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Economics of Terrorism

The cycle of violence?

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Introduction:

The following paper will present the article: “*The Cycle of Violence? An Empirical Analysis of Fatalities in the Palestinian-Israeli Conflict*” by David A. Jaeger and M. Daniele Paserman which was published in the American Economic Review in 2008. The American Economic Review is a “general-interest economics journal” (American Economic Association, 2016). The focus of this paper will be the summary of the intention and the fundamental arguments of the article.

The basic idea of the article is to examine whether the conflict between Israel and Palestine can be considered a cycle of violence or not. A cycle of violence in this context would be an even “tit-for-tat” (Jaeger and Paserman, 2008, p1598) pattern of actions. In particular, the symmetry of actions will be analyzed based on the number of fatalities each side has suffered. In order to do that an econometric model was evaluated and presented in the article; it shows that the conflict between Israel and Palestine is based on a highly unfair power distribution. While the Israeli are able to use their high developed army to react on Israeli fatalities, Palestine is hardly able to react on the same level to Palestinian fatalities due to lower military efficacy. The concrete reasons, calculations and numbers, which support this statement will be explained later in this paper.

Analysis of the article:

Before starting the analysis, it is useful to understand the structure of the article.

Besides, the common division of articles into an introduction, body and conclusion the authors subdivided the body into five sections. Following the introduction including the explanation of the topic and presenting the state of art the subdivided body sections are presenting an econometric model, its results, influencing factors and a brief discussion. Finalized is the article by a conclusion.

In the following, the article will be summarized. In their introduction the authors recognized the lack of data on strategic choices of the two parties and are trying to tackle that problem by analyzing daily-frequency data during the second Intifada (Jaeger and Paserman, 2008). The second Intifada is the conflict between Israel and Palestine, which broke out at the end of September 2000 and was interrupted by a ceasefire in the beginning of 2005, which marks the end of the observed period (BBC News, 2016).

Despite the ceasefire both sides still count many fatalities. Until 2007 more than 4100 Palestinians and more than 1000 Israelis lost their lives (Jaeger and Paserman, 2008). The conflict has often been characterized as a cycle of violence because violence by one side is seemingly leading to violence used by the opponent side in answer. The focus of former examinations was “whether military operations are effective and whether their timing is chosen strategically” (Jaeger and Paserman, 2008, p1591) but there has been little empirical data to check this hypothesis.

Jaeger and Paserman (2008) are trying to explicitly tackle the issue of lacked data and use “the daily number of deaths on both sides of the conflict from September 2000 to January 2005” (Jaeger and Paserman, 2008, p1591) to find out “whether the pattern of violence in the conflict should indeed be characterized as a cycle, in which violence by one party causes violence by the other party, and vice versa, or whether causality is unidirectional“(Jaeger and Paserman, 2008, p1591).

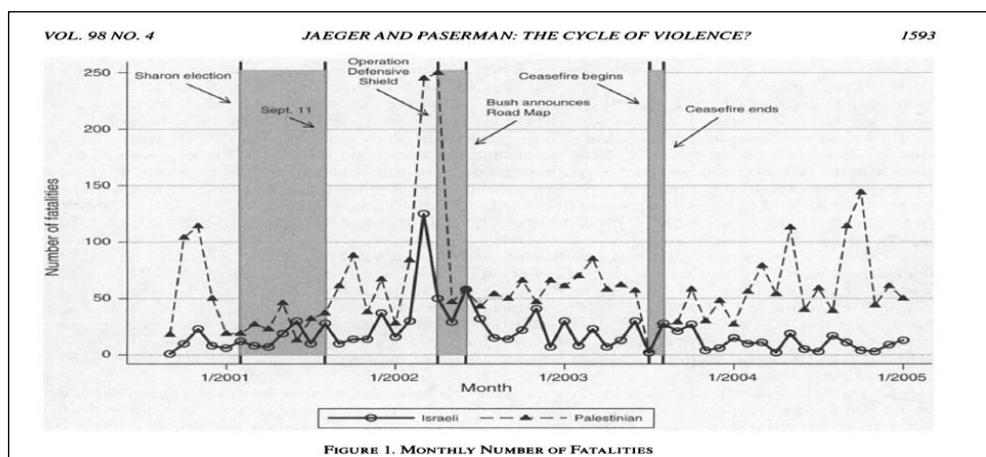
These two direct quotes demonstrate the aim of the analysis visual and can be seen as research hypothesis. In addition to their hypothesis the two economists describe the pattern of violence asymmetric and do not believe that it is logical to call the pattern of actions a cycle (Jaeger and Paserman, 2008). To explain this they find that the direction of causality “runs only from violence committed by Palestinians to violence committed by Israelis, and not vice versa” (Jaeger and Paserman, 2008, p1591). More specific, the authors show that there is little evidence that Israeli fatalities are an answer to Palestinian fatalities while there is evidence to prove that Palestinian fatalities can be seen as a counterattack to Israeli fatalities (Jaeger and Paserman, 2008).

After presenting the main content of the introduction, the following will describe the content of the main body.

In the first part of their main section the authors reconstruct the second Intifada by outlining five main-events of the conflict (Jaeger and Paserman, 2008). All of these described five events are pictured in the figure (shown on the next page): “Figure 1. Monthly Number of Fatalities” (Jaeger and Paserman, 2008, p1593) and are related to the number of fatalities on exactly the date the events took place. The time is shown on the abszissa, the number of fatalities on the

ordinate. The data-points on the abszissa mirror every month from September 2000 to January 2005, which makes a total number of 53 Data-points. All of the data-points are connected in order to generate a multiple-line-graph containing two lines; one line-graph for the Israeli fatalities and the other illustrating the Palestinian fatalities. Specially tracking attraction is the fourth event on which both line-graphs reach their peak: Operation Defensive Shield on March 29, 2002, where around 50 Israeli and 250 Palestinians lost their lives (Jaeger and Paserman, 2008).

In total, one observes that the quantity of fatalities is very different. The Palestinians lost three times more people than the Israeli: while the number of fatalities on the Israeli side is 994, Palestine lost 3.244 men. This factor gets visualized by the line-graphs: except for one month (June 2001) the line-graph showing the Palestinian fatalities is always higher than the Israeli one, which means that except for June 2001 there was no month where Israel recorded more deaths than Palestine. These numbers are already showing the imbalance between the two parties and get illustrated well by the figure (Jaeger and Paserman, 2008).



The second part of the articles main body is focusing on the theoretical and empirical framework.

The authors introduce three main factors of violence, which may lead to a cycle of violence. The first is the incapacitation effect: This strategy focusses on limiting the effect of the other side's reaction for example by killing key figures of them. The second effect is described as deterrent effect where the attacked side refrains from using further violence in order to prevent themselves from repeated violence against them. The vengeance effect is listed as third here, it describes the wish of revenge as reaction to suffered violence. (Jaeger and Paserman, 2008)

In order to support the effects and assumptions, the authors came up with empirical reaction functions for both sides and worked out a vector auto regression framework. The basic idea of the reaction functions is to show how the number of own fatalities impact the number of fatalities caused by oneself in reaction (Jaeger and Paserman, 2008). They explain the capability of one side to execute attacks in ratio to the violence they suffered from. The reaction functions are a highly important component for the whole analysis and will be explained more detailed in this paper later on.

The important outcome while looking back at the three effects listed earlier is the signs of the coefficients. They show whether the first two or the third effect is dominant.

In order to test their primary focus, whether fatalities on the one side cause fatalities on the other (and their ratio), Jaeger and Paserman (2008) use a causality test. The test explains that a variable X does not Granger cause Y, if "lagged values of Y, lagged values of X have no predictive power for the

current value of Y” (Jaeger and Paserman, 2008, p1594).

In addition to this explaining the authors mention that it is necessary to question if the Granger test is interpretable. As a matter of fact, it might be possible that the disturbance term for one side’s fatalities might be correlated with previous fatalities of the other side (Jaeger and Paserman, 2008). The reason for this statement is the power of randomness and their might be some factors which influence the values. An example could be that suicide bombers enter an empty bus instead of a full one, or an assassinations target sits in the wrong car. All these factors do imply that an act of violence had happened but might not result in fatalities and therefore not be pictured in the statistical data used in the regression.

In the further analysis the authors get more detailed and present in the third part of the articles body: “nonparametric impulse response functions for both sides” (Jaeger and Paserman, 2008, p1595) and explain how they used them.

The calculation is divided into three parts and will be sampled for the Israeli response functions: first the number of Palestinian fatalities is calculated t days after a day where at least one Israeli fatality is listed. Then they subtract the overall mean of Palestinian fatalities and divide in the third step the result of the first two steps by the average number of Israeli fatalities on days with Israeli fatalities. The result is the Israeli Response Function which describes “the excess number of Palestinian fatalities t days after a Palestinian attack, per Israeli fatality” (Jaeger and Paserman, 2008, p1593). The Palestinian impulse response function is calculated the same pattern. The empirical impulse response functions are shown in 95% confidence bands (Jaeger and Paserman,

2008) and their difference could not be more conspicuous. While the Israeli response function is statically relevant the first ten days, the Palestinian is it never. Moreover the Israeli response function “is above mean for the first 38 days after a day with Israeli fatalities” (Jaeger and Paserman, 2008, p1595) and in total the magnitude of the Israeli response is 15 times larger for all shown lags (on average)¹.

In addition to the figures described, the authors added a table which mirrors “the coefficients of the Israeli and Palestinian reaction function, estimated from a VAR [Vector Auto Regression] model with 14 lags” (Jaeger and Paserman, 2008, p1595). The first thesis the authors are generating out of the data is that the results of the daily reaction functions are indicating that Israel is acting in a “statistically significant and regular way after Palestinian attacks” (Jaeger and Paserman, 2008, p1598). The positivity of the coefficients shows that the Palestinians are not able to generate a deterrent or incapacitation effect. In addition to these observations, the authors refer to their main focus: to check the conflict on Granger causality and explain that there is evidence to prove “that fatal Palestinian attacks Granger-cause an Israeli response leading to the death of Palestinians” (Jaeger and Paserman, 2008, p1598).

While the authors highlighted this important causality, they do not verify the assumption that Palestinians are responding to Israeli attacks. This result is bonded to the fact that the p-values are significantly higher than usual and the coefficients are small, statistically irrelevant and positive. The positivity shows

¹ The described results are pictured in two figures and attached as “Appendix A”

that Israeli actions do not generate a deterrent or incapacitation effect. (Jaeger and Paserman, 2008)

In conclusion of these statistical results, it is important to keep in mind that there is no evidence that Palestine answers to Israeli violence, but Israel is reacting with violence to Palestinian violence (Jaeger and Paserman, 2008).

Besides the calculations it is important to check the robustness of the econometric model the authors used. Critique is that the results on Granger causality may be influenced by independent variables and the lagged values of the dependent variable. In order to check that, the authors came up with a new test including the length of separation barrier, day-of-week and period indicators for a variety of combinations of day lag structures (Jaeger and Paserman, 2008). As a result, the test shows that there is no evidence that the author's hypothesis: there is a "lack of Palestinian response to Israeli violence" is effected by the choice of lag structure. To strength the hypothesis the authors also present the "Granger causality statistics from the Israeli and Palestinian reaction functions estimated at" a variety of frequencies. And also this test proves the fact that „Israeli violence does not Granger-cause a Palestinian response”.

Besides the described prove of the statistical findings that Palestine do not react to Israeli violence, the authors came up with another explanation for the lacked reaction: Palestine tries to react, but is unable to do so. The reason for their failure is explained as Israeli Preventive Measures (Jaeger and Paserman, 2008). Israel is more frequently building roadblocks, increase their security forces at crowded areas and establish many more measures that can ensure a

higher level of security. In order to prevent the measures from distorting the calculation too strong, the authors include them in the regression. The data for this addition is offered by the United Nations Office for the Coordination of Humanitarian Affairs (Jaeger and Paserman, 2008). They published reports on restrictions to movement at each checkpoint in the West Bank and Gaza. In order to use the data the authors have valued each checkpoint (on daily basis) from 1 (= completely closed) to 5 (= completely open). Jaeger and Paserman then “calculated for each day the fraction of checkpoints that were completely closed, and used that as our measure of Israeli vigilance” (Jaeger and Paserman, 2008, p 1600). The new component showed that often a checkpoint was completely closed, which leads to the assumption that Palestinians were indeed often anticipated by the high security measures of the Israeli. Moreover the closing of the checkpoints was often related to lagged Palestinian fatalities. This could mean that Israel does imply higher security measures after inflicting Palestinian fatalities. Summarizing this new factor of Israeli preventive measures it is showing that once Israel attacked Palestine, Israel establishes higher security measures to prevent Palestinian counters and hence Israeli fatalities.

In order to examine whether the Israeli preventive Measures do influence the Palestinian reaction function or not, the authors tested the incidence specification and the number of Palestinian and Israeli fatalities in relation to the before calculated value of the checkpoints. The results seem misleading because they imply that the closing of the checkpoints result in a higher number of Israeli fatalities. But the authors explain that the not given Granger causality is not altered. They suspect “any potential endogeneity bias (...) [to

be very small] and cannot account for the lack of an estimated Palestinian response to Israeli violence” (Jaeger and Paserman, 2008, p 1601). The authors defuse with this sentence the bias on the Palestine reaction function caused by Israeli preventive measures.

Before starting the last section of the main body the authors lead the reader’s attention into an interesting direction: They mention that the whole analysis has only been based on happened fatalities and did not take any nonlethal activity by the Palestinians in account (Jaeger and Paserman, 2008). Many of the planned attacks by the Palestinians were prevented by the Israeli Defense Forces and this fact could change the direction of causality, because Palestinians might have tried to react but did not succeed. So, the authors did tests with variables like ‘planned attacks of the Palestinians’ and ‘intercepted suicide bombings’ and came to the result that there is “no effect of lagged Palestinian fatalities on the level of Palestinian violence” (Jaeger and Paserman, 2008, p1601).

In the last part of the main body: the “Discussion” the authors try to analyze the asymmetry between the two parties. One reason for the asymmetry are the different kind of capabilities. While the Israeli Defense Force is a high developed army, the Palestinians do not have any comparable logistics, technology or organization(Jaeger and Paserman, 2008). Concluding, it seems like Palestine is not able to attack Israel on the same level Israel attacks Palestine. It is a likely idea that Israel is planning strategic strikes against Palestine and Palestine tries to counter for revenge. Moreover, Palestine does not seem to attack Israel strategically, which is proven by the fact that there can

no relation between past Israeli violence and direct answer by Palestine be found. In addition, Palestine might execute their attacks randomly on purpose, because of the worse attacking capabilities they have to compensate for.

The authors use the end of the main body to summarize the results of the analysis. They use all the calculations made, to line out a major point: The ratio of fatalities between Israel and Palestine and vice versa (Jaeger and Paserman, 2008). The results are a clear statement to show the balances: While one Palestinian fatality raises the number of 0.25 Israeli fatalities, one Israeli fatality raises 2.19 Palestinian fatalities. The almost ten times higher number verifies the assumption that the balance of power is not equally distributed and the conflict cannot be seen as a cycle of violence.

Concluding the article, Jaeger and Paserman (2008) are emphasizing that the widely shared thinking of the Israel Palestine conflict as a “tit-for-tat” violence cannot be verified by the statistics. Indeed, the Israeli Defense Forces act in a predictable and statistically significant way, while the Palestinian attacks are not related to Israeli attacks.

Conclusion:

As a final point, the main thesis is examined well and can be answered. The conflict can neither be seen as a cycle of violence nor as an symmetric tit for tat of attacks. While the Israelis are able to use their military methods to attack the Palestinians, the Palestinians as military inferiors are not able to interact on the

same level. In fact, the asymmetry is very visual: while Palestine is only being able to answer to a Palestinian fatality with 0.25 Israeli fatalities, Israel can answer to an Israeli fatality with 2.19 Palestinian fatalities.

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Appendix:

Appendix A: Figure 2A/2B Empirical Israeli Response Function

Source Authors' calculations from B'Tselem data, from 29 September 2000 to 15 January 2005 (Jaeger and Paserman, 2008, p1596)

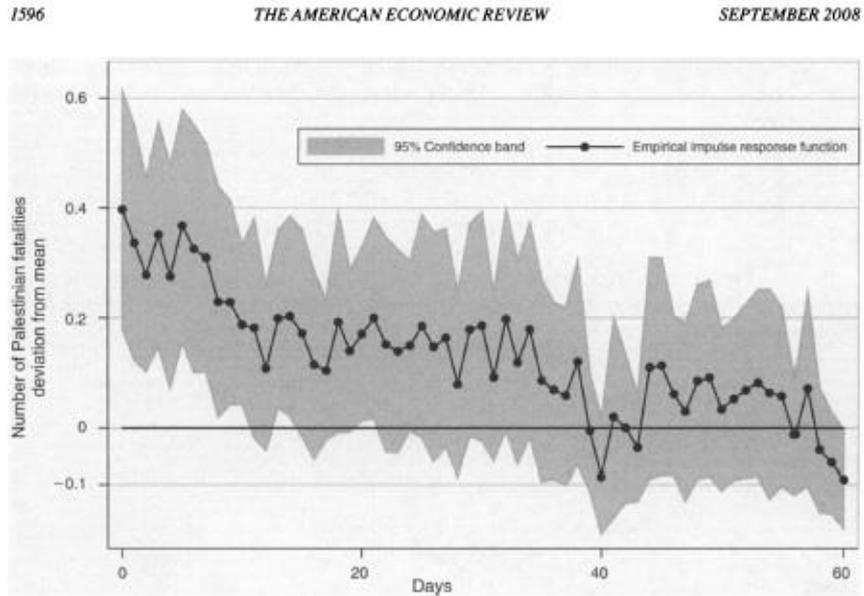


FIGURE 2A. EMPIRICAL ISRAELI RESPONSE FUNCTION

Source: Authors' calculations from B'Tselem data, from 29 September 2000 to 15 January 2005.

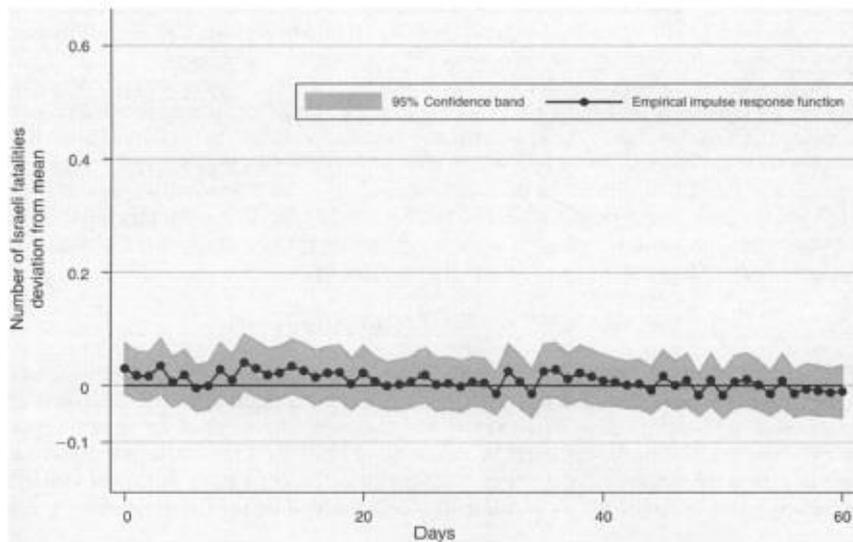


FIGURE 2B. EMPIRICAL PALESTINIAN RESPONSE FUNCTION

Source: Authors' calculations from B'Tselem data, from 29 September 2000 to 15 January 2005.