LBA: DECISION MEMO

To Volha Charnysh and Evgeny Finkel

From Viet Hoang Tran Duong and Joshua Yue, Undergraduate at Minerva Schools at KGI

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Subject Evaluating the political effect of wartime property transfer

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Executive Summary

In a recent study, Charnysh and Finkel (2017) employed a quasi-binomial model to estimate the political effect of wartime property transfer by using Treblinka as a case study. After using a quasi-binomial model, the authors found wartime property transfers do affect voting behavior. But we contend that this study has significant flaws and should not be used for accepting the impact of wartime property transfer on voting behavior. We use genetic matching to achieve improved matches with reduced covariate imbalances. We find a statistically insignificant and small impact of wartime property transfers on voting behavior. We illustrate that model dependency is a serious issue in accessing the impact of wartime property transfer on voting behavior and recommend that reducing model dependency (via matching) should be a guide to delivering reliable causal inferences.

Background

Does mass violence, through property transfer, impact political views? In their paper "The Death Camp Eldorado: Political and Economic Effects of Mass Violence," Charnysh and

Finkel suggest that benefitting from Jewish wealth made the German population more sympathetic to anti-Semitism as a means to preserve their new possession (Charnysh & Finkel, 2017).

In the 2001 parliamentary election, on the Jedwabne issue, the main choice was between a limited remuneration to Jews who had their property seized**,** pushed forth by the Prawo i Sprawiedliwosc (PiS), and a denial of any compensation, advocated by the anti-Semitic Liga Polskich Rodzin (LPR) (Charnysh & Finkel, 2017). Hence, the authors view a vote for the LPR as a means to retain the material status quo and a vote for PiS as a form of acceptance of the Poles' wrongdoings (Charnysh & Finkel, 2017).

As a case study, they measured the long-term effects on the surrounding communities of the Nazi death camp Treblinka in Poland (Charnysh & Finkel, 2017).

Charnysh and Finkel's Methodology and Findings

Charnysh and Finkel (2017) argue the Treblinka area provided a unique opportunity to assess the impact of violence-related property transfer because of the "exogenous placement of the death camp" and population stability during and after WWII (Charnysh and Finkel, 2017).

According to Charnysh and Finkel's quasi-binomial model, the logarithm of Distance to Treblinka is the primary factor that influences people's voting behavior (as represented in the share of LPR vote). The authors claim that constraining the sample to communities within a

50-km radius of Treblinka offers the best study for evaluating the political effects of property transfer: restricting the radius to 50-km allows for controlling important covariates, such as regional histories (Charnysh and Finkel, 2017).

Using a quasi-binomial model, Charnysh and Finkel (2017) estimate the coefficient on Distance to Treblinka on voting behavior. The authors posit that the negative trend between the logarithm of Distance to Treblinka and share of LPR vote (as seen in Figure 1) support their argument for a political effect of wartime property transfer.

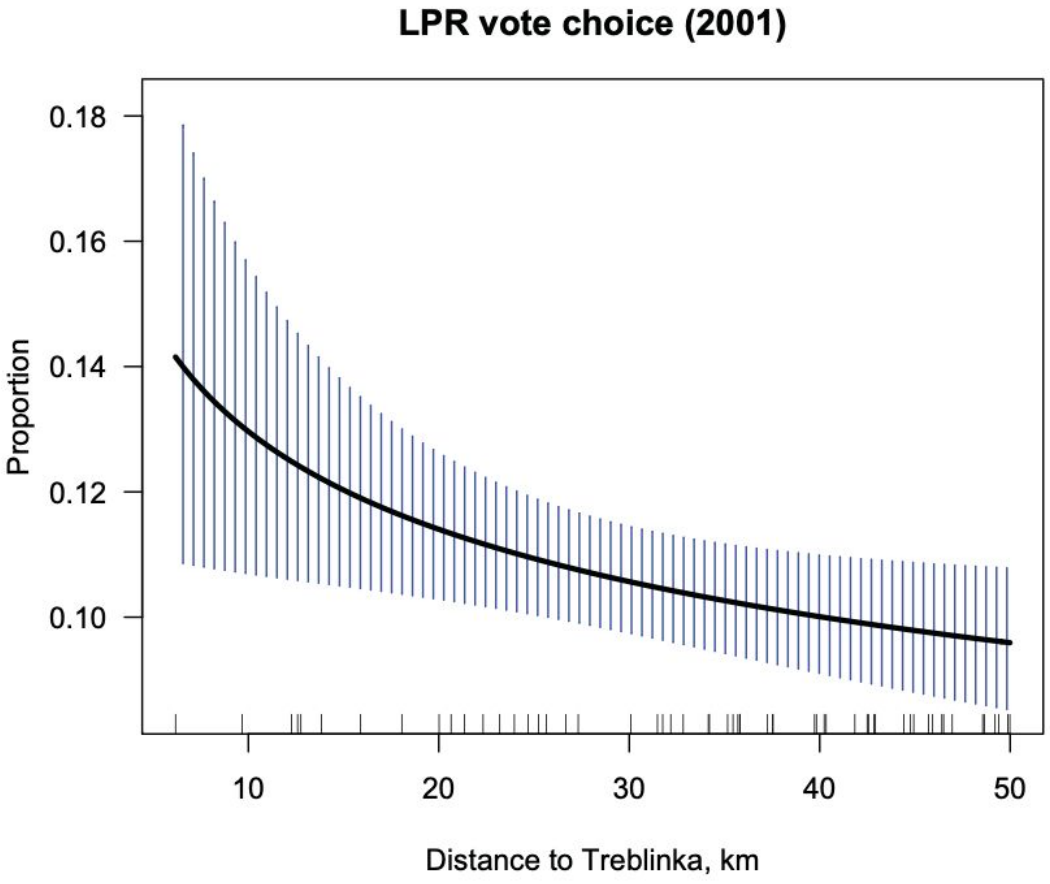

Figure 1. Support for the LPR and Distance to Treblinka Death Camp.
Source: Charnysh and Finkel (2017)

Replication of Charnysh and Finkel's Finding

We start by replicating before extending Charnysh and Finkel's original findings of the logarithm of Distance to Treblinka on the share of LPR vote.

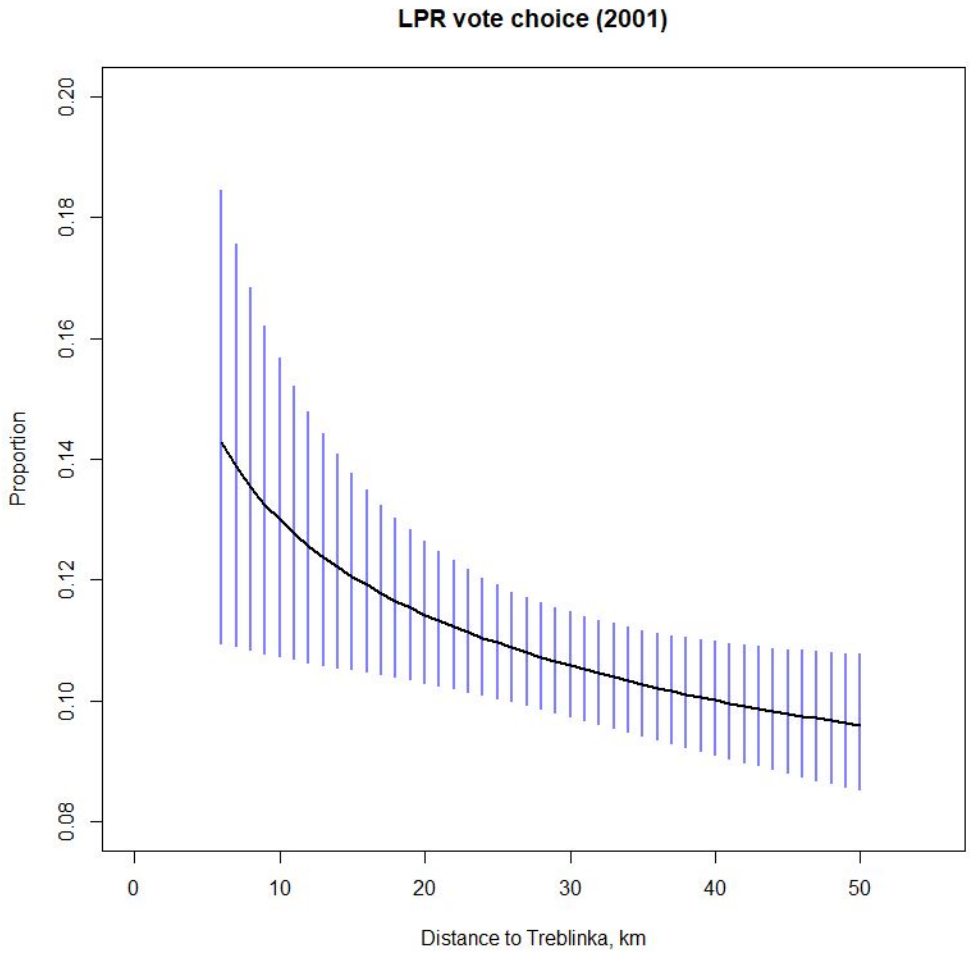

Figure 2. Replication of Figure 1.

After replicating Charnysh and Finkel's original model, we recover their estimate for the wartime property transfer treatment effect on voting behavior.

	Constant	log(Distance to Treblinka)
Coefficient	-1.419 ***	-0.211 *
	Significance codes: *p < 0.1; **p < 0.01; ***p < 0.001	

Table 1. Table showing the coefficient and statistical significance on Distance to Treblinka and log of Distance to Treblinka

However, the problem with the authors' finding was that they employed a quasi-binomial model, which suffers from model dependency: the authors could have chosen their causal effect by choosing the specifications to "manipulate" the relationship between the independent and dependent variables (King, 2015). In their analysis, Charnysh and Finkel (2017) used a quasi-binomial model to examine the political effect of wartime property transfer. The univariate model only includes Distance to Treblinka and ignores other covariates. This raises concern that Charnysh and Finkel's finding is heavily biased as potentially important covariates were excluded. Hence, the model is only suitable for measuring the correlation between Distance to Treblinka and share of LPR votes but should not be used to reliably measure the political effect of wartime property transfer. In other words, we disagree with the authors' analysis as their model does not control (or even consider) confounding variables. We propose using Genetic Matching to obtain a reliable estimate of the treatment effect.

Causal Framework

To estimate the causal effect of wartime property transfer on voting behavior, we use a Genetic Matching with these specifications:

- Units: Communities within a 0-70 km radius of the death camp.

- Treatment: Communities affected by wartime property transfer (or communities within a 50-km radius of Treblinka)
- Control: Communities not affected by wartime property transfer (or communities beyond a 50-km radius of Treblinka)
- Outcome: Proportion of LPR to total votes
- Treatment effect: Difference between the proportion of LPR to total valid for the treatment and control group

Genetic Matching: 0 - 50km radius of Treblinka

We address the issue of model dependency by matching on 126 observations, with 62 observations from the treatment group to recover a better balance in covariates. Additionally, we will also assume that a 50-km radius of Treblinka offers the best study for evaluating the political effects of property transfer. If Charnysh and Finkel's finding is correct, we expect to observe a positive treatment effect.

Treatment group	Treat (No bias)	Treat (Bias adjusted)	p-value (from MatchBalance)	Significance level
Distance < 50 km	-0.003113975	-0.0045573	0.5934809	0.62437

Table 1. Table showing the treatment effects (with and without bias adjusted), p-value (from MatchBalance) and significance level

By using Genetic Matching twice, we recover a better balance on covariates (minimum p-value from MatchBalance is 0.59 - before matching the minimum p-value from MatchBalance

is 0.24). We find no statistically significant differences between the matched observations from the treatment and control group. Additionally, we find the small average treatment effect for the treated (ATT) of -0.005 to be statistically insignificant. Hence, we cannot accept Charnysh and Finkel's finding as the correct causal inference of wartime property transfer on voting behavior[1].

Genetic Matching: Extending Charnysh and Finkel's Finding

The above discussion demonstrates that the quasi-binomial model Charnysh and Finkel use to estimate wartime property transfer treatment effect fails to provide both an acceptable balance on covariates and statistically significant coefficient on the Distance to Treblinka. Can we obtain a wartime property transfer treatment effect if we extend the treatment: we will not only consider a 50-km radius to Treblinka as treatment but also consider every integer distance within a 35-km radius of Treblinka to a 62-km radius of Treblinka as treatment (the 25% and 75% quantile of Distance to Treblinka)?

We address this question by making 28 splits between communities within a 35-km radius of Treblinka to a 62-km radius of Treblinka. For instance, we make a split between communities within a 35-km radius of Treblinka and communities beyond a 35-km radius of Treblinka by considering the first group of communities as the treatment group and the latter

[1] #modeling: We explained the limitation of Charnysh and Finkel's univariate quasi-model and used Genetic Matching to address the issue of model dependency. With Genetic Matching, we found a statistically insignificant ATT and reject Charnysh and Finkel's finding.

group of communities as the control group. Next, we make a split at the 36-km radius of Treblinka mark, etc. For each split, we run Genetic Matching and record the ATT obtained[2].

Assessing the Political Effects of Wartime Property Transfer

Using the given observation data, we infer that there exists a causal effect of wartime property transfer for communities near Treblinka on the share of LPR votes, with the highest causal effect at communities within a 40-km radius of the death camp. In other words, wartime property transfer has benefited certain communities, and thus these communities are more supportive of the anti-Semitism LPR as a way to protect the existing material status quo.

Overall, the highest ATT is only 0.019, with a p-value (from MatchBalance) of 0.7 and a statistical significance p-value of 0.036. We find the highest ATT when matching for communities within a 40-km radius of Treblinka (treatment group) with communities beyond a 40-km radius of Treblinka (control group).

Treatment group	Treat (No bias)	Treat (Bias adjusted)	p-value (from MatchBalance)	Significance level
Distance < 40 km	0.019	0.019	0.701	0.036

Table 2. Table showing the treatment effects (with and without bias adjusted), p-value (from MatchBalance) and significance level

[2] #studyreplication: We replicated Charnysh and Finkel's original study and recovered their estimate. Furthermore, we saw limitations in their study and sought to improve it with Genetic Matching. By doing so, we are testing the validity of their findings by seeing if we can recover their estimate using a different method.

Lastly, to evaluate the causal effect that impacts decision inference, we use matching: we match communities that are geographically distant from Treblinka and to communities in proximity to Treblinka on every controllable covariate to create an approximate counterfactual of communities affected by the wartime property transfer.

Conclusion

Using a univariate quasi-binomial model, Charnysh and Finkel (2017) argue that wartime property transfers do affect voting behavior. Although they attempt to control for important covariates by restricting the sample to communities within a 50-km radius of Treblinka, the authors' methodology is model dependent and does not reliably measure the political effect of wartime property transfer. By using genetic matching to achieve improved matches with reduced covariate imbalances, we find that there is a political effect of wartime property transfer that is statistically insignificant. The highest ATT is 0.019 with a statistical significance p-value of 0.036 at 40 km Distance from Treblinka as treatment. Based on our results, we argue that Charnysh and Finkel made an invalid claim by concluding that wartime property transfer causes a political effect. We recommend that Charnysh and Finkel reduce the model dependency of their finding by using Genetic Matching. Lastly, SUTVA might be violated as the treatment that one community receives may affect the voting behavior of another (perhaps neighboring) community.

Reference

Charnysh, V., & Finkel, E. (2017, August 10). The Death Camp Eldorado: Political and Economic Effects of Mass Violence | American Political Science Review. Retrieved April 24, 2019, from https://www.cambridge.org/core/journals/american-political-science-review/article/death-camp-eldorado-political-and-economic-effects-of-mass-violence/EF9175FAD1AE5302FFAF5169891E7A98

King, Gary. 2015. Why propensity scores should not be used for matching. [Video]. Retrieved from https://www.youtube.com/watch?v=rBv39pK1iEs

Appendix

Link to the code: https://github.com/viethoangtranduong/CS112/tree/master/Final%20Project

- Replicate.R: Replicate the paper's findings
- Extension1.R: Finding the treatment effect for communities < 50 km distance.
- Extension2.R: Finding the treatment effect for each and every communities between 35 - 62 km distance (25-75% quantile).
- total_effect.csv : all the ATT we found for each treatment from 35-62 km range.