Do Covert Air Strikes Slow Terrorists Down?

The Effect of Covert Air Strike Fatalities on the Timing of Terrorist Attacks

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Background

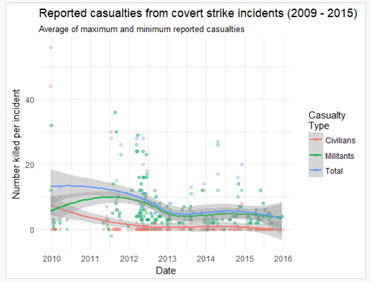
- Covert operation:
  "*An operation that is so planned and executed as to conceal the identity of or permit plausible denial by the sponsor*."
  (U.S. Department of Defense Dictionary of Military and Associated Terms)
- The US conducted covert drone and other air strikes abroad to target terrorist groups since at least 2002
- The Obama administration greatly increased the use of covert air strikes in counter-terror operations
- Pros: precision, speed, reduced military footprint
- Cons: murky legality, widely publicized collateral damage, controversy due to secretive nature

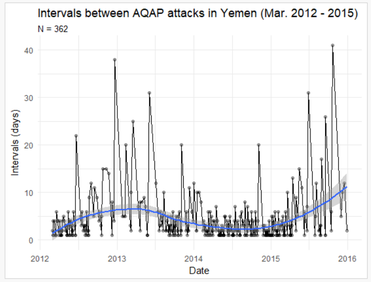
Research question

Do covert air strikes against terrorist groups increase or decrease the intervals between terrorist attacks?

Design

- Scope: Yemen, 2012 – 2015; covert air campaign against al-Qaeda in the Arabian Peninsula, and contemporary AQAP attacks
- Independent variable: time-smoothed measure of fatalities from covert air strikes
- Dependent variable: intervals between AQAP-perpetrated attacks in days
- Methods: simple linear regression and fixed effects models
- Data: Global Terrorism Database (AQAP attacks), the Bureau of Investigative Journalism (reported covert strike incidents and related casualties), New America Foundation (group leader deaths from covert strike incidents)
- *N* = 362





Model

Assumptions:

- The effects of any given covert strike on attack timing only last for a certain number of days
- The effects of a strike depreciate each passing month
- The death of a group leader has a greater effect than the death of a non-leader

Thus, the relationship is modeled as:

$$\log(interval_t) = \beta_0 + \beta_1 \log(killed_{ct})$$

where for each time period t in which an attack has occurred:

- $interval_t$ is the period of time in days until the next attack
- $killed_{ct}$ is the cumulative effect of all covert strike fatalities incurred up to and including period t

The cumulative effect is modeled as:

$$killled_{ct} = \sum_{n=t-x}^{t} (1 + \alpha)^{K_n} killed_n (1 - \delta)^{D_n}$$

where

- x is fixed cutoff in difference from t in days
- α is the added effect of the death of a group leader
- K_n is the number of group leaders killed in period n
- $killed_n$ is the number of covert strike fatalities in period n
- δ is a depreciation constant by which the effect of an attack depreciates in each subsequent period
- D_n is the 30-day difference between periods n and t:

$$D_n = \text{floor}(\frac{t - n}{30})$$

Findings

Parameters used:

- α = 0.1
- δ = 0.6
- x = 60, 180, 360 (2, 6, 12 months)

LM of log intervals (x = 180)

No fixed effects

term	estimate	std.error	statistic	p.value
(Intercept)	1.54	0.13	11.64	0.00
log(killed)	-0.07	0.04	-1.74	0.08

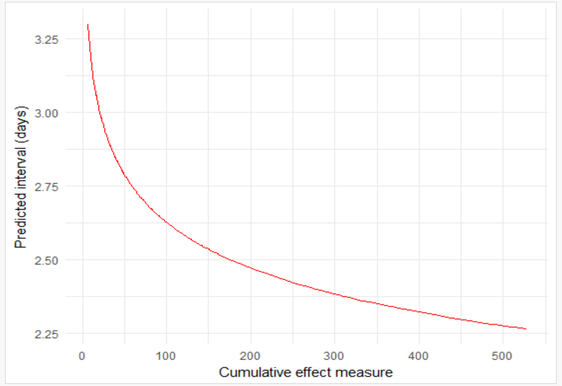
Year fixed effects (baseline 2012)

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.9097	0.2328	8.20	0.0000
log(killed)	-0.1274	0.0508	-2.51	0.0126
factor(year)2013	-0.0087	0.1285	-0.07	0.9461
factor(year)2014	-0.3569	0.1112	-3.21	0.0015
factor(year)2015	-0.1940	0.1248	-1.55	0.1210

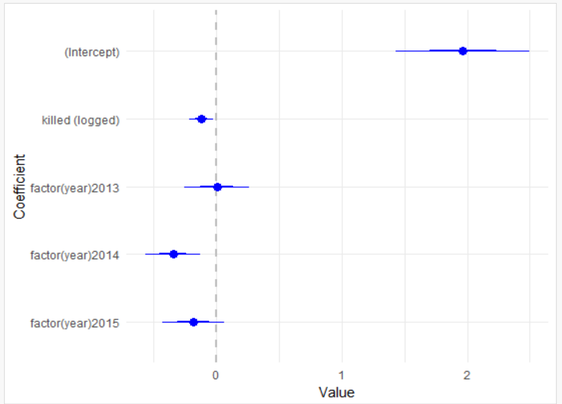
Results (x = 180):

- Small but significant (at 0.1 and 0.05 levels) negative association between cumulative effect measure and interval between attacks
- A 100% increase in the cumulative effects measure associated with 7% – 12.7% decrease in number of days between attacks
- Relative to base year 2012, years 2013 to 2015 associated with shorter intervals between attacks; association significant for year 2014 at 0.01 level
- Small R^2 – 0.0089 and 0.063 for no fixed effect and year fixed effects models, respectively
- Similar values when x = 60 or 360

Predicted intervals without fixed effects



LM of log intervals with fixed effects



Conclusion

- Slight negative association between covert strike fatalities and terrorist attack intervals
- Parsimonious model ignores many potentially important factors (e.g. geospatial) and explains only a small part of total variation
- Measuring intervals in days (rather than hours or minutes) may be too blunt as many attacks occur in quick succession, sometimes on the same date