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Terrorism and its impact on the cost of debt

William J. Procasky [a,*], Nacasius U. Ujah [b,1]

[a] A R Sanchez Jr. School of Business, Texas A&M International University, 5201 University Boulevard, Laredo TX 78041, USA

[b] University of Nebraska at Kearney, College of Business and Technology, Kearney, NE 68849, USA

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ABSTRACT

We extend the literature on the costs of terrorism by examining its long-term impact on financial markets, an underdeveloped strand of research within the terrorism construct. Specifically, we look at its effect on the sovereign risk of 102 countries (a much broader sample than examined before), which forms the basis of the cost of debt in those countries, postulating that it results in a lower credit rating and that this impact is more pronounced in developing as opposed to developed markets. In operationalizing the risk of terrorism, we utilize the Institute for Economics and Peace's Global Terrorism Index, the most comprehensive index constructed to date which incorporates both the economic and social dimensions of terrorism and is based on the Global Terrorism Database covering 104,000 documented incidents. The results of the study support the hypothesis that terrorism results in a higher cost of debt for sovereigns and by extension, firms in impacted countries. In fact, a two-point increase in terrorism on the utilized 10-point scale on average results in a half notch reduction in a sovereign's credit rating, roughly equivalent to a change in outlook. Furthermore, this impact is more pronounced in developing markets where we find that a comparable two-point increase in terrorism on average results in an entire notch downgrade in the sovereign credit rating, e.g., from BB to BB-. Finally, we find that our model demonstrates predictive power on an out-of-sample basis and as such, could be useful for investors seeking to construct more efficient diversified asset portfolios.

* Corresponding author. Tel.: +1 832 867 3201.
E-mail addresses: williamprocasky@dusty.tamiu.edu (W.J. Procasky), ujahn2@unk.edu (N.U. Ujah).
[1] Tel.: +1 (479) 295 2265.

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1. Introduction

Terrorism is defined by the Institute for Economics and Peace as "the threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation." Although terrorism has been a problem for quite some time (Hoffman, 2006) and others link the beginning of the modern era of terrorism to hijackings by the PLO in 1968 (in response to the Israeli Six-Day War), it only recently has received the concerted attention of the research community, largely beginning in the aftermath of the World Trade Center attack on September 11th, 2001.

Unfortunately, since the 9/11 attack and the attendant "War on Terrorism", the global impact of terrorism has increased significantly, and while one could claim that it recently has decreased, in reality it has more or less plateaued, meaning that it likely will remain a problem at least for the foreseeable future, resulting in a general acceptance that dealing with terrorism is an issue that must be dealt with in the 21st century.

Against this backdrop, our contribution to the literature is to extend the limited research strand associated with examining the longer-term impact of terrorism on capital markets, an area of great concern to investors. In doing so, we employ the comprehensive GTI produced by the Institute for Economics and Peace for the first time, looking at the 102 rated countries in the index, exponentially expanding the breadth of countries examined at one time, to determine the link to the cost of debt in those countries. As a proxy for the cost of debt, we utilize a measure of sovereign risk, the sovereign credit risk rating, thereby expanding upon and modifying the seminal work done by Haddad and Hakim (2008). Our primary findings are that the impact is both statistically and economic significant, especially for developing countries and that our model demonstrates predictive power on an out-of-sample basis (a finding with potentially significant implications for investors). In fact, a two-point increase in terrorism on the utilized 10-point scale on average results in a half notch reduction in a sovereign's credit rating, which is roughly equivalent to a change in outlook. However, in developing markets we find that the same two point increase in terrorism on average results in an entire notch downgrade in the sovereign credit rating, e.g., from BB to BB-.

Obviously, there are significant and immediate costs associated with terrorist attacks, the most visible being the loss of human life and the destruction of property, however beyond that, there are also indirect costs which take more time to manifest and which can be quite deleterious for the affected countries and firms in those countries. For this reason, the literature divides the costs of terrorism into two primary categories, those of direct and indirect costs. The direct costs, as already mentioned, have to deal with loss of life and the destruction of infrastructure, buildings and equipment, and are generally felt by a very small segment of the population (even the WTC attack of 9/11). However, on the other hand, indirect costs tend to be felt much more broadly across the economy and even can take a while to become palpable, for example as per Czinkota et al. (2010), declines in buyer demand (e.g., due to fear and uncertainty), increased international business transaction costs (terrorism insurance), international supply chain management interruptions (delays at ports), declines in foreign direct investment (as capital leaves the affected country and seeks lower risk elsewhere) and new government regulations (such as those employed at ports which cause the aforementioned delays), e.g., (Barth et al., 2006; Bouchet and Henry, 2004; Czinkota et al., 2004; Ketata and McIntyre, 2008; Lenain et al., 2002; Spich and Grosse, 2005).

Almost all of the relevant literature to date has concerned itself with the indirect economic costs of terrorism and its impact on indicators such as GDP growth and federal direct investment, e.g., (Enders and Sandler, 1996; Abadie and Gardeazabal, 2008). However, there has been some study with respect to the impact of terrorism on financial markets, which is the strand of research that we focus on in this paper. However, the majority of this focus has been on the *short-term* impact of a specific terrorist event on the stock market and by extension, whether it resulted in abnormal profits, e.g., Chen and Siems (2004). One study in particular, though, Haddad and Hakim (2008), dealt with the potential long-term indirect costs of terrorism on sovereign risk for a very small basket of countries in the Middle East and it is on this particular piece of literature where we pick up the thread and seek to advance the knowledge. In accomplishing this, we extend the analysis to over 100 countries around the world and ascertain whether terrorist activity has had an impact on their sovereign debt ratings. We focus