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DISCUSSION PAPER SERIES

The impact of terrorism on expectations, trust and happiness

The Case of the November 13 attacks in Paris, France

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Abstract: We use quasi-experimental evidence to measure the impact of the November 13, 2015 attacks in Paris, France on various channels through which terrorism can affect the economy. The evidence suggest the attacks reduced optimism and increased trust in the national government but did not affect current life satisfaction nor political orientation.

Introduction

There is by now a sizeable literature that studies the economic impact of terrorism. For example, Abadie and Gardeazabal (2003) show that terrorism cost the Basque Country 10% of its per-capita GDP. Tavares (2004), using a large panel of countries, however, finds the output cost of terrorist attacks to be small, and smaller for more democratic countries.

Terrorist acts typically only directly affect a small number of individuals and organizations, so to have a sizeable influence on the overall economy, they would need to have a psychological impact on the wider population or affect political outcomes (Krueger (2008, p.8 -9)).

Examples of the impact of terrorism on political outcomes are Montalvo (2011), who finds a significant effect of the 2004 Madrid Bombings on the outcome of the Spanish elections, and Bozzoli and Mueller (2009), who find that the July 2005 London Bombings increased people's willingness to trade off liberties for security.

There are several examples of the impact of terrorism on the mood of the population. Metcalfe et al. (2011) find a significant negative effect of the 9/11 attack on the World Trade center on happiness in the UK, while Clark and Stanca (2016) find a significant negative effect of the Boston Marathon Bombing on happiness in the US. Romanov et al (2012), however, find little evidence of terrorism on life satisfaction in Israel. These studies capture the impact of terrorism by comparing answers of respondents interviewed just before the terrorist attacks to the answers of respondents interviewed just after the attacks.

Such quasi-experimental methodological approach is also used to assess the impact of terrorism on trust. Dinesen and Jaeger (2013), for example, find that the 2004 Madrid Bombings had a short-lived positive effect on trust in political institutions. Wollebæk et al. (2012) similarly document an increase in interpersonal and institutional trust after the Utøya murders in Norway while Gates and Justesen (2016) find a decrease in trust in the president after a Tuareg attack in Mali.

In this note, we estimate the impact of the November 13, 2015 attacks in Paris, France. On November 13, terrorists attacked 4 different places in Paris, killing 130 people and injuring over 350 people. While France had suffered an earlier attack on Charlie Hebdo, in January 2015, the November 2015 attack was the first Islamist attack in France aimed not at a selected group of people, but rather aimed to maximize victims in the population.

We analyze the channels that can cause an economic impact by analyzing how the attack influenced the mood, expectations and trust of the French. We use the November 2015 Eurobarometer survey, which interviewed about 1000 French people data in the period November 7-November 16, 2015. About 90% of the interviews took place on or before November 13, and 10% after the attack (mainly on Saturday November the 14th). We also use the Eurobarometer survey done weeks before the attack (October 17-26, 2015) and the survey done weeks after (November 28th-December 7th, 2015). Using these additional surveys we can assess whether possible immediate effects of the attack persist; though, admittedly, the longer the period between the attack and the survey period, the more likely our outcome variables are not only affected by the attack itself.

All 3 surveys included questions on life satisfaction, on whether the country goes in the right direction and on one's political orientation. The November survey includes additional questions on the importance of terrorism, on quality of life now and in the past, on confidence in the future and on trust in various political institutions.

Econometric Analysis.

While we have data from different periods in time, the surveys do not follow the same people over time. Hence, changes over time could be due to changes in the sample composition. We therefor

report the results of a regression analysis which control for differences in the sample by including a fixed set of control variables:

- Age
- A dummy for women
- A dummy for rural areas
- A set of dummies reflecting different levels of education
- A dummy for respondents who regularly have difficulties paying bills
- A set of dummies reflecting the relationship status
- A set of dummies reflecting the employment status

These variables are typical control variables in studies of happiness, expectations, trust and political views. For example, Jacobsen et al. (2014) study the relationship between optimism and gender, Powdthavee et al. (2015) between happiness and education, Stevenson and Wolfers (2008) between happiness and the economic situation, Sutter and Kocher (2007) between age and trust, Yang and Zeng (2016) between the urban/rural divide and trust.

Analysis.

Column Ia and Ib of table 1 give the results of an ordered probit model analyzing how satisfied a respondent is with the life (s)he leads. Respondents had a choice between four possible answers, ranging from 'Very Satisfied' to Not At All Satisfied. Table 1 gives the average marginal effects on the probability of answering 'Very satisfied (Ia)' or 'Fairly satisfied' (Ib). Given marginal effects need to sum to one, one can also infer from the table the marginal effects on the probability of being in the remaining categories. The table shows that the probability of a respondent answering (s)he is very satisfied, is increasing over time, with no signs of the attack changing this trend. The same conclusion follows from analyzing the question whether a respondent thinks, currently, the country is going in the right direction: compared to weeks before the attack, more people think the country is going in the right direction but this trend already started before the attack (column IIa and IIb).

Similarly, we do not find that the attacks affect the probability people were happy with the quality of life (columns IIIa and IIIb) nor that it made respondents more likely to agree with the statement that quality of life before was better (columns IVa and IVb).

We do find, however, that the attacks negatively affected expectations: we find that, after the attack, the probability respondents expect the quality of life to become better in the next 12 months, is 7 percentage points lower than before (column IVa). Compared to the 18% of respondents who believed the quality of life to become better before the attack, this 7% points change is sizeable. Similarly, we find that respondents are 6 percentage points less likely to 'totally agree' with the statement they are confident in the future and 6 percentage points less likely to 'tend to agree' with such statement. This decrease of 12 percentage points in the probability of agreeing that one is confident in the future is sizeable when compared to the 53% of respondents agreeing with this statement before the attack.

Focusing on the possible political impact of the attacks, we find that the chance a respondent indicates terrorism is among the two most important problems the country faces, increases by 29.4 percentage points (column VII), while the chance a respondent indicates terrorism is among the two most important problems (s)he personally faces increases by 6.1 percentage points (column VIII). Compared to initial levels of 15% and 3.5%, these are massive increases. Finally, we find that the attacks significantly and positively affected trust in the national government, with the increase being a sizeable 13 percentage point (column XI), which is almost a doubling compared to the base level of 18%. We do not find a significant impact on individuals' political left/right orientation (column XII), nor on trust in political parties (column IX) or local governments (column X).

Conclusion

The quasi-experimental evidence presented here suggests the November 13, 2015 terrorist attacks in Paris, France, worsened expectations about the future, increased trust in the national government and brought terrorism up in people's agenda. But they did not affect current satisfaction with life nor with the direction in which the country is going, nor the political orientation of respondents.

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Table 1a	Current Life Satisfaction		Currently going in which direction?		Current Quality of Life		Quality of Life was Better Before		Quality of Life in the next 12 months will be		Do you agree with the statement that you have confidence in future	
	(Ia) Very Satisfied	(Ib) Fairly Satisfied	(IIa) Right	(IIb) Neither Right nor Wrong	(IIIa) Very Good	(IIIb) Fairly Good	(IVa) Totally Agree	(IVb) Tend to Agree	(Va) better	(Vb) same	(VIa) Totally agree	(VIb) Tend to agree
Immediately Before the attack	0.012	-0.002	0.068***	0.043***								
	0.01	0	0.01	0.01								
Immediately After the attack	0.021	-0.004	0.077**	0.048***	-0.005	-0.007	0.025	0	-0.070**	-0.01	-0.058**	-
	0.03	0.01	0.03	0.02	0.02	0.03	0.04	0	0.03	0.01	0.02	0.02
Weeks After the attack	0.032**	-0.007**	0.068***	0.043***								
	0.01	0	0.01	0.01								
N	3015	3015	2845	2845	932	932	932	932	934	934	934	934

Table 1b	Priority for France	Priority for oneself	Political Parties	Local Gov.	National Gov.	Political Orientation
	(VII)	(VIII)	(IX) Tend to Trust	(X) Tend to Trust	(XI) Tend to Trust	XII Left(1)-Right(10)
Immediately Before the attack						-0.191*
						0.11
Immediately After the attack	0.294***	0.061***	0.041	0.043	0.133***	-0.145
	0.03	0.02	0.03	0.06	0.04	0.27
Weeks After the attack						-0.041
						0.11
N	1000	1000	855	888	888	2358

The table gives marginal effects after (ordered) probit or OLS regressions including control variables. The base category is a respondent either weeks before the attack or just before the attack depending on data availability. One * indicates significant at the 10%, ** 5% and *** 1% significance level. Full tables can be found in an online appendix.

Descriptive Stats Analysis.

1. On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?

	Oct. 17-26	Nov. 7-Nov. 13	Nov. 14-Nov. 17	Nov. 28-Dec. 7
# observations	1028	929	97	1038
Very Satisfied	20.91	18.95	20.62	22.83
Fairly Satisfied	62.16	65.77	69.07	63.58
Not Very Satisfied	11.38	11.84	7.22	9.83
Not At All Satisfied	5.16	3.34	3.09	3.66
DK	0.39	0.11	0	0.1

2. How do you judge the current situation in terms of life quality in France?

	Nov. 7-Nov. 13	Nov. 14-Nov. 17th
# observations	929	97
Very Good	6.78	8.25
Rather Good	62.43	59.79
Rather Bad	23.36	26.8
Very Bad	5.38	4.12
DK	2.05	1.03

3. At the present time, would you say that, in general, things are going in the right direction or in the wrong direction, in our country?

	Oct. 17-26	Nov. 7-Nov. 13	Nov. 14-Nov. 17	Nov. 28-Dec. 7
# observations	1028	929	97	1038
Right Direction	7.49	13.56	12.37	13.39
Wrong Direction	77.82	67.38	61.86	66.18
Neither (spontaneous)	8.85	13.56	18.56	13.97
DK	5.84	5.49	7.22	6.45

4. In general, to what extent you agree that, in terms of quality of your life, things were better before.

	Nov. 7-Nov. 13	Nov. 14-Nov. 17th
# observations	929	97
Totally Agree	30.89	27.84
Tend to Agree	32.4	38.14
Tend to Disagree	26.7	23.71
Totally disagree	4.52	6.19
DK	5.49	4.12

1. What are your expectations for the quality of life in France over the next 12 months. The next 12 months will be

	Nov. 7-Nov. 13	Nov. 14-Nov. 17 th
# observations	929	97
Better	17.76	13.4
Same	56.94	53.61
Worse	21.53	29.9
Dk	3.77	3.09

2. To what extent do you agree with the statement that you have confidence in the future?

	Nov. 7-Nov. 13	Nov. 14-Nov. 17 th
# observations	929	97
Totally Agree	11.3	12.37
Tend to Agree	41.55	28.87
Tend to Disagree	30.25	38.14
Totally disagree	12.81	16.49
DK	4.09	4.12

1. According to you, which are the two most important problems France faces now?

face la France actuellement ?

	Nov. 7-Nov. 13	Nov. 14-Nov. 17 th
# observations	929	97
Does NOT mention terrorism	84.82	48.45
Mentions Terrorism	15.18	51.55

2. According to you, which are the two most important problems you personally face now?

	Nov. 7-Nov. 13	Nov. 14-Nov. 17 th
# observations	929	97
Does NOT mention terrorism	96.45	87.63
Mentions Terrorism	3.55	12.37

1. To what extent do you trust political parties

	Nov. 7-Nov. 13	Nov. 14-Nov. 17 th
# observations	929	97
Tend to trust	7	11.34
Tend not to trust	88.91	83.51
DK	4.09	5.15

2. To what extent do you trust local government

	Nov. 7-Nov. 13	Nov. 14-Nov. 17 th
# observations	929	97
Tend to trust	43.70	47.42
Tend not to trust	50.38	46.39

DK	5.92	6.19
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3. To what extent do you trust the country's government

	Nov. 7-Nov. 13	Nov. 14-Nov. 17th
# observations	929	97
Tend to trust	17.55	34.02
Tend not to trust	77.18	63.92
DK	5.27	2.06

Interestingly respondents were more likely to trust these political institutions after the attack than before the attack.

	Oct. 17-26	Nov. 7-Nov. 13	Nov. 14-Nov. 17	Nov. 28-Dec. 7
# observations	1028	929	97	1038
Box 1 - left	3.89	4.84	3.09	3.47
Box 2	3.21	4.74	7.22	3.08
Box 3	9.92	10.87	9.28	10.21
Box 4	7.39	8.72	7.22	8.57
Box 5	23.35	25.62	21.65	25.63
Box 6	6.52	8.07	7.22	5.59
Box 7	10.02	8.07	7.22	9.25
Box 8	4.86	5.06	4.12	3.37
Box 9	1.07	1.4	1.03	1.93
Box 10 - right	4.67	5.06	5.15	4.72
Refusal	6.03	4.74	5.15	5.01
dk	19.07	12.81	21.65	19.17

Econometric Analysis.

Life Satisfaction

	Satisfaction	Satisfaction	Quality	Quality	Direction	Direction	Quality Better Before	Quality Better Before
	Very Satisfied	Fairly Satisfied	Very Good	Fairly Good	Right	Neither	Totally Agree	Tend to Agree
Immediately Before the attack	0.012	-0.002			0.068***	0.043***		
	0.01	0			0.01	0.01		
Immediately After the attack	0.021	-0.004	-0.005	-0.007	0.077**	0.048***	0.025	0
	0.03	0.01	0.02	0.03	0.03	0.02	0.04	0
Weeks After the attack	0.032**	-0.007**			0.068***	0.043***		
	0.01	0			0.01	0.01		
Age	0	0	0	0	0.001***	0.001***	0.001	0
	0	0	0	0	0	0	0	0

16-19 years of education	0.019	-0.001	-0.006	-0.013	0.017	0.012	-0.01	0.001
	0.02	0	0.01	0.03	0.01	0.01	0.04	0.01
20+ years of education	0.049***	-0.007**	0.029*	0.04	0.056***	0.034***	-0.170***	-0.011
	0.02	0	0.02	0.03	0.02	0.01	0.04	0.01
Still Studying	0.305***	-0.165***	0.059	0.060**	0.151***	0.069***	-0.227***	-0.039
	0.05	0.03	0.05	0.03	0.04	0.01	0.06	0.03
(Re-)Married/ Single with partner	0.076***	-0.017***	0.018	0.033	-0.008	-0.004	-0.027	0
	0.02	0	0.01	0.03	0.01	0.01	0.03	0
Divorced or separated	-0.041**	-0.008*	0.016	0.03	-0.031*	-0.019*	-0.044	-0.001
	0.02	0	0.02	0.03	0.02	0.01	0.05	0
Widowed	0.009	0	0.026	0.043	0.001	0.001	-0.013	0
	0.02	0	0.02	0.03	0.02	0.01	0.05	0
Female	-0.012	0.003	-0.048***	-0.075***	-0.032***	-0.019***	0.024	0
	0.01	0	0.01	0.02	0.01	0.01	0.02	0
Employed	-0.011	0.003	-0.057	-0.052**	-0.03	-0.015	0.032	0.005
	0.04	0.01	0.04	0.02	0.03	0.01	0.06	0.01
Not working	-0.031	0.008	-0.054	-0.047**	-0.037	-0.019	0.092	0.007
	0.04	0.01	0.04	0.02	0.03	0.02	0.06	0.01
Rural	0.024*	-0.006	-0.008	-0.012	-0.024*	-0.014*	0.032	0.001
	0.01	0	0.01	0.02	0.01	0.01	0.03	0
Regular Trouble Paying Bills	-0.224***	0.051***	-0.039***	-0.061***	-0.070***	-0.040***	0.214***	0.004
	0.02	0.01	0.01	0.02	0.02	0.01	0.03	0.01
R Adj sq.								
N	3015	3015	932	932	2845	2845	932	932

Expectations

	Quality better	quality same	Confidence in future Totally agree	Confidence in future Tend to agree
Immediately Before the attack				
Immediately After the attack	-0.070**	-0.01	-0.058**	-0.060***
	0.03	0.01	0.02	0.02
Weeks After the attack				
Age	-0.001	0	-0.001	-0.001
	0	0	0	0
16-19 years of education	0.018	0.002	0.003	0.005

	0.03	0	0.02	0.02
20+ years of education	-0.011	-0.003	0.071***	0.071***
	0.03	0.01	0.02	0.03
Still Studying	0.043	0.002	0.071	0.071*
	0.07	0.01	0.05	0.04
(Re-)Married/Single with partner	0.002	0	0.032*	0.035*
	0.03	0	0.02	0.02
Divorced or separated	0	0	0.005	0.006
	0.04	0	0.02	0.03
Widowed	-0.088**	-0.043*	0.001	0.001
	0.04	0.02	0.03	0.03
Female	-0.003	0	-0.046***	-0.048***
	0.02	0	0.01	0.01
Employed	-0.017	-0.003	-0.031	-0.025
	0.05	0.01	0.04	0.03
Not working	-0.001	0	-0.042	-0.036
	0.06	0.01	0.04	0.03
Rural	0.027	0.004	-0.013	-0.013
	0.02	0	0.02	0.02
Regular Trouble Paying Bills	-0.045	-0.007	-0.090***	-0.093***
	0.03	0.01	0.02	0.02
R Adj sq.				
N	934	934	934	934

Terrorism

	Priority for France	Priority for oneself
	b/se	b/se
Immediately After the attack	0.294***	0.061***
	0.03	0.02
Age	0.001	0.001
	0	0
16-19 years of education	0.016	0.02
	0.04	0.02
20+ years of education	-0.076**	-0.026
	0.04	0.02
Still Studying	-0.141***	-0.003
	0.05	0.05
(Re-)Married/Single with partner	-0.03	0.024
	0.04	0.02
Divorced or separated	-0.071	-0.01
	0.05	0.02
Widowed	-0.079	0.004
	0.05	0.02
Female	0.042*	-0.011
	0.02	0.01
Employed	-0.04	0.003
	0.07	0.04
Not working	-0.031	-0.007

	0.07	0.04
Rural	-0.038	-0.03
	0.03	0.02
Regular Trouble Paying Bills	-0.035	-0.023
	0.03	0.02
R Adj sq.		
N	1000	1000

Trust and Political Orientation

	Political Parties	Local Gov.	National Gov.	Political Orientation
	Tend to Trust	Tend to Trust	Tend to Trust	
Immediately Before the attack				-0.191*
				0.11
Immediately After the attack	0.041	0.043	0.133***	-0.145
	0.03	0.06	0.04	0.27
Weeks After the attack				-0.041
				0.11
Age	0	0.001	0.001	-0.002
	0	0	0	0
16-19 years of education	-0.041	-0.048	-0.044	0.118
	0.03	0.05	0.04	0.14
20+ years of education	0.001	0.026	0.018	-0.467***
	0.03	0.06	0.05	0.15
Still Studying	0.035	0.205**	0.109	-0.494
	0.08	0.1	0.1	0.3
(Re-)Married/Single with partner	-0.013	0.026	0.027	0.193
	0.03	0.05	0.04	0.13
Divorced or separated	-0.080***	-0.061	-0.036	0.132
	0.03	0.06	0.05	0.18
Widowed	-0.002	0.001	-0.014	0.531**
	0.04	0.07	0.06	0.21
Female	0.011	-0.053	-0.016	-0.284***
	0.02	0.03	0.03	0.09
Employed	0	0.09	0.059	-0.406
	.	0.09	0.07	0.27

Not working	0	0.026	0.016	-0.343
	.	0.09	0.07	0.27
Rural	-0.006	0.003	-0.066*	-0.102
	0.02	0.04	0.04	0.12
Regular Trouble Paying Bills	0.005	-0.075	-0.116***	-0.036
	0.03	0.05	0.04	0.14
R Adj sq.				
N	855	888	888	2358