Chapter 7. Terrorism and Zero-Inflated Negative Binomial Regression: A Mismatch between Theory and Statistical Model

Abstract

Chapter 7 discusses the utility of zero-inflated negative binomial (ZINB) regression, an estimation method that is often used inappropriately in terrorism literature. Because a mismatch between theory and the statistical model is incredibly obvious in four existing studies, this chapter makes the point that a reanalysis of published empirical results may not even be required. Existing research supposes that while a large number of countries are immune from terrorism because of their unique political and economic environments, only a small number of countries are exposed to terrorist attacks. Existing research then employs ZINB regression to test this theory. However, ZINB regression is designed exclusively for a cross-sectional dataset and thus not suitable for the cross-sectional, time-series dataset used by those existing studies, in which the presence of excessive zero counts of terrorism is related to individual *observations* with zero terrorist incidents and not to individual *countries*, as theorized. Because the erroneous statistical model has been employed in the four studies listed above, their reported estimates are likely to be biased, and the findings, then, are merely statistical artifacts.