4   For data that is unavailable from all sources, we applied a non-linear interpolation technique to impute these observations.

5   We could not secure the access to the 2007 establishment census data.

6   Detailed information on the labor force surveys and the population census can be found in the website of the PCBS at http://www.pcbs.gov.ps.

7   Available at: http://www.btselem.org.

8   That is based on Palestinian Labor Force Survey data.

as they are based on actual behavior (i.e. voting) rather than on preferences elicited through interviews.

One limitation with the electoral data for our purposes is that a variety of issues may guide individual votes. As we are interested in using these data to capture the attitudes on a specific issue (i.e. the Israeli-Palestinian conflict), this implies that electoral results incorporate more statistical noise than ideal. However this may not be as large of a problem as it may appear. In fact the conflict and the relation with Israel is arguably one of the most salient issues in Palestinian politics and society. That was especially the case in those two elections, which came on the heels of key conflict-related events, i.e. the Oslo Accords of 1994 between Israel and the Palestinian Authority, and the second Intifada (2000-2005). Importantly for our analysis, the Palestinian political factions held (and still do) very different views regarding the strategy vis-à-vis Israel. In particular, the oldest Palestinian faction Fatah has been adamant in both elections about its objective to come to a peaceful agreement with Israel. Other factions, such as the Islamic Jihad in 1996 and Hamas in 2006, held more radical views vis-à-vis the conflict, with frequent calls of armed struggle against Israel. On the basis of these views we classify the various parties as moderate or radical vis-à-vis the conflict in each election. The complete list is presented in the Appendix.

In addition, we complement this analysis with a second set of dependent variables based on explicit attitudes towards Israel elicited through repeated rounds of individual surveys. We take advantage of the repetition of some of the questions to measure the evolving attitudes of Palestinians towards the Israeli-Palestinian conflict. We focus in particular on the responses to two questions: whether the individual "support or oppose armed attacks against Israeli targets" and whether he/she supports "armed attacks against Israeli civilians"[9]. In the latter question, "Israeli civilians" include also the Israeli settlers themselves. The combination of these two sources provides a robust way to assess the attitudes of the Palestinians towards the conflict.

5.1. Cross-section analysis
We begin by exploiting the cross-sectional variation in settlements and political behavior through the following regression: (1)

$$Mod_l = \alpha + \beta_1 (lag) SetPop_l^{20km} + \mathrm{B}X_l + \varepsilon_l$$

where *moderate* is the share of votes, out of eligible individuals, for more moderate factions in the 1996 (or 2006) Palestinian Legislative Council election in each locality l, *SetPop* is the settlement variable of interest, X is a vector of various locality-level controls and is the error

term. Standard errors are robust using the White correction. We also use percentage support for Fatah in the 1996 (or 2006) election as an alternative measure of Palestinian political preferences for moderation towards the conflict. The main settlement variable, *SetPop*, is constructed as the total population of the Israeli settlements within a 20-kilometer road distance from the locality's centroid in 1995 (or 2005), weighted by the inverse of their distance[10]. More formally: (2)

d_{bl}^{road} where is the linear distance in meters of settlement b from locality l, N is the location-specific number of settlements that satisfies the road distance limit of 20 kilometers in year t, and pop_{blt} is the total population of settlement b at time t (in 1000s). The linear distance weight ensures that settlements further away would have a limited effect on the index.

As this variable is key to identifying the effects, we also implement different approaches to construct *Sett* to minimize the concern that the results may be driven by a specific way to compute the measure. The first variant of the index uses 10 or 30 kilometers as the road distance threshold beyond which the settlements exert no effect on the locality. As further variants, we also compute an index as in (1) but without the distance weights, thus relaxing the assumption of variation in the settlements' effects within 20 kilometers. Finally, we also compute an index as in (1) but without population weights.

The key challenge in the identification of causal effects in equation (1) is the non-random allocation of Israeli settlements across Palestinian localities. If the location of settlements were partly determined by the desire of Israeli authorities to control the possible rebellion of the Palestinian population, that would undermine the consistency of the β_1 coefficient as $E[SetPop_l \, \varepsilon_l] \neq 0$ in (1).

First we control for the available observable measures of the animosity of local Palestinian population towards Israel. In particular we include in vector X the cumulative number of Palestinians killed by Israelis in each locality during the previous round of violence (i.e. 1987-1995 or 2000-2005) as well as cumulative number of Israelis killed by Palestinians in each locality during the same periods. As an alternative measure of violence we also use the cumulative number of Palestinians killed by Israeli forces during demonstrations, which is a closer proxy of Palestinian political activism than the total number of Palestinian fatalities. This variable is only available since

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9   See Table A3 in the Appendix for the precise language of the questions.

10   his weight captures the idea that the more distant a settlement is from a particular Palestinian locality, the less it will affect the given locality.

2000 so we use it only for robustness purposes. In addition to addressing the endogeneity concerns, these variables also control for the possible influence of past violence and conflict on Palestinian attitudes.

Even if settlements' placement were not driven by the local Palestinian attitudes towards Israel, it could still be related to local conditions that may also influence Palestinian political preferences. For example, the settlements could be located in areas that enjoyed higher land productivity or more availability of natural resources. These characteristics may also affect the affluence and/or the employment structure of local communities, which in turn may influence political preferences (either directly or indirectly via their impact on other variables, such as education). To address this concern we include in equation (1) also controls for a wide array of demographic and socioeconomic variables at the locality level which may have an independent effect on attitudes. These variables, taken from the 1997 (or 2007) Palestinian population Census, include the population, the population density, the share of males in the population, the share of married individuals, the share population aged 15-40, the share of population with elementary education or below, the share of refugees in the population, the share of households with over eight members (a close correlate to poverty in the Palestinian territories), the share of population employed in Palestinian agriculture, the unemployment rate, and the access to public utilities, including water, electricity, sewage, and landline telephone. We also include a dummy variable for the localities in the Gaza Strip.

In addition we further address the possible remaining endogeneity of *SetPop* by employing an instrumental variable (IV) estimation of equation (1). To that end we use two instruments that we argue are related to Palestinian voting behavior only through the presence of settlements in 1995 (or 2006). The first is the settlement index computed as in (2) but on the basis of the year 1985. This variable is highly correlated to the index in subsequent years due to the persistence in settlements' location over time. Importantly it is also likely to be exogenous to Palestinian political votes in 1996 or 2006. Indeed in 1985 Israeli authorities could hardly know the political preferences of Palestinians to which linking the establishment and development of settlements. Two factors contribute to substantiate this claim. First, the Palestinian Authority had not yet been established at that time, and political elections in the Palestinian territories were not on the agenda. Second, the Israelis could not infer Palestinian attitudes towards Israel from the level of violence either, as no surge in violence in the Palestinian territories had been recorded yet. The first Palestinian uprising dates back to 1987. Indeed, Israeli authorities at that time allowed a virtually unhindered flow of people and vehicles in and out the Palestinian territories at that time. That would not have been the case, had the authorities had security concerns about specific portions of the Palestinian territories.

The second instrument is the locality's distance to the Green line. This variable should capture the component of settlements' presence driven only by the proximity to Israel. This proximity is very important for a large number of settlers who commute to Israel for a variety of chores, including work, shopping, education, entertainment. Therefore we would expect this distance to be inversely related to settlements' population. At the same time, the validity of the instrument hinges on the assumption that a locality's distance to the Green Line does not influence its residents' attitudes towards the conflict other than through being exposed to the settlements. The major concern to the instrument's validity is that localities closer to the Green Line may have a larger share of employment in Israel, which in turn may affect their attitudes towards the conflict and Israel. To ensure the validity of the instrument, we also control for this employment share in the second stage[11].

5.2. Time varying analyses

We also complement the cross-sectional analysis with one exploiting the panel aspect of the two elections in 1996 and 2006. The latter allows us to estimate the effect of settlements' expansion over time on changes in Palestinian voting behaviour controlling for time invariant heterogeneity across localities. Therefore this analysis allows to control for any time invariant characteristics of the Palestinian localities and districts which may have driven both settlements' location and Palestinian political preferences. We pool the variables over the two periods and estimate a fixed effect regression of the type: (3)

$$Mod_{lt} = \alpha_l + SetPop_{lt-1}^{20km} + KZ_{lt} + \gamma_t + Gaza \times$$

where α is locality fixed effect, γ is time dummy and Z is the vector of time varying socio-demographic controls analogous to those in (1). As the estimation is performed over two years (1996 and 2006), this is equivalent to a first difference estimation of changes in the electoral results over changes in the settlement variable. Two factors drive the changes in *SetPop* here: the change in population of the existing settlements (the intensive margin) and the change in the number of settlements as some settlements are evacuated and new ones are created (the extensive margin). As explained below, we also check the robustness of the results to addressing the endogeneity concerns in this set-up as well, as they may be different to the concerns of the cross-sectional analysis.

Finally, we test for the effects of the settlements on the Palestinian specific attitudes towards Israel. In particular

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11 In the 2006 period, distance to the Green Line is also related to the construction of the West Bank Wall which Israel started to build in 2002 at the height of the second Intifada to restrict Palestinian access to Israel. The Wall disrupted the economic and social life of Palestinian communities living along its path, as it was almost entirely built inside the West Bank territory. Thus we also control for that in the 2006 analysis.

we use measures of Palestinian support for violence against Israeli targets both in general as well as civilian targets by using a dependent variable taking the value of 1 if the individual supports violence and zero otherwise. The identification is obtained through the variation at the district-quarter level as we have information only on the individual's district of residence (and individuals are not followed over time). The specification is estimated as a linear probability model and reads as follows: (4)

$$Sup_{idqt} = \alpha_d + SetPop_{dt-1}^{20km} + BX_{iqt} + \Lambda Y_{dqt} + \beta G_{dq-1t} + \gamma_{qt} + \varepsilon_{iqt}$$

for individual i in district d in quarter q in year t; where $SetPop$ is computed as in (2) using distance to the district's capital; α are district fixed effects, X is a vector of individual characteristics, including gender, age, marital status, education level, refugee status, type of residence (city, village or refugee camp), and unemployed. Y is a vector of district-level time varying economic conditions, including the unemployment rate and the percentage of district's employment in Israel, and G is a vector of district-level time-varying factors likely to affect Palestinian grievances, i.e. the number of Palestinian fatalities caused by Israel and number of Israeli fatalities cause by Palestinians. Finally, γ are quarter-time effects and is the error term. Such a rich set of controls should allow us to neatly isolate the effects of settlements' expansion on Palestinian attitudes.

Importantly, we cluster the standard errors in (4) at the district-year level to reflect the variation in the individuals' exposure to settlements. Again, in the analysis below we also check the robustness of the results from implementing regression (4) to the endogeneity concerns.

6. Results

The summary statistics for the key variables for running regressions (1) and (4) are provided in Tables 1A and 1B. The statistics for the main dependent variables show that support for moderate parties remained quite stable over time (although support did increase for Fatah) while the $SetPop^{20km}$ increased. At the same time the average number of settlements within 20km was roughly unchanged, which is the result of the reduction in the number of settlements in Gaza and the increase in the West Bank.

6.1. Electoral results
Table 2 presents the results of the cross sectional analysis of equation (1). We first include only the basic specification without controls (except the Gaza dummy). The $SetPop^{20km}$ has a negative and significant association with the share of moderate votes in 1996 in total eligible population (column 1). The more settlers live close to a locality, the more radical the voting pattern of the locality. The settlement coefficient becomes larger and remains highly significant when controlling for a large set of socio-demographic characteristics included in the vector X in equation (1) (column 2). This effect suggests that adding a thousand settlers one kilometer from the locality decreases the support for more moderate factions by 0.3 percentage points of the eligible electorate, or 0.4 percentage of the actual voters. The settlement coefficient is also unchanged when adding the locality-wise cumulative number of Palestinian fatalities caused by Israel as well as that of Israeli fatalities caused by Palestinians in the first Intifada prior to the elections (column 3). The fact that the settlement coefficient is unaffected when adding these proxies for Palestinian animosity towards Israel lends support to the hypothesis that settlement placement is not driven by Palestinian political preferences.

We also test the robustness of the result to the use of different methods for computing the settlement index. In column 4 we show that the coefficient is unaffected when using the 30 instead of the 20 Km threshold[12]. The settlement coefficient remains negative and significant even when the settlements' population is not weighted by the inverse of the distance to the locality (column 5). On the other hand the coefficient becomes not significant although it remains negative when using the number (rather than the population) of settlements within 20 Km from the locality as the main regressor (column 6). This confirms that the size of the settlements as measured by their population needs to be accounted for in order to capture fully their impact on Palestinian preferences across localities. In column (7) we show that the negative coefficient is also robust also when considering only the West Bank, which has been historically the main basis of the settlements' enterprise[13].

The settlement variable has a negative effect on moderate voting also for the 2006 elections and the size of the coefficient is 40 percent larger in absolute terms than in 1996 (column 8). Although we do not show it here to save space, this effect is also robust to computing different variants of the settlement index. It also applies when considering only the West Bank thus discounting the possible confounding impact of the Gaza settlements' withdrawal (column 9). The coefficient is also unchanged when using the cumulative number of Palestinians killed by Israeli forces during protests, a closer proxy for Palestinian political activism than the total number of Palestinian fatalities used so far (column 10).

In Table 3 we run a series of further robustness tests. In columns (1) and (2) we show that the result is robust to

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12 The coefficient drops slightly in absolute magnitude (but not relatively to the variable's mean) but remains negative and highly significant when using the 10Km threshold instead (not shown here but available from the authors upon request).

13 We do not test for the effects in Gaza alone as the number of localities is small (37), which reduces our ability to include the relevant controls while maintaining sufficient degrees of freedom.

using the share of votes for Fatah (in total eligible votes) as the dependent variable in both 1996 and 2006 respectively. Fatah was the main party in 1996 and through the leadership of Yasser Arafat it dominated the Palestinian Liberation Organization (PLO), which in those years was negotiating the peace process with Israel. This pro-negotiation stance was in stark contrast with other more radical factions, which opposed the negotiating process (at least under the conditions in which it took place). In 2006 Fatah – led by Mahmoud Abbas - was again the more moderate party when it came to the relation with Israel, challenged by more radical factions, chiefly Hamas, which in the elections campaign opposed negotiations with Israel. The magnitude of the settlements' effect on Fatah voting is now similar across elections. However the elasticity of pro-Fatah voting with respect to settlements is again larger in 2006 as the mean of *SetPop* is larger in 2006 than in 1996.

Next, we further address the concerns about the endogeneity of the settlement variable by running a series of IV estimations for each year. In column (3) *SetPop* in 1996 is instrumented by the same variable computed in 1985. As shown by the first stage statistics the instrument's power is very high and the settlement coefficient remains negative and significant becoming slightly larger in absolute term than in the OLS estimation (-3.4 vs. -2.7). That is the case also when using votes for Fatah as the dependent variable, whose coefficient is again larger in absolute terms than that of votes for moderate parties (column 4). The *SetPop* coefficient becomes larger in absolute size also when using distance to the Green Line as the instrument, which has the expected negative effect on the settlement variable, while controlling for the share of locality's residents employed in Israel (column 5)[14]. Interestingly this control is positively associated with more moderate voting behaviour, perhaps suggesting that closer interaction with the Israeli civilian population increases the moderation of the Palestinians towards the conflict[15]. The negative and significant coefficient of the settlement index is also robust when using both instruments at the same time in the first stage (column 6).

We replicate the same IV estimations for 2006 as well obtaining similar results with the settlement coefficient being negative, significant and larger in absolute magnitude than the OLS one (columns 7-10). In this case, we also control for the length of the West Bank Wall constructed by 2005 in the locality. As argued above this control strengthens the case for the validity of this instrument in 2006. The share of the labour force employed in Israel ceases to be a significant determinant of the support for the moderate parties, perhaps due to the effects of the

employment restrictions into Israel imposed few years before the elections at the beginning of the second Intifada. The coefficients from the IV estimation (columns 6 and 10) suggest that an increase in Israeli settlers by 1,000 reduces the share of votes for moderate factions by between 0.55 and 0.58 percentage points (of the actual voters) in 1996 and 2006 respectively.

In table 4 we present the results of the estimation (3) pooling the two election years together and controlling for all locality-level time invariant characteristics. The identification comes from the impact of the changes in *SetPop* on the changes in the share of moderate votes. The settlement coefficient is still negative and slightly smaller in absolute terms than the one for 1996, but it is not significant at standard levels (column 1). This non-significant negative effect is confirmed also when adding the locality's number of Palestinian and Israeli fatalities in the previous round of violence as further controls to capture the fact that localities' political attitudes may be related to observable conflict intensity (column 2).

On the other hand the settlement variable becomes significant when computed over the number of settlements within 20 Km from the locality weighting it only by the inverse of the distance but not by the population (column 3). The changes in this variable are driven only by the establishment of new settlements and/or the withdrawal of existing ones. The negative and significant effect of the settlement variable on moderate voting is robust also to not weighing each settlement by the inverse of its distance to the locality (column 4). The strong negative effects of these variables on moderate voting provide indirect evidence that the land channel is a fundamental driver of the settlements' effects on Palestinian attitudes. Indeed the changes in these variables are driven by new settlements, which get new land allocated almost inevitably at the expense of pre-existing Palestinian communities, or for the removal of existing settlements, which similarly release land for the use of Palestinian communities.

The fixed effect estimation ensures the exogeneity of the settlements' growth and placement to time invariant localities' characteristics. However the changes in settlements' placement may be related to the underlying changes in localities' political attitudes. In particular, there may be local shocks (such as productivity or weather shocks) that may affect the local living conditions of both Palestinian communities and Israeli settlements. Omitting to control for such shocks would generate a bias in the settlement coefficient as the shocks may drive both the incentives for Israelis to settle and the voting behaviour of the Palestinians. A plausible hypothesis is that the

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14 The latter control reduces the number of observations but the increase in the settlement coefficient's magnitude is not driven by the smaller sample. We check that this is the case by running the OLS regression with the same control and sample as in column (6) – results not shown here but available upon request.

15 While this coefficient is consistently significant, we do not include it in the main specifications as it halves the number of observations. We do so after checking that its inclusion in the regression does not significantly affect the settlement coefficient.

bias would drive the *SetPop* coefficient towards zero as a local shock would have the opposite effect on Palestinian animosity and Israeli settlements' growth. This source of endogeneity applies more to changes than to levels therefore it should not represent a serious concern for the regressions in Tables 2 and 3.

We address this concern by instrumenting *SetPop* with a variable constructed on the basis of the shift shares methodology, which has been extensively employed in the labour market literature (Bartik 1991; Card 2001; Ottaviano and Peri, 2006). The idea is to re-compute the population of each settlement of type *s* (where s is religious, secular, mixed or others) by assuming that its population in 1985 grew at the nation-wide population growth of *s*. Therefore we force all religious settlements to grow at the same rate as the growth in the settlers' religious population after 1985, and so on for the other types of settlements. More formally, we tweak the pop_{bl} term in equation (2) as follows: (5)

$$\widehat{pop_{bt}^s} = pop_{b85}^s \times (1 + g_{1985-t}^s)$$

where *g* is the growth rate of settlers' population of type *s* between 1985 and t (where t is 1995 or 2005). The growth rates differ substantially between types *s* (Figure 4) for reasons that should be unrelated to the specific local conditions and preferences of Palestinian localities. These differences are rather due to factors such as differences in fertility rates across groups (religious settlers have typically higher fertility than secular settlers) and differential rates of migration from Israel and elsewhere into the Palestinian territory. Therefore the formulation (5) ensures that the changes in the settlements' population between 1995 and 2005, which underlines the changes in the *SetPop* variable in equation (3), are exogenous to local conditions including political attitudes. Plugging (5) into equation (2) we can compute the shift share instrument for *SetPop* as: (6)

$$SetPop_{lt}^{shift} = \sum_{s=1}^{\tau} \sum_{b \in N_{l85}} \left((\widehat{pop_{bt}^s}) \frac{1}{d_{bl}^{road}} \right)$$

Note that as we use the existing settlements in 1985 as the starting point, we keep the set of relevant settlements for each locality N_{l85} (i.e. within 20 Km from the locality) fixed over time.

The first stage result confirms that the instrument is powerful and has the expected positive sign (column 5). When we instrument it, the $SetPop^{20km}$ coefficient doubles in absolute magnitude and becomes significant. This suggests that the time-varying endogeneity biases the coefficient towards zero (making it less negative than its real size). This is consistent with our hypothesis that positive unobserved shocks at the local level increase moderation in local Palestinian political preferences and at the same time they also increase the attractiveness of local settlements

to potential Israeli migrants. The size of the coefficient is very close to the size in 1996 and 2006 (see columns 6 and 10 in Table 3), that is an increase in the population of a settlement by 1000 settlers one Km away from the locality reduces the moderate voting by 0.43 percentage point of the total electorate, or 0.57 percentage points of the voters. The result is also robust to adding local Palestinian and Israeli fatalities in the previous years (column 6).

We next explore to what extent the withdrawal of the settlements in Gaza in 2005 may have driven the results. Column (7) shows that the *SetPop* coefficient is very similar when considering only the West Bank. In addition the computation of the settlements' population growth rate lumps together Gaza and the West Bank, which may be problematic as that is not reflective of the different evolution of Israeli settlements in the two regions between 1995 and 2005. Therefore we recompute the population growth rate of the various settlements' types in equation (5) separately for West Bank and Gaza. These region-specific rates are then plugged in equation (6) to construct the instrument. The results are again little affected both across the Palestinian territories (column 8) and in West Bank alone (column 9).

Taken together, these results strongly suggest that the presence and growth of the settlements has significantly affected the political preferences of the Palestinians in both Parliamentary elections held so far. In particular the presence and growth of the settlements leads to a greater radicalization of the Palestinian population increasing its support for factions less conciliatory towards Israel and the conflict.

6.2. Implications on the elections

How quantitatively relevant are these effects of the settlements on the voting of Palestinians? In order to answer this question it is useful to compute the average effect of the *SetPop* coefficient at the mean value of the variable, which is 0.0072 in 1996 and 0.0089 in 2006. Taking the *SetPop* coefficients in Table 3 (columns 3 and 6 for 1996 and columns 7 and 10 for 2006) these values suggest that on average the settlements reduced the share of moderate votes in eligible voters by between 2.5 and 3.1 percentage points in 1996 and by between 3.9 and 4 percentage points in 2006. These figures translate into 3.2-4 percentage points of the actual voters in 1996 and 5.1-5.3 percentage points in 2006.

Table 5 suggests that these effects are likely to have made a difference in the 2006 legislative elections won by Hamas. The table presents the results of the multi-member district plurality part of the election, whereby voters in each district voted for a number of candidates equal to the number of seat available in that district[16]. As Israeli settlements had already been evacuated in Gaza, the table focuses only on the West Bank. The average absolute

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16 The system also assigns part of the seats through proportional representation on the basis of the nation-wide shares of votes of each party.

difference between the shares of votes of Hamas and Fatah across districts is 6.3% (of the total eligible voters), and the average difference weighted by the number of seats is 5.2%. For those districts where Hamas won a majority of the votes (and of the seats), the average difference with Fatah is 4.1%. The *SetPop* coefficient for Fatah evaluated at the mean value of *SetPop* in 2006 suggests that the settlements reduce on average the Fatah's share of votes (out of total eligible voters) by 3.9 percentage points. Assuming that these votes would flow to the largest radical party, Hamas, this would imply that the settlements on average generated a 7.7 percentage point increase in the share of votes (out of the eligible) for Hamas candidates relative to Fatah candidates. This anti-Fatah effect of the settlements is larger than the average district-level difference in votes' shares between Hamas and Fatah across West Bank.

Even in a district like Hebron where the advantage of Hamas was larger than 7.7%, our simulation suggests that the settlement effect was large enough to allow Hamas to gain two seats at the expense of Fatah. Table A4 in the appendix details the computation on the basis of the *SetPop* coefficient above evaluated at the value of *SetPop* of Hebron in 2006 (0.0063), which suggests that in the absence of the settlements the average share of total eligible votes for Fatah candidates in Hebron would be 2.7 percentage points higher. Assuming that these votes would come from Hamas and apply these changes to the shares of the individual candidates, the new shares indicate that in the absence of the settlements two Fatah candidates would have won the seats over two Hamas candidates, who in fact have been elected in 2006. These pieces of evidence suggest that without the settlements Hamas may well have lost the 2006 legislative elections.

6.3. Attitudes from opinion polls
In this section we complement the analysis based on electoral results with one based on specific opinions concerning the Israeli-Palestinian conflict. We employ equation (4) to examine to what extent settlements have affected the Palestinian support for violence against Israelis as elicited through the same question in repeated surveys.

Table 6 presents the results. A larger settlement index $SetPop^{20km}$ is associated with a higher support of the district's population for violence against Israeli targets (column 1). This specification includes district and survey round effects, a large array of individual level socio-demographic controls, the district's unemployment rate and employment in Israel as well as past level of Palestinian and Israeli fatalities. As in the previous analysis the result is unchanged when varying the distance threshold for the settlement index (column 2). The result survives also when not weighing the settlements' population by the inverse of the distance (column 3). However the significance of the effect is reduced which suggests that close settlements disproportionately affect Palestinian attitudes towards

Israelis. Unlike in the long first difference specification above, the settlement effect becomes insignificant when using the number of settlements within 20 Km as the main regressor (column 4). This non-significant effect is plausibly due to the low year-to-year variation in the district-level number of settlements, especially in the latter part of the period (2000-2007). Conversely, the year-to-year variation in settlements' population appears to significantly affect Palestinian attitudes vis-à-vis Israel.

The positive association of the settlement variable with Palestinian support for violence is even stronger for the violence against Israeli civilians, who include also Israeli settlers (column 5). This effect is robust even to using only the number of settlements rather than the population (column 6). Interestingly, the share of the district's population employed in Israel mildly reduces Palestinian support for violence against Israeli civilians confirming the above finding that work opportunities in Israel favour the moderation of Palestinians vis-à-vis the Israelis. This result is also in line with the evidence on the conflict inducing effect of restricting Palestinian access to the Israeli labour market (Miaari et al., 2014).

Again we also check the robustness of the results to instrumenting the settlement index through the shift share instrument defined in (6). The instrumented settlement coefficient becomes larger when using support to violence against Israeli targets (columns 7-8) or against Israeli civilians (columns 9-10) as dependent variable. The results are very similar whether using the total growth settlement population rates (columns 7 and 9) or the regional ones to compute the instrument (columns 8 and 10). This result confirms that the endogeneity of settlement population from time-varying omitted variables biases the coefficient towards zero. The coefficients from the IV specifications indicate that 1,000 additional Israeli settlers located one kilometer away from the district's capital raise the local Palestinian support for violence against Israeli targets by 1.5 percentage points and against Israeli civilians by between 3.9 and 4 percentage points.

While these results are highly consistent with the election ones, the absolute magnitude of the settlements have a larger effect on Palestinian support for violence against Israel than they do on Palestinian votes for radical political factions. This difference in magnitude can be explained in two ways. First, the electoral votes are driven by a variety of issues of which the relation with Israel is just one although particularly salient. Conversely the support for violence against Israel is very specific to Palestinians' relation with Israeli policies, among which the settlement policy is a key one. Second, the identification in the case of Palestinian attitudes from opinion polls hinges on short-term changes, which may affect the population differently than the longer term changes tested in Table 4.

6.4. Channels

A natural follow-up question is what channels drive the radicalization effect of settlements on the Palestinian population. We test for the three main channels identified above by augmenting the cross-sectional analysis with variables capturing each of the channels.

In Table 7 we test for the employment and violence/restriction channels. We first check to what extent the employment opportunities provided by the settlements' proximity influences the settlements' effect on political preferences. To do so, in column (1) we add to the specification in column (3), table 2 the share of locality's residents employed in settlements in 1995. As expected this variable has a positive effect on the share of moderate votes in the locality in line with the idea that settlements have a positive effect on Palestinian livelihoods via this channel. The inclusion of this variable almost halves the number of observations so we run the specification without this control over the same sample to compare the effect of this addition on the *SetPop* coefficient (column 2). The absolute magnitude of the latter is slightly higher in column (1) than in column (2) consistently with the idea that purging the settlement effect of its 'positive' labor market channel increases its negative effect on Palestinian attitudes. However the increment in absolute size of the coefficient is very small suggesting that the labor market channel is much less important than the other channels in driving the effect of the settlements on Palestinian political preferences. On the other hand the share of the labor force employed in settlements does not exert any significant impact on Palestinian votes in 2006 (column 3), in line with the non significant effect of employment in Israel (Table 3, columns 9-10). The *SetPop* coefficient is unaffected by the inclusion of this variable in 2006[17].

As data on violence committed by the settlers towards Palestinians is not available for 1996, we test for the importance of violence by focusing on religious settlements, which tend to be more prone to violent actions than the others[18]. In column (4) we add to the regression the *SetPop* variable computed only over religious settlements. This coefficient of this variable is negative, highly significant and of a larger order of magnitude than the *SetPop* coefficient. This difference in coefficient's size is plausibly due to the violence channel as no difference is expected between religious and other settlements in terms of the other two channels. This result suggests that in 1996 violence channel may well have exerted some important effect on Palestinian voting behavior. However the settlement coefficient remains negative and significant and its absolute size is a fourth smaller than in the

baseline specification in Table 3. This effect of the religious settlements on the *SetPop* coefficient holds also over the restricted sample obtained when including the share of employment in settlement (column 5).

On the other hand the religious settlements do not exert a differential effect on voting behavior relatively to the other settlements in the 2006 elections (column 6). This provides some indirect support for the hypothesis that in 2006 the violence channel was relatively unimportant in explaining the settlements' influence on Palestinian political preferences. Indeed when we use the actual number of attacks by settlers in the Palestinian locality as a proxy for the violence channel, the settlement coefficient is not affected (cfr. column 7 with column 3). However the coefficient of settlers' attacks is negative and significant as expected but small in absolute size. At the same time the mobility restrictions (checkpoints and other barriers) associated with settlements' proximity do not seem to affect at all Palestinian voting behaviour[19]. This further confirms that the settlements' presence affects Palestinian political preferences via other mechanisms than the violence/restriction or the employment ones.

In table 8 we test whether the natural resource mechanism can indeed explain the radicalization effect of settlements on Palestinians. In the absence of direct data on natural resource use by the settlements, we can use a series of interaction variables for testing the importance of this channel. First, we add to the baseline regression the share of locality's employment in Palestinian agriculture with *SetPop*. This share is a good proxy of the degree to which the locality's residents rely on agricultural land for their subsistence. If land pressure from the settlements' presence is an important channel, then the settlement index should exert a more radicalizing impact on Palestinians in localities with a higher share of agricultural employment. Column (1) shows that this is the case in 1996 (although this differential effect is not significant at standard levels). In addition the inclusion of the interaction term reduces the significance of the settlement coefficient as well as its absolute size. This provides suggestive evidence that land competition is an important channel for the radicalization effect of the settlements on Palestinians.

As discussed above, settlements may also increase the competition with Palestinians over other scarce resources, such as water and electricity. In addition their presence can constrain the ability of Palestinian localities to connect to public utilities as the Palestinian infrastructure networks may need to cross areas controlled by nearby settlements. In order to control for the relevance of these effects, in column (2) we interact *SetPop* with the share of locality's

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17 To save clutter we do not show the comparison with the same regression without this control for 2006, but it is available upon request.

18 We corroborate this hypothesis with data on settlements' violence in 2006 from OCHA and violence in 2011 from ARIJ.

19 These variables are constructed in the same vein as the settlement indices, taking the number of barriers within 20 minutes from the locality's centroid and weighting each barrier by the inverse of the distance (see Calì and Miaari, 2013 for details).

residents connected to the public water network and with the share connected to the public electricity network. Both interaction terms have the expected negative sign although only the public water interaction is statistically significant. This suggests that settlements radicalize Palestinian views more in areas which have relatively greater access to water and therefore are potentially more affected from poorer connections following settlements' presence. The addition of these variables increases the absolute size of the interaction between the agriculture share and the settlement variable, which now becomes significant. Importantly the combined effect of these three interaction terms makes the coefficient of *SetPop* positive and insignificant, supporting the hypothesis that the competition for natural resources is the key driver behind the radicalizing effect of settlements on Palestinian attitudes.

Pressure over land does not come only for agricultural land but it can also be important for housing. In particular highly densely populated areas may feel more pressure from settlements than lowly populated areas. To investigate this hypothesis in column (3) we add the interaction between *SetPop* and population density. We also check if higher population density makes the pressure from settlements on agricultural more problematic. The results suggest that the radicalization effect of settlements is the same regardless of the localities' population density. On the other hand among localities highly dependent on agricultural land the effect of settlements on voting is the largest in those with lower population density. In other words, the settlements cause most political radicalization in more sparsely populated rural communities.

We also test for the importance of these effects in the 2006 elections. To do so we can only use the interaction between *SetPop* and the availability of public water and electricity as data on the agricultural share of employment in the localities is not available to us. Again the coefficients of the interaction terms are negative although they are not estimated precisely (column 4). Their inclusion makes the *SetPop* variable insignificant (and positive), confirming that the competition for natural resources is the key channel through which Israeli settlements affect the Palestinian attitudes towards Israel and the conflict.

6. Conclusions

Grievances are often considered important in triggering and perpetuating conflicts but little evidence exists that test for direct sources of grievances. This paper has provided novel evidence on the role of a particular source of grievances in one of the longest conflicts in modern times. By using an index of proximity to the settlements',

the analysis has found that the presence and expansion of formal Israeli settlements in the Palestinian territories caused a significant radicalization of the Palestinian attitudes towards Israel and the conflict. This effect is highly robust across different periods spanning over a decade and a half, as well as to the use of different estimation methods, identification strategies, dependent and control variables. Our preferred IV specifications suggest that an increase of one thousands of settlers one kilometer away from the locality reduces the support for more moderate factions by between 0.5 and 0.6 percentage point (of the actual voters). In addition it increases the probability of supporting violence against Israeli targets by 1.5 and against Israeli civilians, incuding settlers, by 3.9-4 percentage points. We argue that the size of this estimated effect of the settlements on Palestinian voting could be sufficient to explain the election success of the radical faction Hamas in the 2006 legislative elections.

We also provide evidence that this increase in grievances of the Palestinians caused by the settlements is mainly due to the restrictions on the access and availability of resources, particularly land and water, that Palestinians are subjected to due to the settlements' presence. The results also suggest that settlements' violence increases Palestinian political radicalization although the effect is marginal. On the other hand, the employment opportunities generated by the settlements slightly increase the moderation of the Palestinians although the importance of this channel is negligible relative to the competition for resources. In the same vein our results suggest that also the employment opportunities in Israel promote moderate Palestinian views towards the conflict. In line with previous evidence (Miaari et al., 2014), these results highlight the opportunity of facilitating peoples' mobility between the Palestinian territories and Israel as a way to generate more favourable conditions towards a solution of the conflict.

To our knowledge this is (surprisingly) the first quantitative study that focuses on the role that such an important Israeli policy has played in the Israeli-Palestinian conflict. In this sense it complements other studies focusing on the role of other Israeli policies such as house demolitions (Benmelech et al., 2010) and employment restrictions (Miaari et al., 2014). The settlement policy has arguably been an even more defining feature of Israel's role in the conflict than the other policies and many observers have noted that this represents one of the most salient issues for the conflict's resolution (Eiran, 2012).

Our analysis confirms this view by providing a new angle to evaluate the role of settlements in the Israeli-Palestinian conflict. The Palestinians (and much of the international community) identify the settlements as the

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20 That area has been identified according to the internationally recognized 1949 armistice boundaries (the so-called Green Line).

21 This is the position of the Palestinian Authority, which has long demanded the freezing of settlements' expansion as a pre-condition for commencing negotiations with the Israeli government. Much of the international community holds the same position. For example, the Obama administration has repeatedly petitioned the Israeli government for temporary freezes of settlement construction to facilitate the negotiations.

main obstacle to the resolution of the conflict as they occupy much of the land where the future Palestinian state should be located[20]. The larger the settlements' population, the argument goes, the more difficult it would be for Israel to eventually relinquish a contiguous and large enough territory for a viable Palestinian state[21]. Our findings propose a different but arguably equally important detrimental effect of the settlements on the conflict: the radicalization of the Palestinian population.

From a policy perspective this angle may have important implications on the specific Israeli-Palestinian conflict. As the settlements' presence has generated and continues to generate acute grievances among the Palestinians, addressing these grievances would be important for a durable solution to the conflict. To the extent that such grievances are related to the confiscation of Palestinian assets, some compensation or restitution to the Palestinian populations for their losses should be considered.

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Figures and Tables

Figure 1: Settlements in the West Bank, 2011
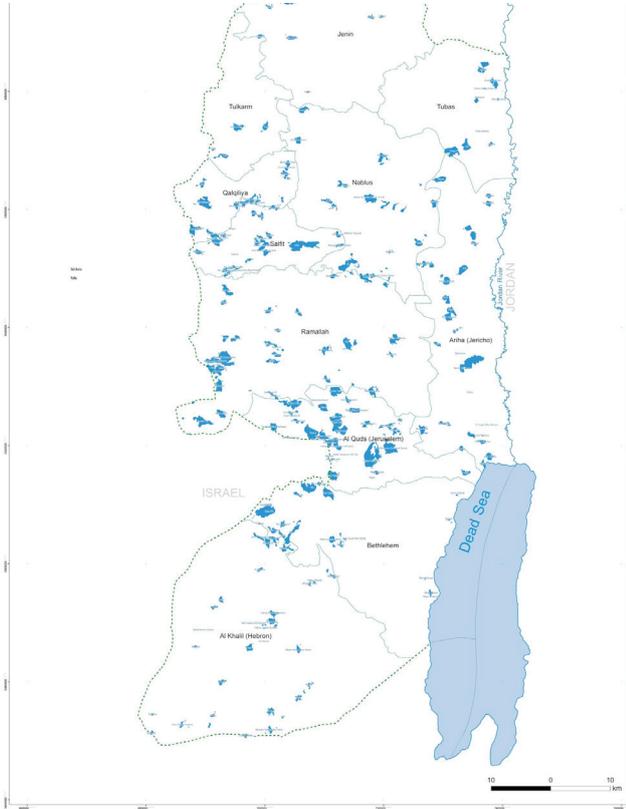
Source: ARIJ

Figure 3: Formal Israeli Settlement's Population in the Palestinian Territory, 1967-2011
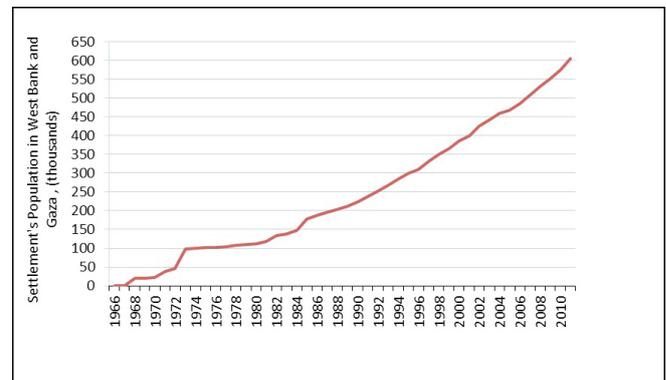
Source: Authors' calculations on ARIJ data

Figure 2: Number of Formal Israeli Settlements in the Palestinian Territory, by Region, 1967-2011
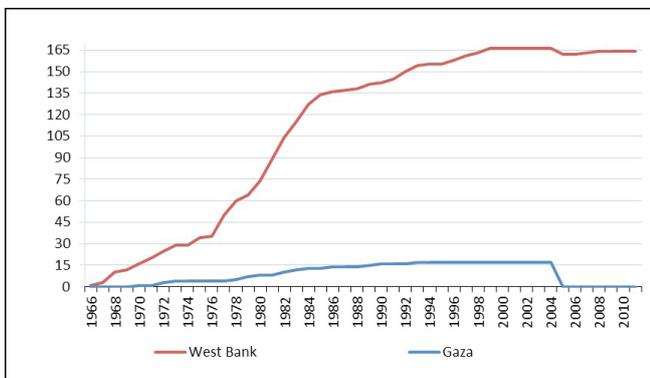
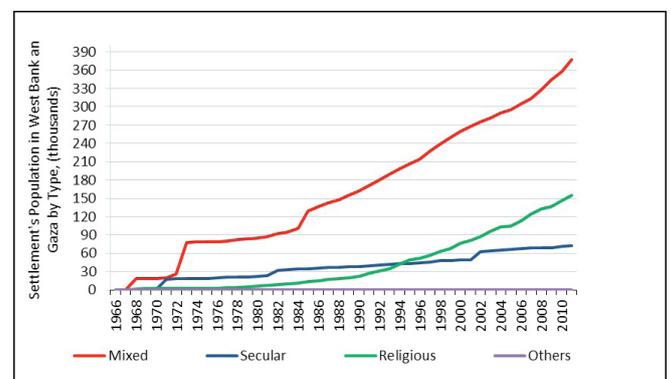*Source: Authors' calculations on ARIJ data*

Figure 4: Formal Israeli Settlement's Population in the Palestinian Territory, by Type of Settlement, 1967-2011

Source: Authors' calculations on ARIJ data

Table 1A: Summary Statistics for Key Variable, Locality Level Data by Year

		1996					2006				
		Obs.	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Max
Percentage votes for Fatah (out of all eligible voters)		414	0.284	0.16	0.01	0.997	473	0.369	0.14	0.03	0.861
Percentage votes for moderate factions (out of all eligible voters)		414	0.372	0.16	0.01	0.997	473	0.376	0.14	0.04	0.861
SetPop^{20km} (x1000 people divided by distance in meters)		429	0.007	0.01	0	0.063	473	0.009	0.01	0	0.067
Israeli settlements within 20 km of the locality		429	23.65	8.21	3	36	473	23.08	11.4	0	38
Shift Share SetPop		429	0.135	0.043	0.044	0.204	473	0.202	0.057	0.066	0.293
Shift Share SetNr		429	59.36	7.57	40	71.71	473	56.2	8.76	35	73.74
	Total population (log)	407	7.677	1.23	4.41	12.77	426	7.967	1.22	5.41	12.99
	Population density (log)	387	6.712	1.08	3.07	13.06	426	6.99	1.04	4.33	11.05
Socioeconomic characteristics in each locality	Share of males in the population	407	50.93	1.63	42.7	59.76	426	50.75	1.33	45.9	54.85
	Share of married in the population	407	32.93	2.3	25.8	43.78	426	32.96	2.11	26.9	40.88
	Share of population between the ages of 15 and 40 years	407	38.63	2.44	31.6	48.19	426	39.92	2.46	29.6	46.31
	Share of population with up to primary education	407	59.61	9.8	35.1	92.98	426	46.15	8.67	26.1	84.18
	Share of refugees in the population	407	24.12	28.8	0	99.75	426	28.12	30.6	0	99.72
	Share of households with over eight members	407	32.73	9.27	5.88	65.88	426	25.18	8.89	5.7	57.29
	Unemployment rate	407	15.57	7.67	0	50.85	426	17.71	10.8	0	85.6
	Agricultural share of empl.	408	0.203	0.25	0	1					
Availability of public utilities in locality	Water	407	68.63	41.4	0	100	426	74.26	37.9	0	100
	Electricity	407	87.78	28.6	0	100	426	95.95	14.5	0	100
	Sewage	407	5.944	20.2	0	99.61	426	14.04	31	0	99.9
	Telephone (landline)	407	10.27	16.7	0	91.39	426	38.09	18	0	86.14
Distance from the Green line (10 km)		429	1.425	0.97	0	4.522	473	1.287	0.95	0	4.456
Palestinian fatalities		429	3.023	10.8	0	101	473	6.905	33.6	0	460
Israeli fatalities		429	0.667	3.45	0	35	473	2.076	8.54	0	103
West Bank Wall		429	0	0	0	0	473	18.21	36.4	0	100
Share of population legally employed in Israel		429	0.983	1.02	0	9.964	473	0.379	0.5	0	4.329
Share of employment in Israeli settlements		219	2.892	6.43	0	51.55	265	3.032	6.04	0	35.41

Source: Authors' elaboration using different data sets; see text for details.
Notes: See Table 1A for variable descriptions.

Table 1B: Summary Statistics for key Variable, Palestinian Public Opinion Polls

		Obs.	Mean	SD	Min	Max
Support armed attacks against Israeli targets		39,100	0.43	0.5	0	1
Support armed attacks against Israeli civilians		24,967	0.51	0.5	0	1
Males		53,410	0.49	0.5	0	1
Age Group	18-24	52,054	0.22	0.41	0	1
	25-31	52,054	0.21	0.41	0	1
	32-38	52,054	0.18	0.38	0	1
	39-45	52,054	0.15	0.36	0	1
	46-52	52,054	0.09	0.29	0	1
	≥53	52,054	0.15	0.35	0	1
Type of residence	Cities	53,435	0.37	0.48	0	1
	Villages	53,435	0.44	0.5	0	1
	Refugee camps	53,435	0.19	0.39	0	1
Married		52,064	0.76	0.43	0	1
Education	Illiterate	53,223	0.12	0.32	0	1
	Elementary	53,223	0.15	0.36	0	1
	Preparatory	53,223	0.26	0.44	0	1
	Secondary	53,223	0.28	0.45	0	1
	Some college	53,223	0.08	0.28	0	1
	BA	53,223	0.09	0.29	0	1
	MA and above	53,223	0.01	0.1	0	1
Unemployment		53,012	0.07	0.25	0	1
Refugees		53,252	0.44	0.5	0	1

Source: Authors' calculations using poll data from Palestinian Center for Policy and Survey Research (PSR).
Notes: See Table A2 for variable descriptions.

Table 2: The impact of settlements on Palestinian political preferences, 1996-2006

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	1996	1996	1996	1996	1996	1996	1996	2006	2006	2006
Sample	All	All	All	All	All	All	WB	All	WB	All
SetPop^{20km}	-2.032***	-2.730***	-2.656**				-2.709**	-3.791***	-3.810***	-3.758***
	(0.464)	(1.040)	(1.040)				(1.050)	(0.453)	(0.465)	(0.451)
SetPop^{30km}				-2.657**						
				(1.062)						
SetPop^{20km} (unweighted)					-0.001***					
					(0.000)					
SetNr^{20km} (unweighted)						-0.001				
						(0.001)				
Socio-demo controls	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
Fatalities	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES
Fatalities from protests	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
West Bank Wall	NO	NO	NO	NO	NO	NO	NO	YES	YES	YES
Observations	414	371	371	371	371	371	355	426	396	426
R^2	0.026	0.130	0.132	0.131	0.151	0.118	0.135	0.221	0.205	0.226

Notes: The dependent variable in columns (1)-(7) is locality's percentage support for moderate factions in the elections for the Palestinian Legislative Council held in 1996. Dependent variable in columns (8)-(9) is the locality's percentage support for moderate factions in the elections for the Palestinian Legislative Council held in 2006. All regressions include a dummy for Gaza; Socio-demographic controls include locality's population, population density, share of males, share of married individuals, share of population aged 15-40, share of population with elementary education or below, share of refugees, share of households with over 8 members, share of population employed agriculture, unemployment rate, access to public utilities, including water, electricity, sewage, and landline telephone. Fatalities controls include the locality's cumulative number of Palestinians killed by Israel and the cumulative number of Israelis killed by Palestinians over the preceding 5 years; all regressors are lagged one year. West Bank Wall is the cumulative number of Km of Wall constructed in the locality up to 2005. The regressions are estimated through OLS. Robust standard errors are reported in parentheses; *, **, *** represent statistical significance at the 10, 5, and 1 percent levels

Table 3: The impact of settlements on Palestinian political preferences, robustness for Settlement's Index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Method	OLS	OLS	IV	IV	IV	IV	IV	IV	IV	IV
Year	1996	2006	1996	1996	1996	1996	2006	2006	2006	2006
Dependent var.	Fatah	Fatah	Moderates	Fatah	Moderates	Moderates	Moderates	Fatah	Moderates	Moderates
SetPop^{20km}	-3.726***	-3.768***	-3.400***	-4.417***	-4.867*	-4.254***	-4.335***	-4.264***	-8.613***	-4.493***
	(0.970)	(0.452)	(1.025)	(0.914)	(2.877)	(1.144)	(0.460)	(0.457)	(2.081)	(0.593)
Employment in Israel					0.001**	0.001**			0.001	-0.000
					(0.001)	(0.001)			(0.001)	(0.001)
West Bank Wall	NO	YES	NO	NO	NO	NO	YES	YES	YES	YES
Fatalities	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Socio-demo controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	371	426	371	371	201	201	426	426	252	252
R^2	0.139	0.220	0.130	0.138	0.135	0.158	0.219	0.187	0.146	0.281
First Stage Results										
SetPop^{20km} (1985)			1.279***	1.279***		1.280***	1.829***	1.829***		1.816***
			(0.020)	(0.020)		(0.027)	(0.048)	(0.048)		(0.049)
Dist. to Green line					-0.004***	-0.000			-0.004***	-0.000
					(0.001)	(0.000)			(0.001)	(0.000)
Hansen J statistic						0.055				5.334

Notes: The dependent variable in columns (1)–(2) is locality's percentage support for Fatah in the elections for the Palestinian Legislative Council. All regressors are lagged one year. The regressions are estimated through the OLS model. Robust standard errors are reported in parentheses; *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

Table 4: The impact of changes in settlements on changes in Palestinian political preferences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Method	FE	FE	FE	FE	FE IV	FE IV	FE IV	FE IV	FE IV
Region	All	All	All	All	All	All	West Bank	All	West Bank
Dep. variable	Share of votes for moderate parties (out of eligible voters) in the elections								
SetPop^{20km}	-2.120	-1.918			-4.310**	-4.019*	-3.735*	-3.874*	-3.615*
	(1.598)	(1.606)			(2.114)	(2.136)	(2.159)	(2.137)	(2.169)
SetNr^{20km}			-47.631***						
			(15.630)						
SetNr^{20km} (unweighted)				-0.006***					
				(0.002)					
Fatalities	NO	YES	YES	YES	NO	YES	YES	YES	YES
Observations	819	819	819	819	728	728	698	728	698
R-squared	0.260	0.263	0.276	0.271	0.257	0.260	0.226	0.261	0.227
Nr. of localities	455	455	455	455	364	364	349	364	349
First Stage Results									
Shift Shr SetPop					0.818***	0.818***	0.826***		
					(0.043)	(0.043)	(0.044)		
Shift Shr SetPop (regio)								0.790***	0.793***
								(0.040)	(0.041)

Notes: See Table A1 for the definitions of the dependent and independent variables. The regressions are estimated through the OLS model. All regressions include locality and year fixed effects along with the full set of socio-demographic controls. Robust standard errors are reported in parentheses; The symbols *, **, *** represent statistical significance at the 10, 5, and 1 percent level.

Table 5: The election 2006 across West Bank districts

Seats	Hamas Votes	Fatah Votes	Diff.
4	25%	26%	-1%
1	28%	25%	3%
3	18%	23%	-5%
6	26%	25%	1%
2	26%	40%	-14%
1	25%	21%	4%
5	25%	22%	4%
1	21%	42%	-21%
6	15%	11%	3%
4	12%	16%	-4%
9	29%	20%	9%
			4.1%
			6.3%
			5.2%
Avg. SetPop[20km] effect in 2006	3.9%	-3.9%	7.7%

Note: the shares of votes are the average share of votes for all the party's candidates in the district out of the district's eligible voters.
Source: Palestinian Central Elections Committee.

Appendix: Additional Tables

Table 6: The impact of Settlements on Palestinian support to violence against Israeli targets

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Method	LPM	LPM	LPM	LPM	LPM	LPM	IV LPM	IV LPM	IV LPM	IV LPM
dep. Variable	Support for violence against any Israeli targets				Israeli civilians		Any targets		Civilian targets	
SetPop^{20Km}	10.002**				34.428***		14.764***	14.992***	40.368***	38.766***
	(4.381)				(10.137)		(4.880)	(4.876)	(13.352)	(12.722)
SetPop^{30Km}		10.271**								
		(4.442)								
SetPop^{20Km} (unweighted)			0.001*							
			(0.001)							
SetNr^{20Km}				-0.004		0.007**				
				(0.008)		(0.003)				
Share empl. in Israel	-0.001	-0.001	-0.001	-0.000	-0.005	-0.003	-0.001	-0.001	-0.005*	-0.005*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.001)	(0.001)	(0.003)	(0.003)
Observations	31,152	31,152	31,152	31,152	23,872	23,872	31,152	31,152	23,872	23,872
R^2	0.083	0.083	0.083	0.083	0.052	0.052	0.083	0.083	0.052	0.052
First Stage										
Shift Shr SetPop							0.308***		0.248***	
							(0.036)		(0.020)	
Shift Shr SetPop (regio)								0.290***		0.220***
								(0.035)		(0.017)

Notes: See Table A3 for the definitions of the dependent variables. The regressions are estimated using linear probability model (LPM). All regressions include district, quarter-year effects, a full set of individual socio-demographic controls, the district's unemployment rate, Palestinian and Israeli fatalities in the previous round and Gaza-time dummies. Robust standard errors clustered at the district-year level are reported in parentheses; The symbols *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

Table 7: The impact of settlements on Palestinian voting: violence and employment channels

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year	1996	1996	2006	1996	1996	2006	2006
Dep. Variable	Share of votes for moderate parties (out of eligible voters) in the elections						
SetPop^{20Km}	-3.230***	-3.157***	-3.921***	-1.938**	-2.001**	-3.618***	-4.064***
	(1.095)	(1.163)	(0.585)	(0.890)	(0.958)	(0.525)	(0.838)
Employment in settlements	0.007***		0.000		0.008***		0.000
	(0.001)		(0.001)		(0.002)		(0.001)
Religious SetPop				-20.97***	-35.89***	-1.233	
				(7.033)	(9.993)	(1.958)	
Settlers' attacks							-0.004**
							(0.002)
Checkpoints							0.004
							(0.012)
Other barriers							-0.001
							(0.004)
Observations	196	196	252	371	196	426	252
R-squared	0.309	0.200	0.311	0.153	0.349	0.222	0.316

Notes: Dependent variable is the locality's share of votes for moderate factions (in total eligible) in each election; All regressions control for cumulative Palestinian and Israeli fatalities in the previous five years, a dummy for Gaza. All regressors are lagged one year. All regressions include socio-demographic controls, cumulative fatalities, a dummy for Gaza. The regressions in 2006 include the length of the West Bank Wall in the locality but exclude the share of agricultural employment. See Table A1 for the definitions of the independent variables. The regressions are estimated through the OLS model. Robust standard errors are reported in parentheses; The symbols *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

Table 8: The impact of settlements on Palestinian voting, resource channels

	(1)	(2)	(3)	(4)
Year	1996	1996	1996	2006
Dep. variable	Share of votes for moderate parties (out of eligible voters) in the elections			
SetPop^{20Km}	-2.116*	8.425	6.462	12.943
	(1.084)	(7.338)	(9.435)	(8.577)
Agr. share x SetPop^{20Km}	-5.415	-9.645*	-87.23***	
	(4.318)	(5.026)	(31.210)	
Public water x SetPop^{20Km}		-0.071**	-0.071*	-0.069
		(0.034)	(0.036)	(0.048)
Public elect. x SetPop^{20Km}		-0.042	-0.008	-0.106
		(0.075)	(0.083)	(0.082)
Pop. density x SetPop^{20Km}			-0.206	
			(0.662)	
Ag. shr x PopDen x SetPop^{20Km}			12.182**	
			(4.856)	
Observations	371	371	371	426
R-squared	0.134	0.145	0.153	0.230

Notes: Dependent variable is the locality's share of votes for moderate factions (in total eligible) in each election; All regressions control for cumulative Palestinian and Israeli fatalities in the previous five years, a dummy for Gaza. All regressors are lagged one year. All regressions include socio-demographic controls, cumulative fatalities, a dummy for Gaza. The regressions in 2006 include the length of the West Bank Wall in the locality but exclude the share of agricultural employment. See Table A1 for the definitions of the independent variables. The regressions are estimated through the OLS model. Robust standard errors are reported in parentheses; The symbols *, **, *** represent statistical significance at the 10, 5, and 1 percent levels.

Table 1A: Summary Statistics for Key Variable, Locality Level Data by Year

Variable	Description
Percentage votes for Fatah	Percentage votes for Fatah out of eligible individuals, in the two Palestinian legislation council elections held in 1996 and 2006.
Percentage votes for moderate factions	Percentage votes for moderate factions out of eligible individuals, in the two Palestinian legislation council elections held in 1996 and 2006.
Israeli settlement population within 20 km of the locality	Total Population of the Israeli settlements within 20 Km of road distance from the locality, weighted by the inverse of their distance.
Number of Israeli Settlements within 20 km of the locality	Count of the Israeli settlements within 20 Km of road distance from the locality.
Male	Proportion of males out of total population in locality.
Married	Proportion of married individuals out of total population in locality.
Age 15-40	Proportion of individuals ages 15-40 out of total population in locality.
Proportion of refugees	Proportion of refugees out of the total population in locality.
Individuals with up to elementary education	Proportion of individuals with up to elementary education out of the total population in locality.
Households with more than 8 persons	Proportion of households with over eight members in locality.
Availability of public electricity	Proportion of households connected to public electricity in locality.
Availability of public water	Proportion of households connected to public water in locality.
Availability of public sewage	Proportion of households connected to public sewage in locality.
Availability of public telephone	Proportion of households connected to public telephone in locality.
Cumulative Palestinian Fatalities	Cumulative number of fatalities from politically-motivated violence (Palestinians killed by Israel) in two periods from the outbreak of the first Intifada (1987) until 1995 and from 2000 until 2005. For Palestinian fatalities, the locality is the locality in which the fatal wounding occurred. In a few cases, the fatal wounding occurred within Israel. In those cases, we considered the locality of residence of the attacker, or the closest geographical locality.
Cumulative Israeli Fatalities	Cumulative number of fatalities from politically-motivated violence (Israelis killed by Palestinians) in two periods from the outbreak of the first Intifada (1987) until 1995 and from 2000 until 2005. For Israeli fatalities in the territories: we took the locality in which the fatal wounding occurred. For Israeli fatalities in Israel, we considered the locality of origin of the attacker. In cases where the attacker is unknown, we assumed it was the closest locality to where the attack took place.
West Bank Wall	Proportion of Wall existing and under Construction out of wall existing, under Construction and planned in locality.
Share of employment in Israeli settlements	Share of Palestinian workers employed in Israeli settlements out of the locality's labor force.
Share of population legally employed in Israel	Share of Palestinians holding permits to work inside Israel out of total population in locality.

Table A2: classification of the Palestinian Parties

The moderate Parties in the 1996 elections:	Fatah, National Democratic Coalition, Palestinian People's Party (PPP), Palestine Democratic Union (Fida), Palestinian Popular Struggle Front (Nidal), Palestine Forum, The Future, Independent National Alliance
The radical Parties in the 1996 elections:	Islamic Independents, National Independents, Palestinian Liberation Front, Islamic Struggle movement, National Progressivism Party, Arab Liberation Front, National Movement for Change, Islamic Jihad, Freedom and Independent Party, Arabic Communist Party
The moderate Parties in the 2006 elections:	Fatah, National Coalition for Justice and Democracy, Alternative List (Palestinian People's Party (PPP) and Fida), Third Way (Palestinian Authority), Palestinian Justice.
The radical Parties in the 2006 elections:	Change and Reform (Hamas), Palestinian Arab Front, Freedom and Social Justice, Palestinian Liberation Front, The list of the Martyr Abu Ali Mustapha, Independent Palestine.

Table A3: Contents of DSP Polls of Palestinian Opinion

Variable	Exact Wording of the Questions	Number of polls
Support armed attacks against Israeli targets	Concerning armed attacks against Israeli targets, I….1. Strongly Support 2. Support 3. Oppose 4. Strongly oppose 5. No Opinion /Don't Know	24
Support armed attacks against Israeli civilians	Concerning armed attacks against Israeli civilians inside Israel, I….1. Strongly support 2. Support 3. Oppose 4. Strongly oppose 5. No Opinion /Don't Know	18

Table A4: What would have happened in the 2006 elections in Hebron w/o settlements

Actual results	Party	Votes	Elig. Share	Share w/o settlements	Results w/o settlements
1st elected	Hamas	59,885	32.2%	29.5%	1st elected
2nd elected	Hamas	59,841	32.2%	29.5%	2nd elected
3rd elected	Hamas	55,649	29.9%	27.2%	3rd elected
4th elected	Hamas	53,720	28.9%	26.2%	4th elected
5th elected	Hamas	52,027	28.0%	25.3%	5th elected
6th elected	Hamas	51,891	27.9%	25.2%	6th elected
7th elected	Hamas	50,485	27.1%	24.4%	8th elected
8th elected	Hamas	49,236	26.5%	23.8%	1st non elect.
9th elected	Hamas	47,353	25.5%	22.8%	4th non elect.
1st non elect.	Fatah	41,293	22.2%	24.9%	7th elected
2nd non elect.	Fatah	39,672	21.3%	24.0%	9th elected
3rd non elect.	Fatah	38,367	20.6%	23.3%	2nd non elect.
4th non elect.	Fatah	37,558	20.2%	22.9%	3rd non elect.