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Social Crisis Prevention:
A Political Alert Index for the Israel-Palestine
Conflict

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A Political Alert Index for the Israel-Palestine Conflict

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Abstract

This study presents a novel approach to crisis prevention based on data on premonitory political and religious events and the international media coverage of publicly sensitive circumstances. We implement our method to the Israel-Palestine conflict. First we identify two main political scenarios associated with "good" and "bad" political times of low or high levels of political unrest using a hierarchical clustering technique. Then we construct a political alert index to predict the probability of occurrence of good and bad times. Bad times are positively and significantly associated with the number of Israeli victims at the checkpoints, the number of homeless or injured Palestinians and with the number of demolitions. The number of Palestinian prisoners and injured Israelis negatively affect the probability of occurrence of a bad time. Media coverage is positively and significantly associated with the transition to bad times. Our results show that our statistical tool can be a reliable method for early warning of social crisis and can be effectively replicated to other social crisis situations.

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1. Introduction

Conflicts, like natural disasters, may erupt unexpectedly or may be signaled with large or short anticipation. The efficacy in preventing critical events crucially depends on the ability to detect and interpret the signals when a monitoring system is present. Conflicts, either at the social or family level, however, occur more often in stressed, fragile, vulnerable and institutionally poor environments where proper surveillance is missing.

For this reason, the global community has been offering societies exposed to the risk of armed conflicts a service for prevention, mediation and recovery from the crisis by identifying and addressing the underlying causes of violence and crime. To serve this purpose, the United Nations Development Program (UNDP) established in 2000 the Thematic Trust Fund for Crisis Prevention and Recovery (CPR TTF) managed by the Bureau for Crisis Prevention and Recovery.[1] More than 100 countries benefited from the funding program. The goal is to help countries exposed to chronic or periodic social emergencies to transform from a state of fragility to greater strength and resilience in order to create lasting conditions fostering progress and the creation of peace dividends. The Bureau also supports innovative approaches to crisis prevention, early warning and conflict resolution services, knowledge transfer and institutional capacity building aiming at empowering the parts in conflict with the aim of quickly move towards peaceful long-term development.

Interestingly, predicting a manmade social disaster such as a conflict is akin to predicting a natural disaster such as an earthquake. The human toll can be very high in both cases and are both very difficult to foresee. However, the difference is that hundreds of institutions and scientists are committed to predict earthquakes and very few institutions and intellects invest human capital on predicting conflicts. The fact that conflicts can be prevented if timely anticipated, while prevention is not an option in the case of earthquakes, should make the global community more aware of the opportunity that investing in research about the political economy of conflicts can be highly rewarding in terms of social returns.

What seems to be lacking is the creation of a country-specific database collecting

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[1] The efforts of the Bureau are mainly aimed at mediating between conflicting groups and the improvement of crisis governance (Bureau for Crisis Prevention and Recovery 2012).

sensitive political, economic and social data providing statistically relevant information allowing reliable predictions within an early warning system.

Radinsky *et al.* (2013) describe methods for learning to forecast forthcoming events of interest such as disease outbreaks, deaths, and riots in advance of the occurrence of these events using information obtained from news corpora and multiple web resources and evaluate the predictive power of the approach on real-world events. Silver (2012) in a recent book discusses the science of prediction in a wide range of domains, covering politics, sports, earthquakes, epidemics, economics, climate change and terrorism lending special emphasis to Bayesian statistics and the importance to find "right" data that may not be readily available from traditional sources.[2]

Our work is in line with this recent strand of research in the field of forecasting extreme events though we do not resort to Bayesian techniques or experts' opinions. We study crisis prevention for the case of the Israeli-Palestinian conflict using both data about the relevance of premonitory political and religious events and data obtained from the web such as the international media coverage of conflict related facts. Media coverage plays a delicate role because the public opinion response and consequential political actions depend critically on whether the news is under or overly emphasized.

In this study we implement our early-warning system to the prevention of the Israeli-Palestinian conflict. Our method first identifies two main political scenarios associated with "good" and "bad" political times of low or high levels of political unrest using a hierarchical clustering technique. Then we construct a political alert index predicting the probability of the occurrence of good and bad times that can be useful as a early-warning statistical tool. We are especially interested to learn about the impact of the media coverage on the transition from a good to a bad state.

The paper is organized as follows. In section 2 we describe the Israeli strategy on Palestinian territories and its economic consequences, whereas section 3 discusses the role of premonitory events. Section 4 defines and identifies "good" and "bad" times, which are predicted in section 5. We draw some conclusive remarks in section 6.

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[2] Other recent contribution to this emerging literature include: Clauset et al. (2007), Ward et al. (2012), Brandt et al. (2011), Blair et al. (2012), Bakker et al. (2013). A general framework spanning from economics to politics and centered on game theory is provided by Bueno De Mesquita (2009).

2. The Closure Strategy to Control the Palestinian Territory

Palestine can be considered a closed economy with limited and unstable trade relationships mainly with Israel and the US. It is generally believed that the opening of the Palestinian "cul-de-sac" economy would generate long-lasting peace and economic dividends.[3] Further, a reduction of the occupation intensity would have the effect of increasing trade flows between the many enclave economies created within the West Bank by the network of military checkpoints. In peaceful periods, military control is exerted through a network of fixed checkpoints that, as reported by the World Bank (2004), limit free movements of people and goods by about half of the potential sustainable traffic in the existing road system. The United Nations Office for the Coordination of Humanitarian Aid (UN-OCHA, 2009a,d) estimates that Palestinians mobility is restricted from 41 road sections in the West Bank by a system of permanent "fixed" blocks located on the main roads. The restricted roads are major North-South and East-West transport routes reserved mainly to the movement of Israeli settlers. Palestinian drivers and commercial vehicles can apply for special permits to use these roads. In periods of political turmoil, the number of temporary "flying" checkpoints increases and can more than double in a very short period of time. In situations of "bad" political times, cargo and people movements are reduced to a minimum because of the increased number of roadblocks and longer checking times due to more scrupulous controls. The risk of losing perishable loads also increases. The scant movements tend to follow alternative, but more risky routes, of lower quality, in order to get the checkpoints around.

As a consequence of the closure regime, with security restrictions on the movement and access of Palestinian goods and people, the economic growth process is significantly affected. Between 2000 and 2002, the economy contracted by 30-35% (de Boer and Missaglia 2006). In 2004 unemployment levels reached 23%, whereas the poverty level rose substantially, with 47% of Palestinians living below the official poverty line of 2.1 USD per day as estimated by The World Bank (2004). In turn, there is a

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[3] A number of works has addressed the role of trade in promoting peace and development, see for example International Bank for Reconstruction and Development (2007), Peres Center for Peace (2007).

positive association between the growth rate of youth unemployment and the brutality and incidence of violence (Sayre, 2009; Caruso and Gavrilova 2012).

Considering more recent data, the International Monetary Fund (2012) notes that in Gaza, after a rebound in its real output by over 20 percent on average in 2010–11 following the easing of tight restrictions, growth has declined to 6 percent in the first quarter of 2012, and unemployment has risen to 30 percent from 28 percent in the same period last year. The Fund expects that with persisting restrictions, financing difficulties with aid shortfalls, and stalemate in the peace process, economic activity is likely to continue to slowdown, and unemployment to rise. Furthermore, these problems increase the risk of social unrest.

This strategic system of traffic blocks gives rise to many local enclave economies, as if they were cities under siege, leading to the economic paralysis of the whole economy. In bad political times of strict closure, the majority of Palestinian families precipitate with no type of insurance parachute in a disaster situation of hunger and abyssal poverty. This situation generates strong collective resentment and retaliation rage that perpetuates a conflictual relationship and the continuous alternating of good and bad political times as the following section illustrates.

3. Political Turmoil, Movement Restrictions and Political Relevance of Premonitory Events

After the "Six-Days" war in 1967, the Israeli authorities sought forms of integration with the Palestinian economy by expanding bilateral trade and investment opportunities. Good neighborhood relationships further improved thanks to the 1993 Oslo Accords that granted more labor mobility and freedom of movements. Greater openness contributed to growing dependence of the Palestinian economy on the Israeli's demand for goods produced mainly by the Palestinian agricultural sector, thus making Palestinians more and more vulnerable to deterioration in the political peace process. The Second Intifada in year 2000 led to the escalation of terrorist attacks against Israel and exacerbated the fragility of the Palestinian economy.[4] To prevent terrorist actions,

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[4] For an economic analysis of the second intifada see United Nations Special Coordinator in the Occupied Territories (UNSCO, 2000) and The World Bank (2003).

in 2002 the State of Israel started to construct the 703 kilometers long West Bank barrier consisting of concrete fences up to 8 meters high, located mainly on Israeli-occupied territories in the West Bank and partly along the 1949 Armistice Line, also known as the "Green Line" between Israel and Jordan, defining the West Bank boundaries, to be completed in 2010.[5] Israeli authorities also introduced more restrictive controls on commodity shipments and the mobility of Palestinian residents, both within Palestinian territories and along the borders. The barriers under military surveillance act as a filtering channel of all travel flows through checkpoints.

Figure 1 shows the fragmentation of the West Bank with the location of fixed barriers to movement in 2007 (UN-OCHA, 2008). Green circles indicate the location of the main fixed checkpoints for freight passage outside West Bank. The typology of movement restrictions may take the form of impediments to traveling as "fixed" or "flying" military checkpoints or other types of road barriers such as earth-mounds, concrete blocks, dirt piles, fences, iron gates, or trenches, in order to block access to main roads and direct Palestinian traffic towards staffed checkpoints.[6] The fixed checkpoints are military control points where a non-removable infrastructure obstructs vehicular and pedestrian traffic and the presence of Israeli security personnel is permanent. Security personnel control the official papers of individuals or trucks crossing the checkpoint and conduct searches on vehicles and belongings. The number of fixed checkpoints remains roughly the same on a yearly basis. Flying checkpoints are either operated using non-removable infrastructure while the security personnel is not present on a continuous basis or are enforced simply blocking the roads with military cars and trucks. The Israeli Defense Force changes the position of the flying checkpoints and increases the presence, depending on the level of political turmoil and strategic convenience. Massive delays and queues lasting hours are routinely reported, both at fixed and flying checkpoints as reported by the United Nations Office for the Coordination of Humanitarian Aid (UN-OCHA, 2008). In times with a frequent occurrence of bad political events, the number of flying checkpoints increases, whereas

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[5] Deterrence as a mean to prevent attacks in the Israel-Palestine conflict has been studied by Koch and Tkach (2012).

[6] The economic consequences of these restrictions have been analyzed by The World Bank (2007, 2008, 2009).

in times with a low occurrence of politically relevant events, the number of flying checkpoints is more likely to decrease, following the inertia of political events.

[Figure 1 about here]

Another potential determinant factor that may affect the transition from good to bad times is the concomitance of religious celebrations. In proximity of either Hebrew or Arabic religious feasts, social peace is traditionally more insecure than in other periods of the year and the political tension grows. To describe this effect, we generate two dummy variables for the months in which there are Israeli and Palestinian religious feasts, respectively.

We now turn our interest to the investigation of the politically relevant events that have premonitory power towards actions leading to a firmer control grip over the territory. With this objective in mind, we first collected data on the sequence of political events from the systematic reports of the Palestinian Academic Society for the Study of International Affairs (PASSIA, 2009) and the MiddEast Web Association (Middeast 2009) for the period 2000-2009. We then ranked the political relevance of the facts according to the following scale:

> ***Definition 1. Political Relevance.*** *The scale of political relevance (PR) is a categorical variable ranking in an increasing order of importance the following three events:*
>   1. *"signature of agreements or lack of success in political talks",*
>   2. *"death of political representatives or election times", and*
>   3. *"inciting behavior, terrorist attacks, military attacks, or actions of land occupation".*

The Political Relevance scale monotonically increases with the number of casualties, which are positively correlated with the degree of political upheaval. The events that do not belong to any of the categories above are judged as politically irrelevant. We reasonably expect that the control over the territory, through

movements' restrictions, increases as the political relevance of a premonitory event, both at the national and international level, also increases.

Figure 2 shows the evolution of the number of flying checkpoints in the West Bank in relation with the occurrence of political events. Inspection of the figure reveals that before the start of the Second Intifada during June and July 2000, there was a sharp and sustained increase in the number of flying checkpoints on the Palestinian roads, with a peak of 914 units. The Second Intifada registered the loss of hundreds of human lives and is therefore ranked 3 on the PR scale. Similarly, before starting the "Defensive Shield" operation in the West Bank in March 2002 - an event also ranked 3 on the PR scale - the Israeli Defense Force increased the number of flying checkpoints by more than 100 units in a month. When Haifa was bombed in July 2006, the Israeli Defense Force increased the number of controls on the Palestinian roads from 600 to almost 900 in a single month. Interestingly, this practice was not implemented during the Gaza War operation "Cast Lead" in December 2008, when the number of flying checkpoints in the West Bank remained at the level of 300. This was partly due to the fact that the Palestinian Fatah party, popular in the West Bank, maintained good relationships with Israel, while dissociating from the extremist ideas of Hamas leaders in Gaza. On the other hand, the limited impact on the number of flying checkpoints was also dictated by military convenience. In general, the occurrence of relevant political events have been positively and significantly correlated with the number of flying checkpoints in the West Bank during the last ten years (0.81), except for 2008 and 2009, when there is a negative correlation of -0.46 between the number of checkpoints and the PR scale.

In line with this evidence, we now proceed to identify "good" and "bad" times supposing that "good" political times are not positively associated with the periods of political turmoil and religious feasts and that the number of flying checkpoints is relatively lower in each region of the West Bank.

[Figure 2 about here]

4. Identification of "Good" and "Bad" Times

To identify Good and Bad times in a statistically robust way we implement a cluster analysis that uses Ward's agglomerative linkage method to create hierarchically related sets of clusters. We include as covariates the PR scale expressed in three categories as defined above, the dummies associated with religious celebrations in Israel (irelig) and Palestine (prelig), the total number of flying roadblocks in the West Bank (flywb) and the number of flying checkpoints in each of the 11 governorates of the West Bank (fly0-11) (PALTRADE 2009, UN-OCHA 2009a,d). The linkage function specifying the distance between two clusters is computed as the increase in the "error sum of squares" after fusing two clusters into a single cluster. Ward's method joins the two groups that result in the minimum increase in the error sum of squares.

Results are presented in Table 1 showing that these two states of the nature exhibit significantly dissimilar characteristics. We test various hypotheses on the data self-clustering in one, two, three or four clusters. The highest value of the Calinski-Harabasz F-test (151.35) is obtained in correspondence of only two clusters, indicating that data can be optimally divided in two groups. Optimal clustering is obtained when deviation from the within group average is minimum and the deviation from the between groups averages is maximum. A robust classification of groups must contain "homogeneous" information within them and be "dissimilar" between them. In our case, the coefficient of dissimilarity between groups obtained from dendrogram of latent analysis is very high (about 5×10^{6}).

The hierarchical cluster analysis clearly identifies two classes of months, the good and bad ones, associated with the symptoms described by the political relevance of events caused by the Israeli-Palestinian frictions, the concomitance with religious celebrations and the presence of roadblocks in each governorate and in the whole Cis-Jordan.

[Table 1 about here]

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Definition 2. Good and Bad Political Times. *The dichotomous classification of each month in "good" or "bad" period is the outcome of the hierarchical cluster analysis.*

During the decade under study, as shown in Table 2, the transition between good and bad periods occurs 8 times. Out of the 120 months considered, the cluster assigns a month to a good period in 48% of the cases. The "good" period persisted in the following year 44 times, while the "bad" period 49 times. Inspection of Figure 3 reveals that the period of transition did not last more than three months in about half of the transition points. In correspondence of these relatively fast turning points, the number of flying checkpoints is relatively lower than in bad intervals.

In months classified as relatively more peaceful, the events are relatively less relevant, it is less likely that religious feasts are celebrated and the number of roadblocks is comparatively lower. In bad months, the closure regime becomes stricter as clearly shown in figure 3 reporting the variation of the total number of flying check points in the West Bank between year 2000 and 2010. Table 3 shows how flying checkpoints within each governorate varies in good and bad political months. As expected, during bad political times, the number of flying checkpoints in the West Bank increases from 313 to 585 on average per month. The difference between the number of flying checkpoints in good and bad times is statistically significant in all governorates with the exception of Ramallah, Jericho and Tulkarm.

[Table 2 and 3 about here]

In terms of economic effects, bad times impact significantly on both the output and the bilateral trade of each economy: the yearly GDP drops by 6% in Israel and by 18% in the West Bank and Gaza in bad times compared to good times. In bad times, trade between the West Bank and Israel decreases sharply, since the Israel's demand for Palestinian imports decreases by 53% in favor of alternative partners such as the United States and Europe. The Palestinian economy also redirects exports to partners as the United States and other Arab countries, even if at a much smaller scale. Palestinian

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exports towards the United States increase by 68% in bad times compared to good times. In bad times, social conditions of the population deteriorate and the level of political alert is relatively higher.

Our next objective is to forecast the probability that bad times occur in order to derive a dichotomous index of political alert as a function of a set of covariates of interest.

5. **Prediction of Good and Bad Times: a Political Alert Index**

The number of injuries and fatalities in the West Bank has been positively correlated with the ferment of the political situation, as confirmed through numerous reports of UN-OCHA (2009a,b), the Palestinian Trade Association (PALTRADE, 2007, 2009), and the B'tselem Association (2009). The correlation between the monthly total number of injuries (total number of Israeli and Palestinian people injured) and the Political Relevance scale is 0.24. There is a positive and statistically significant association also between the media coverage and the number of Israeli injuries at checkpoints (0.28) or deaths in open conflicts in the West Bank (0.27). The correlation between the Palestinian victims of attacks at checkpoints and the media coverage is negative (-0.14), while the correlation between Palestinian fatalities in open conflicts and the media coverage is positive (0.20). Media treats the impact of either an Israeli or a Palestinian fatality in open conflicts symmetrically, though it is important to underlie that the ratio of Israeli to Palestine fatalities is about 2:50. Regarding victims at checkpoints, it seems that an Israeli victim receives significantly more attention than a Palestinian one. Figure 4 shows the relationship between the occurrence of politically relevant events (PR), the number of Palestinian fatalities and the international media coverage of the Israeli-Palestinian conflict.

[Figure 4 about here]

We collected information concerning the monthly evolution of political and economic indicators in Israel and West Bank and Gaza during the past ten years, from January 2000 to December 2009, for a total of 120 observations. We describe the

evolution of the events characterizing the Israeli-Palestinian political scene by a set of variables consisting of the number of declared curfew hours, the number of injuries and victims from open conflicts in both Israeli and Palestinian side, the number of Palestinian prisoners, the number of Palestinian ruined residences and the effective number of homeless people. The intensity of political ferment and its international relevance has been captured measuring the media coverage in terms of number of articles published by "The New York Times" newspaper concerning the Israeli-Palestinian issue. We assume that there is almost no lag between the event and the media reports because of the high speed of modern communication networks and the diffused supervision of international observers spread over the territory. On the other hand, events may be under or over-reported so that the direction of the impact generated by the intensity and tone of the media coverage on people sentiments often cannot be clearly anticipated.

Table 4 reports the summary statistics by "good" and "bad" times of the variables included in the Probit estimation using maximum likelihood and robust standard errors. Inspection of the table reveals that the number of curfew hours is about 50% larger in good rather than in bad periods. On the other hand, the number of Palestinian victims at checkpoints increases sharply in bad times, while the number of Israeli injuries does not change significantly in average across periods. In good times, the number of prisoners is at the mean about 25% higher than in bad periods. The number of house demolitions and homeless people in Palestine almost doubles in bad times. During bad times the attention of worldwide media also increases. The "New York Times" Journal writes on average 68% more articles on the Israeli-Palestinian issue in a bad political month as compared to a good period.

[Table 4 about here]

The estimates of the Probit estimation along with the robust standard errors are presented in Table 5. Our method warns that bad times are positively and significantly associated with the number of Israeli victims at the checkpoints, the number of homeless or injured Palestinians and with the number of demolitions. The number of

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Palestinian victims at the checkpoints does not have a significant impact, while the number of Israeli victims at checkpoints is positively and significantly associated with the probability of bad times almost at the 1% significant level. The number of Palestinian prisoners and injured Israelis show a negative and highly significant association. Media coverage is positively and significantly associated with the transition to bad times at the 6% significance level, but is not as statistically significant as the other factors. The proposed political alert index gives a correct prediction in 25% of the cases.

[Table 5 about here]

6. Conclusions

This study presents a statistical method that can be used as an alert system to effectively prevent social crises. We implement our method to the case of the Israeli-Palestinian conflict. The cluster analysis based on the evolution through time of flying roadblocks, the occurrence of politically relevant events and religious festivities clearly identifies two main scenarios associated with good and bad political times. Our method warns that bad times are positively and significantly associated with the number of Israeli victims at the checkpoints, the number of homeless or injured Palestinians and with the number of demolitions. The number of Palestinian prisoners and injured Israelis negatively affect the probability of occurrence of a bad time. Media coverage is positively and significantly associated with the transition to bad times, but is not as statistically significant as the other factors. In general, our results show that our statistical tool can be a reliable method for early warning and prevention of social crisis and can be effectively replicated to other social crisis situations.

The quality of the prediction can be enhanced if the quality of "right" non-orthodox data also improves and more sophisticated statistical techniques are applied that deal with latent information or stated opinions. However, a reasonably acceptable predictive model, especially for rare events of large social consequences, can be improved if it is maintained through time and many scientists contribute to its refinement. It is for this reason that urges to institutionalize permanent think tanks constructing country-

specific databases, designed with a modern view, which can be analyzed on a continuous basis to better protect people involved in critical social crises.

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Figure 1: Fragmentation of the West Bank. UN-OCHA map (2008) with the location of fixed barriers to movement in West Bank. Green circles indicate the location of the main fixed checkpoints for freight passage outside West Bank.
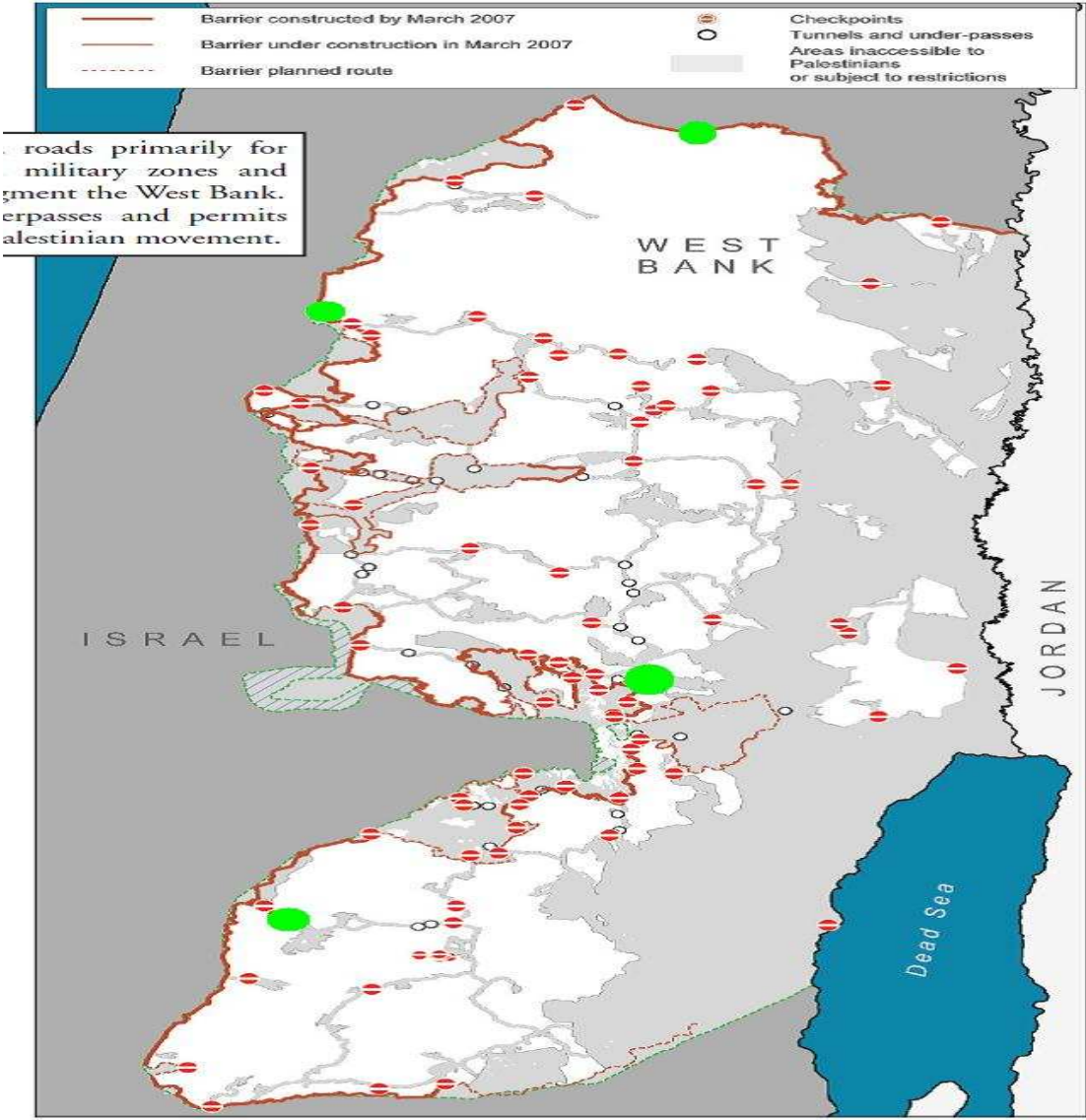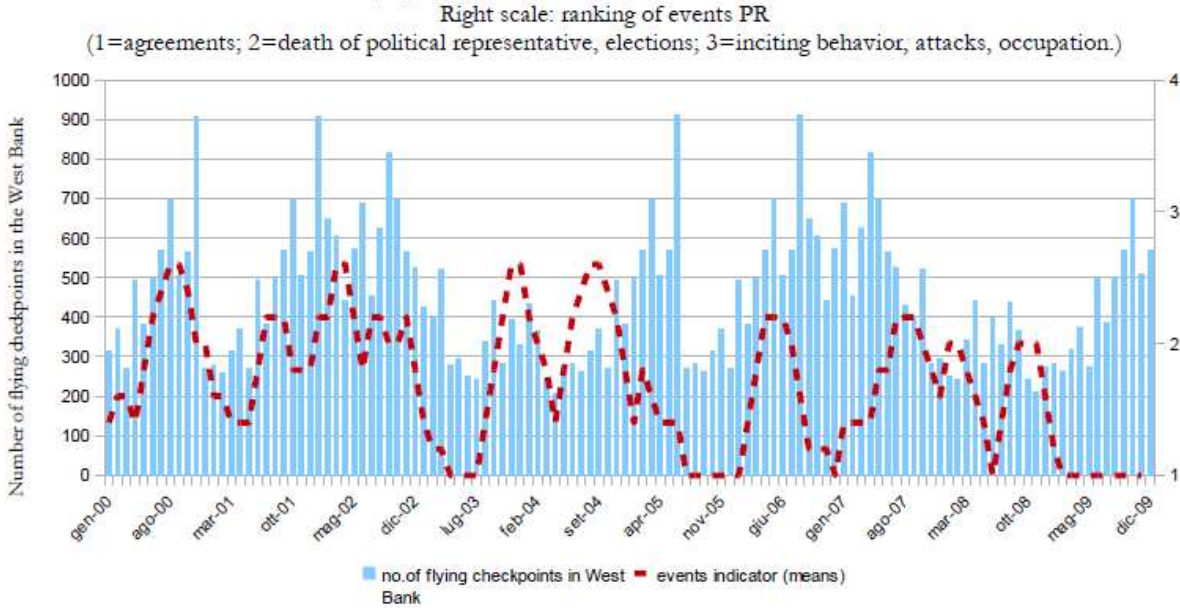
Figure 2: Relationship between the ranking of events in terms of Political Relevance (PR) and the number of flying checkpoints in West Bank (monthly data from 2000 to 2009)

Right scale: ranking of events PR
(1=agreements; 2=death of political representative, elections; 3=inciting behavior, attacks, occupation.)

Sept-2000	Palestinians start riots after Ariel Sharon's visit to Temple Mount
Oct-2000	Second Intifada starts
Sept-2001	Terror attacks on U.S. World Trade Center (Al-Qaida);
Mar-2002	Israel starts "defensive shield operation" in West Bank
Apr-2002	Jenin battle
May-2002	Church of Nativity in Bethlehem sieged
Nov-2004	PA President Yasser Arafat dies
June-2005	Violence flares in Gaza
July-2006	Hezbollah attacks on Israel (in Haifa)
Feb-2008	Suicide bombers and rockets from Gaza
Dec-2008	Gaza War, operation "Cast Lead" started

Table 1: Hierarchical Cluster Analysis grouping Good and Bad months (0 good times, 1 bad times)

Number of groups using latent groups method	2
Dissimilarity between groups (dendrogram of latent analysis)	5×10^6
No. of Calinski-Harabasz Clusters (corresponding to max. F-test)	2
Value of Calinski-Harabasz (F-test)	151.35

Table 2. Transition probabilities

	Good (0)	Bad (1)	Total
Good	44	8	52
0	84.62	15.38	100
Bad	9	49	58
1	15.52	84.48	100
Total	53	57	110
	48. 18	51.82	100

Figure 3. Evolution of the monthly normalized average of flying checkpoints in the period 2000-2010 by "good" (0) and "bad" times (1)
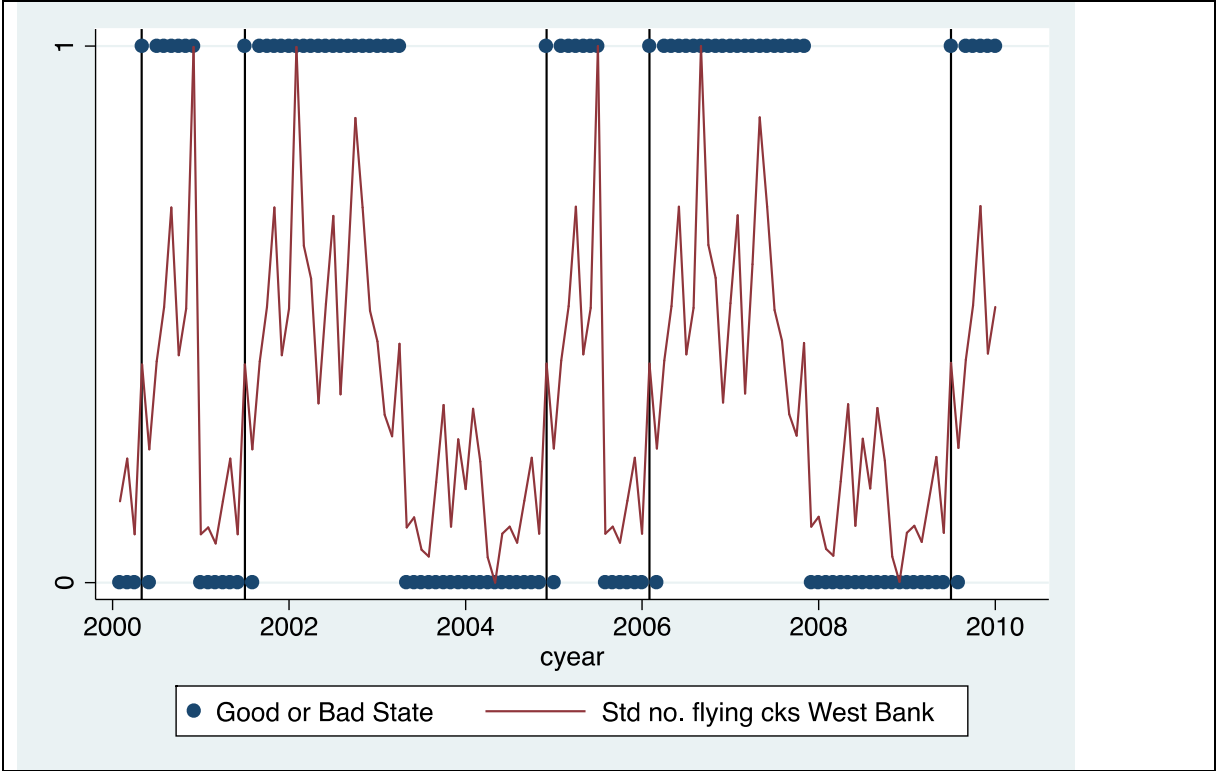
Table 3: Military Flying Checkpoints- Summary Statistics in Good and Bad Times

Variable	Definition (monthly)	Good time prob=48%	Bad time prob=52%	Full dataset (120 obs) Mean	S.D.
flyWB	no. of flying checkpoints in WB	313.24	584.82	453.55	168.84
fly0	no. of flying checkpoints in Jerusalem	9.86	26.61	18.51	18.90
fly1	no. of flying checkpoints in Nablus	30.48	46.72	38.87	30.23
fly2	no. of flying checkpoints in Jenin	19.50	78.69	50.08	43.69
fly3	no. of flying checkpoints in Tubas	13.93	18.66	16.37	10.07
fly4	no. of flying checkpoints in Qalqilya	62.22	120.43	92.30	43.96
fly5	no. of flying checkpoints in Salfit	19.55	27.11	23.45	13.08
fly6	no. of flying checkpoints in Ramallah	13.41	15.54	14.51	16.74
fly7	no. of flying checkpoints in Hebron	83.51	106.38	95.33	38.59
fly8	no. of flying checkpoints in Jericho	3.00	4.06	3.55	5.98
fly9	no. of flying checkpoints in Bethlehem	41.39	86.03	64.45	35.72
fly10	no. of flying checkpoints in Tulkarm	42.08	34.67	38.25	24.45

Figure 4. Relationship between the ranking of events PR, the number of fatalities and media coverage measured as the number of articles published in "New York Times" newspaper (monthly data 2000-2009)
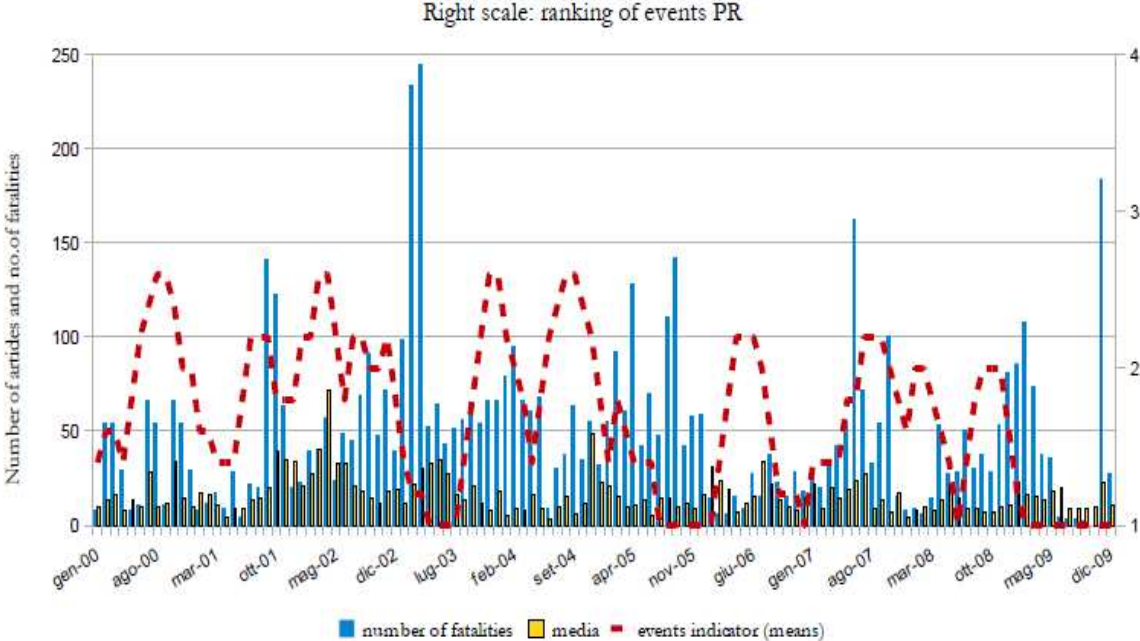
Sept-2000	Palestinians start riots after Ariel Sharon's visit to Temple Mount
Oct-2000	Second Intifada starts
Sept-2001	Terror attacks on U.S. World Trade Center (Al-Qaida);
Mar-2002	Israel starts "defensive shield operation" in West Bank
Apr-2002	Jenin battle
May-2002	Church of Nativity in Bethlehem sieged
Nov-2004	PA Presid.Yasser Arafat dies
June-2005	Violence flares in Gaza
July-2006	Hezbollah attacks on Israel (in Haifa)
Feb-2008	Suicide bombers and rockets from Gaza
Dec-2008	Gaza War, operation "Cast Lead" started

Table 4. *Summary Statistics by Good and Bad Times*

Variable	Definition	Good time prob=48%	Bad time prob=52%	Full dataset (120 obs.)	
				Mean	S.D.
Curfew	no. declared curfew hrs/month in WB	138.65	89.92	113.47	112.93
Pfatc	no. Palestinian victims at cks in WB	0.83	0.34	0.58	1.19
Ifatc	no. Israeli victims at cks in WB	3.5	6.44	5.02	8.43
Injurp	no. injured Palest. in WBGS				
Injuri	no. injured Israeli in WBGS	623.16	540.39	580.37	724.63
Prison	no. Palestinian prisoners	6372.74	5148.34	5740.13	2518.51
Pruins	no. house demolitions/month in WB	10.19	17.65	14.04	14.24
Homeless	no. homeless Palestinians in WBGS	51.60	91.92	72.43	99.28
Media	no. of articles published on New York Times on the Israeli-Palestinian conflict	13.32	19.58	16.56	10.07

Key: WBGS - West Bank & Gaza Strip, WB West Bank

Table 5. The Political Alert Index: prediction of good/bad times Probit estimates

Good/Bad times	Definition	Coef.	Robust Std. Err.	P>|z|
mean	No. Articles in New York Times	.0335	.0176	0.058
curfew	No. Curfew hours per month	-.0046	.0015	0.002
Pfatc	No. Palestinian victims at cks in WB	-.1812	.1243	0.145
Ifatc	No. Israeli victims at cks in WB	.0553	.0237	0.020
homeless	No. People homeless in WB & Gaza	.0045	.0017	0.008
prison	No. Palestinian prisoners	-.00014	.00006	0.012
Pruin	No. Demolitions in WB	.0249	.0112	0.026
Injuri	No. Injured Israeli in WB & Gaza	-.0011	.0003	0.000
injurp	No. injured Palest. in WB & Gaza	.0022	.0010	0.030
constant	Constant	.1003	.5623	0.858
No. Obs. 120 – Log Likelihood -52.06, Pseudo R2=0.363				