



Economic Consequence Analysis of 9/11 and Beyond

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CREATE 9/11 Study

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 - Patricia Grossi, RMS, Inc. (Property Damage)
 - Jason Bram, Andy Haughwout, Jim Orr, NewYork Fed (Direct Impacts)
 - Brock Blomberg, Greg Hess, Claremont U. (Econometric)
 - Bryan Roberts, DHS (Econometric)
 - Jeff Werling, Ronald Horst, U. of Maryland INFORUM (I-O/Econometric)
 - Adam Rose, Bumsoo Lee, Garrett Asay, USC; Debo Oladosu, ORNL (CGE)
 - JiYoung Park, Peter Gordon, Eunha Jun, James Moore, Harry Richardson, USC (I-O)
 - Fred Treyz, Billy Leung, REMI, Inc. (Macroeconometric)
- Consensus Estimate of Negative GDP Impacts:
\$71 billion to \$138 billion (in 2020 dollars)

New York Times Economic Impacts of 9/11

How \$3.3 Trillion Is Spent

Experts differ on some of these numbers, as well as what should be included in a tally. Here, no attempt has been made to account for some of the imponderables: for example, are oil prices higher because of the Iraq war? But it is clear that it was the nation's response, rather than the damage from the attacks, that accounts for the bulk of the cost.

TOLL AND PHYSICAL DAMAGE

\$55 Billion



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ECONOMIC IMPACT

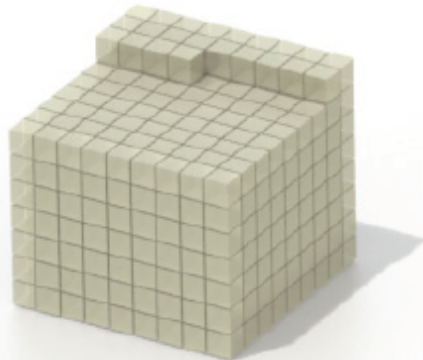
\$123 Billion



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HOMELAND SECURITY, RELATED COSTS

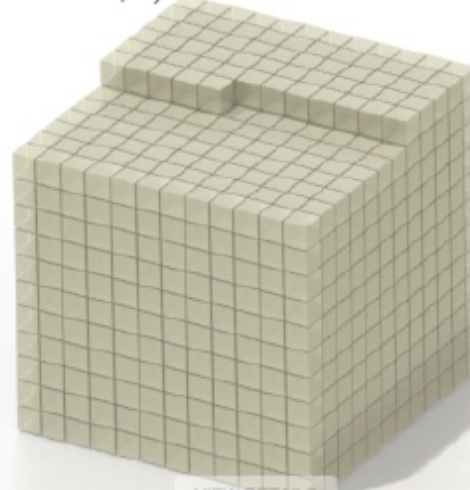
\$589 Billion



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WAR FUNDING, RELATED COSTS

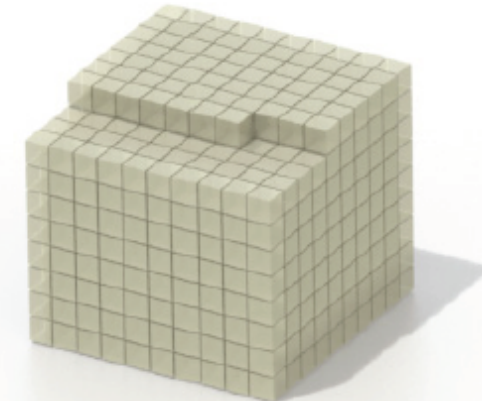
\$1,649 Billion



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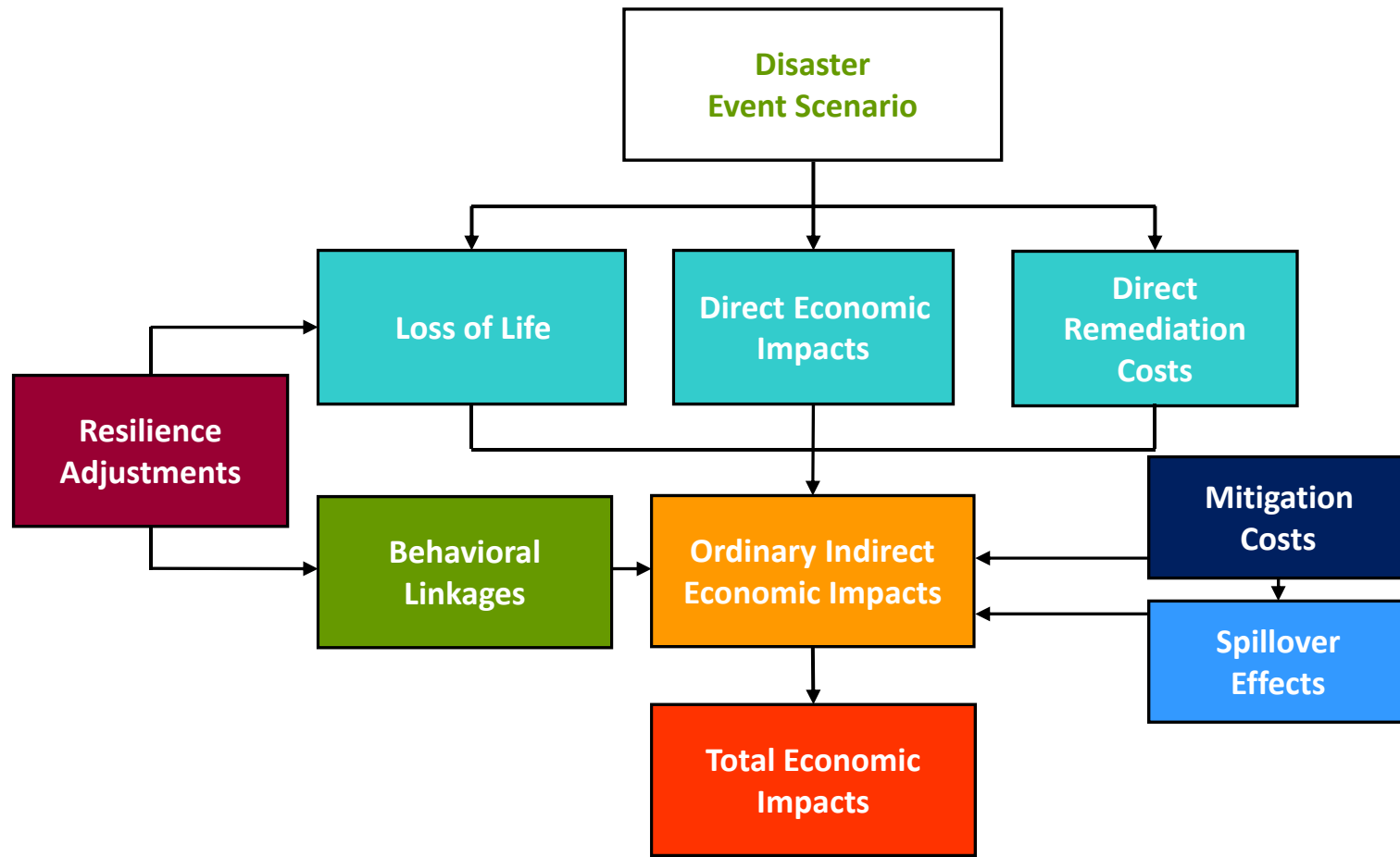
FUTURE WAR AND FUTURE VETERANS' CARE

\$867 Billion



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CREATE Economic Consequence Analysis Framework



Economic Resilience

- Static/post-disaster version:
 - *General Definition*: Ability of a system to maintain function when shocked
 - *Economic Definition*: Efficient use of remaining resources at a given point in time to keep producing as much as possible
- Emphasis on GDP (Welfare) vs. Property Damage
 - Begins when the disaster strikes & proceeds until recovered
 - Economic Resilience is synonymous with business continuity
- Operational Metric: averted business interruption losses as a % of potential business interruption losses



Measuring Economic Resilience of 9/11

- 95% of 1,100 WTC area firms relocated after 9/11
- If all of firms in the WTC area went out of business, direct business interruption (BI) loss would = \$43B
- If all relocation were immediate, then BI = \$0
- Businesses relocated 2 to 4 months, BI = \$12B
- Resilience Metric: $\text{Avoided Loss} \div \text{Max Potential Loss}$

$$\text{\$31B} \div \text{\$43B} = 72\%$$



Behavioral Linkages

- Off-site responses associated with behavioral changes (business, household, investor, worker)
- Emanates from social amplification of risk & stigma effects (media coverage, rumor)
- Fear feeds on itself & spreads; Translates to BI losses
- Can increase GDP loss by 1 to 2 orders of magnitude
- More than 80% of the GDP losses from 9/11 due to almost 2-year reduction in air travel & related tourism

Other Costs of 9/11

- Fatalities: 3,000; VOSL = \$30 billion
- PTSD:
 - 8 to 12% of professional first-responders
 - 16 to 30% of volunteer responders
 - \$5 to \$8 billion for war veterans through 2008
- Other health: 17,000 people in WTC Health Registry
- Damage to the national psyche
- Cost of domestic anti-terrorism initiatives
- Cost of the war in Afghanistan?
- Cost of the war in Iraq???

Lessons Learned

- Resilience is a powerful second line of defense
 - Interdiction/mitigation still our first line of defense
 - Several resilience tactics effective, but depend on context
 - In 9/11, also included acceleration of return to normalcy
- Fear can get the better of us
 - Importance of accurate media reporting
 - Importance of truthful social media
 - Importance of government risk messaging
- Workings of markets => efficient resource allocation
- Fiscal & monetary policy play an instrumental role

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