Fear and the Response to Terrorism: An Economic Analysis

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Abstract

In this project we aim at explaining, within the framework of rational choice models, why small probability events such as the likelihood to be harmed by terror affect peoples' behavior so much. The large-scale effects of terror on peoples' behavior were often attributed to their "ignorance" of the objective (true) probabilities and their tendency to overstate low probability events.

Contrary to these explanations, we put forward an alternative theory incorporating into the expected utility theory situations in which the extreme consequences associated with consumption of risky goods and the extent these turn into a salient phenomenon, affect persons' mental state, generate *fear*, and by that affect peoples' utility and well-being.

Our argument is based on two corner stones. Terror affects not only the likelihood to be harmed but mainly, by generating *fear*, persons' utility and well-being. Fear can be managed. People can handle their fears. They do so by accumulating the necessary *mental* skills. Like other investments in human capital, it is not a "free-lunch" and it does not pay back the same to anyone. Those who are more likely to benefit from terror infected activities will invest and overcome their fears. Others will substitute the risky activities by other consumption plans – which may falsely appear as if they overstate the objective probability to be harmed by terror.

Using data from the US and from Israel we identify the role of fear on economic behavior by comparing the effect of terror on people who face *similar* objectives (and subjective) probability to be harmed, but *different* incentive to invest and overcome fear.

We find that those who are more likely to invest are less likely to be affected by terror. For instance we show that while terror generates large average effects on consumers it has little effect on the compensation (wages) of those employed in the "infected" industries. Using micro data on the use of public bus routes and taxis in Israel we find that suicide bomber attacks carried out on buses have a substantial negative average effect on bus rides and positive effect on the use of taxis. Disaggregating the population into low and high frequency users reveals that this does not hold for the later. Controlling for income, age, and education we find no effect what so ever of suicide bomber attacks on the number of bus rides taken by high frequency users. Micro data on the consumption in coffee shops make it very clear that while moderate consumers substantially decrease their consumption when terror strikes, consumers who had previously spend more of their income in coffee shops did not change their habits.

Finally, using our estimates we address the following question: to what extent should people's fear and risk aversion be in order to fit the data? We calibrate the risk and the fear aversion parameters restricting the utility function to be of the constant relative risk aversion class (CRRA). We find that if suicide bomber attack carried out on buses reduces the marginal utility of a bus ride merely by one fifth, then even a moderate risk aversion suffice to fit the data.

Fear is not limited to terror. Large scale effects generated by low probability events are part of our daily life. Evidence from the "Mad Cow" crisis show, in accordance with our theory: those who consumed high level of beef did not change their

consumption at all while those who consumed less reduced their beef consumption substantially.

Terror takes advantage of people being human and rational. By generating fear, terror, even in the form of a low probability event, may cause substantial effects. Hence, terror generates large scale effect by damaging the quality of our life rather than the "quantity" of life.