

## QUANTIFYING THE NEGATIVE

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### **Abstract – Academic paper.**

How do agencies that prevent or mitigate disasters communicate their value? How do they justify their budgets? If one were to do a “return on investment” (ROI) study on homeland security departments, what value would they return? How would this value be expressed? The purpose of this thesis is to quantify the negative events (QTN) as well as the losses because “what was saved” is just as important (perhaps more important) as “what was lost.” For example, the Great Chicago Fire of 1871 burned for three days, destroying thousands of buildings and killing an estimated 300 people to the tune of some \$222 million in damages (more than \$4 billion in 2015 dollars). Legend has it the blaze started in a barn. If the fire had been stopped with only the loss of the barn, the value of the response would have been staggering—though the story might not resonate decades later. In fact, the true ROI of a fire department is the value of what was saved versus the cost of the fire department. This current paper quantifies what was saved and uses it to compute a ROI and a more meaningful representation of performance in the form of the S ratio.

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