Terrorism Financing, Recruitment and Attacks

Nicola Limodio

Bocconi University

Political Economy of Finance 2019 Conference

October 2019
Global Terrorism on the Rise
Global Terrorism on the Rise

Definition

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Increase in Attacks and Terrorism Financing

Terrorism financing part of such surge (Feldstein, 2008)

Global effort in curbing this link, especially post 9/11

Lack of evidence on this relation

→ Challenging to measure the object of study

→ Tough quasi-experimental setting

This is costly

→ Scope of regulation under attack

→ Existence and funding of financial counter-terrorism
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Research Question
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Does Terrorism Financing promote Attacks?
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How does Financing interact with Recruitment?
Key Question

Do the timing and location of finance affect attacks?

- Not trivial - frictions to the internal capital market
  - Frictionless world → No relation, smoothing
  - Frictions to transfers → Immediate relation

My Paper → Evidence of frictions & immediate attacks

Implications → Financial counter-terrorism can lower attacks and casualties
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A Case Study

[Graph showing the number of terrorist attacks over time, with a significant increase around 2015, labeled as "World"]]
A Case Study - Pakistan

[Graph showing the number of terrorist attacks in the world and Pakistan from 2000 to 2015. The graph indicates a significant increase in terrorist attacks in Pakistan in the years 2008-2010.]
This Paper

Empirical Test & Two Novel Methods

Empirical Test in Pakistan

1. Panel of 1545 Cities over 96 quarter-years '92-'15
2. Universe of Terrorist Attacks (∼12,000 events)
3. Natural Experiment → Exogenous Variation in Terr. Financing

Methods

1. Novel City-Organization Variation
   ∗ Dissect supply vs demand & estimate elasticity
2. Measure Terrorist Recruitment
   ∗ Dark web data on Jihadist fora, judges & machine learning

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Financing, Recruitment and Attacks
October 2019
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1. Novel City-Organization Variation → **Supply is Key**
   * Dissect supply vs demand & estimate elasticity → **(0.25)**
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Organizational Economics of Terrorist and Violent Groups:


Recruitment - Scanlon and Gerber (2014) and Mueller and Rauh (2018),

Determinants of Terrorism:

- Krueger and Maleˇckov´a (2002), Abadie (2006), Benmelech and Berrebi (2007), Krueger and Maleˇckov´a (2009), Blair, Christine Fair, Malhotra and Shapiro (2013)

Income Shocks and Conflict:

- Cross-country - Miguel, Satyanath and Sergenti (2004), Miguel and Satyanath (2011), Besley and Persson (2011), Bazzi and Blattman (2014);
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3. Methods & Placebo
Natural Experiment
Exogenous Variation in Terrorism Financing

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Exogenous Variation in Terrorism Financing

Zakat - Islamic Obligation
- Donations at Ramadan
  - Individual & voluntary contribution by Muslims
  - Donations through charities (specializing in Zakat)

... BUT in PAK
- Mandatory Gvt Scheme
  - 2.5% levy on bank deposits ≥ threshold
  - Gvt taxes ↓ → charity donations ↑ → financing & attacks ↑

Identification
- timing
- geography
- threshold

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Timing - it nets out seasonality

- Tax only paid on first day of Ramadan
- Ramadan follows Lunar Calendar → shifts every year (control seasonality, income shocks)

<table>
<thead>
<tr>
<th>Year</th>
<th>Ramadan 1st Day</th>
</tr>
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<tbody>
<tr>
<td>1992</td>
<td>4 April</td>
</tr>
<tr>
<td>1995</td>
<td>1 February</td>
</tr>
<tr>
<td>1998</td>
<td>30 December</td>
</tr>
<tr>
<td>2001</td>
<td>16 November</td>
</tr>
<tr>
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Exemptions

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Financing, Recruitment and Attacks

October 2019
PAK is a Sunni Islamic Republic → Sunni vs Non-Sunni cities & org.
Geography - Sunni vs Non-Sunni

PAK is a Sunni Islamic Republic → Sunni vs Non-Sunni cities & org.

- Sunni
- Shia
- Mixed
- Others

Exemptions

Financing, Recruitment and Attacks

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Threshold - Exogenously Determined to PAK

The value of 612.32 grams of silver (52 tolas) at current price (0.98 correlation) - Local Sharia Interpretation - Avg. value is 250 USD

PK not top 20 producer/consumer, silver as exogenous

International Price of Silver in USD per Ounce − Threshold Announcement Day

Limodio Financing, Recruitment and Attacks

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Some donations → terrorist organizations.

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Charity Donation  | Terrorism Financing | Zakat Tax | Wealth

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Charity Donation

Silver Price
↓

Terrorism Financing
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### Relation between Donations and Silver

<table>
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<tr>
<th>Variables</th>
<th>Zakat Donated</th>
<th>Ln(PKRs)</th>
<th>Silver $t$</th>
<th>Sunni $d$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.0753**</td>
<td>0.0940**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.0371)</td>
<td>(0.0396)</td>
<td></td>
</tr>
<tr>
<td>Ln Yearly Income</td>
<td>0.160***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0196)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Observations</td>
<td>5467</td>
<td>5467</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division, Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Adj. R sq.</td>
<td>0.139</td>
<td>0.187</td>
<td></td>
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<tr>
<td>Mean Dep. Var.</td>
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**Notes:** Standard errors in brackets clustered at household level. Data from the PSLM survey conducted by the Pakistan Bureau of Statistics.
Relation between Donations and Silver

Table 1: Zakat Donations and Silver

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Non-Sunni Donations don’t respond to Silver
Non-Sunni Donations don’t respond to Silver

![Graph showing the 1 St. Dev of Silver on Ln Zakat Donation across different income quartiles. The graph compares Non-Sunni and Sunni donations, with a clear indication that Non-Sunni donations do not respond to Silver across all income quartiles.]
Sunni Donations respond to Silver
Way Ahead

1. Anecdotes on Charities & Terrorism Financing
2. Stylized fact on more attacks in Sunni cities when silver ↑
3. Dissect Demand vs Supply and Elasticity of Attacks to Finance
4. Terrorist recruitment & Complementarity
5. Placebo with Eid Adha & Silver + Robustness Checks
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Charities, Terrorism and Silver
Terrorist Groups control Charities

One key anecdote (more in the paper)


Running his own charity until Feb 2018.

"Pakistan bans charities linked to founder of militant group" (Reuters)
Terrorist Groups control Charities

Pakistan on FATF grey list for not fighting hard terrorist financing

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Limodio  Financing, Recruitment and Attacks  October 2019
Terrorist Groups control Charities

Pakistan on FATF grey list for not fighting hard terrorist financing

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GVT Aware Zakat Money to Terrorists
Zakat must not land in wrong hands: govt

Dawn, most circulated Pakistani newspaper, July 13th 2015, Link
Terrorism Financing and Attacks
Data and Test

Panel of Cities and Attacks

1,545 Cities & Universe of Attacks (~12,000), 1992-2015

1. Lead-and-Lag - Terror attacks regressed on
   a. over 4 dummies around Ramadan
   b. interacted with a dummy for Sunni City and Silver Prices
   c. including city and quarter-year FEs

2. Difference-In-Difference

\[ \text{Terror}_{ct} = \beta_1 \text{Sunni}_c \times \text{Silver}_t + \beta_2 \text{Sunni}_c \times \text{Ramadan}_t + \beta_3 \text{Sunni}_c \times \text{Silver}_t \times \text{Ramadan}_t + \theta_{c} + \theta_{t} + \epsilon_{ct} \]

Terror - dummy in c and t, Ramadan - quarter of Ramadan and following; Silver - standardized price

!!! Placebo Eid Adha !!!
Data and Test

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Financing, Recruitment and Attacks

October 2019
Data and Test

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Financing, Recruitment and Attacks

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Probability of a Terrorist Attack

Quarter

Silver Price − Mean

Average Silver Price → No Terrorist Attacks after Ramadan

Limodio
Financing, Recruitment and Attacks
October 2019
Average Silver Price $\rightarrow$ No Terrorist Attacks after Ramadan
Probability of a Terrorist Attack

Silver Price − Mean Silver Price − 1 SD Higher

Higher Silver Prices → More Terrorist Attacks only after Ramadan

Limodio Financing, Recruitment and Attacks October 2019
Higher Silver Prices $\rightarrow$ More Terrorist Attacks \textit{only after} Ramadan
<table>
<thead>
<tr>
<th>Variables</th>
<th>Terror Attacks</th>
<th>Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dummy Ln(1+N)</td>
<td>Ln(1+N)</td>
</tr>
<tr>
<td>Sunni c</td>
<td>0.00115</td>
<td>0.00216</td>
</tr>
<tr>
<td>Silver t</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.00296)</td>
<td>(0.00420)</td>
</tr>
<tr>
<td>Ramadan t</td>
<td>0.00324**</td>
<td>0.00149</td>
</tr>
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</tr>
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<td>Silver t</td>
<td>0.00727***</td>
<td>0.00471**</td>
</tr>
<tr>
<td>Ramadan t</td>
<td></td>
<td>0.00685*</td>
</tr>
<tr>
<td></td>
<td>(0.00219)</td>
<td>(0.00196)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.00360)</td>
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<tr>
<td>City FE</td>
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<td>Yes</td>
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<tr>
<td>Quarter-Year FE</td>
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<td>Yes</td>
</tr>
<tr>
<td>Obs.</td>
<td>148320</td>
<td>148320</td>
</tr>
<tr>
<td>Adj. R sq.</td>
<td>0.183</td>
<td>0.280</td>
</tr>
<tr>
<td>Mean Dep. Var.</td>
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<td>0.0311</td>
</tr>
<tr>
<td></td>
<td>0.0428</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at city level.
Table 2: Terrorist Attacks, Sunni Cities and Silver

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Terror Attacks Dummy</th>
<th>(2) Attacks Ln(1+N)</th>
<th>(3) Casualties Ln(1+N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Sunni}_c \times \text{Silver}_t$</td>
<td>0.00115</td>
<td>0.00216</td>
<td>-0.00111</td>
</tr>
<tr>
<td></td>
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<tr>
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Notes: Standard errors clustered at city level.
Only Capital-Intensive Attacks

Use the GTD classification of attacks
Define a new variable "Capital-Intensive Attacks"
This includes:
- Bombing/Explosion
- Unarmed Assault (chemical, biological and radiological weapons)
- Assassinations (typically done through bombings)
Evidence of increase in these attacks only
Other attacks do not react (e.g. kidnapping, knife attacks et cetera)
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Method #1

Dissect the Demand and Supply of Terrorist Attacks
New - City-Organization Variation

Panel of 1,545 Cities → City-Time Variation

Example: (Karachi, 2010q1) (Karachi, 2010q2)...

Observe an “equilibrium” attack, cannot dissect demand from supply

Idea → Build a City-Organization-Time Panel

Example: (Karachi, Taliban, 2010q1), (Karachi, Intiqami, 2010q1)...

Limodio Financing, Recruitment and Attacks October 2019
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Financing, Recruitment and Attacks
October 2019
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Model - City-Organization Variation

Model (with and without $\iota_{ct}$ and $\iota_{ot}$ FEs)

$\text{Terror}_{ct} = d_1 \text{Sunni} \times \text{Silver}_{t} + d_2 \text{Sunni} \times \text{Ramadan}_{t} + \ldots + d_6 \text{Sunni} \times \text{Silver}_{t} \times \text{Ramadan}_{t} + \iota_{c} + \iota_{o} + \iota_{t} + \epsilon_{ct}$

Limodio Financing, Recruitment and Attacks October 2019
Model - City-Organization Variation

Can focus on *same* city-time & *different* terr. organizations, by
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✓ Coding treated organizations (Sunni vs non-Sunni)
Model - City-Organization Variation

Can focus on same city-time & different terr. organizations, by

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✓ Exploiting within-city and within-organization variation
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Smaller panel - 485 cities, 20 organizations for 96 quarter-years
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Model (with and without \( \iota_{ct} \) and \( \iota_{ot} \) FEs)

\[
Terror_{cot} = d_1 \text{Sunni}_c \times Silver_t + d_2 \text{Sunni}_c \times Ramadan_t + \\
+ d_3 \text{Sunni}_c \times Silver_t \times Ramadan_t + d_4 \text{Sunni}_o \times Silver_t + d_5 \text{Sunni}_o \times Ram.n_t + \\
+ d_6 \text{Sunni}_o \times Silver_t \times Ramadan_t + \iota_c + \iota_o + \iota_t + \varepsilon_{cot}
\]
Notes: Standard errors clustered at city and organization. Results with city, organization and time fixed effects.
Method #2

Measuring Terrorist Recruitment
Measuring Terrorist Recruitment

Hard task - not observable.

Idea - use the dark web!

Dark web - network that requires specific access software (TOR - The Onion Router), not browsers or search engines

Illicit markets (guns, drugs, pornography, gambling) & organizations (Biryukov et al. (2014))

Use message platforms (similar to Reddit) of Jihadi groups to measure recruitment

Scraped & joined forces with the AI Lab Dark Web - University of Arizona

Downloaded 50+ GB: 28 boards in 5 languages (En, Ar, Fr, De, Ru), 2000 - 2012
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Measuring Terrorist Recruitment

Method from "Security Informatics" by Scanlon and Gerber (2014)

Replicate, improve and expand (only ENG for now)

Steps
1. random sample of messages
2. two separate judges in the US evaluate the "intent to recruit violent extremists to some group or movement"
3. mark each post with a dummy Yes or No (11%)
4. use natural language processing and support vector machine to backout the textual regularities of "recruitment" posts
5. generates a dummy for all platforms & languages (8M messages)

Performance and Messages
Limodio Financing, Recruitment and Attacks October 2019
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"a*******m a***i g****1 if you need help im your brother and closer then you think. inshallah just ask and i will help you as best as i can inshallah"

"i must tell you i was with ******* a few days before he was arrested and he knew it was coming. he is doing ok now. bro there are a few brothers out there that are true to Allah and are very close to you."
Two posts rated as recruitment (1)

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Two posts rated as recruitment (2)

Another message with members discussing the joining of militants in Somalia

A***l K**i states: "Somalia could actually be an ideal base for physical and weapons training. . . and from there one could join the brothers in the liberation of Mogadishu and from there move on to other Jihadi fronts"

Other member: "God help me for I am certain that this is the ideal alternative front to Afghanistan in producing terrorism and exporting it to the entire world"

Others went on to discuss practical details, including how to get there.

Directed towards a militant Islamist website run by foreign jihadis in Somalia with helpful information.
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Recruitment & Messages over time - ENG

Limodio Financing, Recruitment and Attacks October 2019
Recruitment & Messages over time - ENG

[Graph showing the total number of messages and recruitment intensity over time from 2000q4 to 2012q4.]

Limodio
Financing, Recruitment and Attacks
October 2019
Recruitment

Recruitment Intensity in PK → recr. messages mentioning PK

Recruitment \( t \) = Recruitment Messages \( t \) / Total Messages \( t \)

Stats PK Recruitment

Interpretation → financing unexpected, effect conditional on recruitment

Smaller sample - 2000-2012 (rather than '92-'15). Model

\[
Terror_{t} = g_{1} \times Sunni_{t} \times Silver_{t} + g_{2} \times Sunni_{t} \times Ramadan_{t} + g_{3} \times Sunni_{t} \times Silver_{t} \times Ramadan_{t} + g_{4} \times Sunni_{t} \times Recruitment_{t-1} + g_{5} \times Sunni_{t} \times Silver_{t} \times Recruitment_{t-1} + g_{6} \times Sunni_{t} \times Ramadan_{t} \times Recruitment_{t-1} + \eta_{t} + \epsilon_{t}
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Recruitment

Recruitment Intensity in PK $\rightarrow$ recr. messages mentioning PK

$$\text{Recruitment}_t = \frac{\text{Recruitment Messages}_t}{\text{Total Messages}_t}$$

Stats PK Recruitment
Recruitment

Recruitment Intensity in PK → recr. messages mentioning PK

\[ \text{Recruitment}_t = \frac{\text{Recruitment Messages}_t}{\text{Total Messages}_t} \]

Stats PK Recruitment

Interpretation → financing unexpected, effect conditional on recruitment

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Financing, Recruitment and Attacks

October 2019
Recruitment

Recruitment Intensity in PK → recr. messages mentioning PK

\[ \text{Recruitment}_t = \frac{\text{Recruitment Messages}_t}{\text{Total Messages}_t} \]

Stats PK Recruitment

Interpretation → financing unexpected, effect conditional on recruitment

Smaller sample - 2000-2012 (rather than ’92-’15). Model (Recruitment\(_{t-1}\) given):

\[ \text{Terror}_t = g_1 \text{Sunni}_o \times \text{Silver}_t + g_2 \text{Sunni}_o \times \text{Ramadan}_t + g_3 \text{Sunni}_o \times \text{Silver}_t \times \text{Ramadan}_t + g_4 \text{Sunni}_o \times \text{Recruitment}_t - 1 + g_5 \text{Sunni}_o \times \text{Silver}_t \times \text{Recruitment}_t - 1 + g_6 \text{Sunni}_o \times \text{Ramadan}_t \times \text{Recruitment}_t - 1 + \ldots \]
Recruitment

Recruitment Intensity in PK $\rightarrow$ recr. messages mentioning PK

$\text{Recruitment}_t = \frac{\text{Recruitment Messages}_t}{\text{Total Messages}_t}$ Stats PK Recruitment

Interpretation $\rightarrow$ financing unexpected, effect conditional on recruitment

Smaller sample - 2000-2012 (rather than '92-'15). Model ($\text{Recruitment}_{t-1}$ given):

$$\text{Terror}_{cot} = g_1 \text{Sunni}_o \times \text{Silver}_t + g_2 \text{Sunni}_o \times \text{Ramadan}_t +$$

$$+ g_3 \text{Sunni}_o \times \text{Silver}_t \times \text{Ramadan}_t + g_4 \text{Sunni}_o \times \text{Recruitment}_{t-1} +$$

$$+ g_5 \text{Sunni}_o \times \text{Silver}_t \times \text{Recruitment}_{t-1} + g_6 \text{Sunni}_o \times \text{Ramadan}_t \times \text{Recruitment}_t +$$

$$+ g_7 \text{Sunni}_o \times \text{Silver}_t \times \text{Ramadan}_t \times \text{Recruitment}_{t-1} + \nu_o + \nu_{ct} + \epsilon_{cot}$$
Notes: Standard errors are clustered at organization and city. Fixed effects at City, Organization and Time.
Placebo and Robustness Checks
1. City-level seasonality - local economic shocks
2. State-time fixed effects - states on different trends
3. Replace silver with time FEs and correlate with silver
4. The independent effect of commodities on terror
5. Local wages & labour supply - no response
6. Common Support Sunni vs non-Sunni groups
7. Robustness to classification of 2 groups
8. No effect of mines on attacks
9. No effect of Zakat on religiosity
Placebo - Eid Adha
Placebo - Eid Adha

1. City-level seasonality - local economic shocks

2. State-time fixed effects - states on different trends

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Placebo - Eid Adha

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2. State-time fixed effects - states on different trends

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2. State-time fixed effects - states on different trends
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5. Local wages & labour supply - no response
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Financing, Recruitment and Attacks
October 2019
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Financing, Recruitment and Attacks
October 2019
Concluding Remarks

1. Evidence that Terrorism Financing & Recruitment → Attacks → Mechanism based on Terrorist Organizations → Fascinating setting & country

2. Three innovative elements → Demand vs supply in conflict and crime → Estimate the elasticity of terror attacks to financing → Study terrorist recruitment through machine-learning

3. Future → More data, judges & funding (suggestions welcome)
Concluding Remarks

1. Evidence that Terrorism Financing & Recruitment → Attacks
Concluding Remarks

1. Evidence that Terrorism Financing & Recruitment $\rightarrow$ Attacks
   $\rightarrow$ Mechanism based on Terrorist Organizations

Limodio
Financing, Recruitment and Attacks
October 2019
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Financing, Recruitment and Attacks
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   → Mechanism based on Terrorist Organizations
   → Fascinating setting & country

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Concluding Remarks

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   → Mechanism based on Terrorist Organizations
   → Fascinating setting & country

2. Three innovative elements
   → Demand vs supply in conflict and crime
Concluding Remarks

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   \(\rightarrow\) Mechanism based on Terrorist Organizations
   \(\rightarrow\) Fascinating setting & country

2. Three innovative elements
   \(\rightarrow\) Demand vs supply in conflict and crime
   \(\rightarrow\) Estimate the elasticity of terror attacks to financing
Concluding Remarks

1. Evidence that Terrorism Financing & Recruitment $\rightarrow$ Attacks
   $\rightarrow$ Mechanism based on Terrorist Organizations
   $\rightarrow$ Fascinating setting & country

2. Three innovative elements
   $\rightarrow$ Demand vs supply in conflict and crime
   $\rightarrow$ Estimate the elasticity of terror attacks to financing
   $\rightarrow$ Study terrorist recruitment through machine-learning
Concluding Remarks

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   → Mechanism based on Terrorist Organizations
   → Fascinating setting & country

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   → Estimate the elasticity of terror attacks to financing
   → Study terrorist recruitment through machine-learning

3. Future
   → More data, judges & funding (suggestions welcome)
Thank You

www.nicolalimodio.com

nicola.limodio@unibocconi.it

https://twitter.com/NicolaLimodio
<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zakat Spending per 1,000 - Ln(PKRs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( Silver_t )</td>
<td>-0.0978</td>
<td>(0.251)</td>
<td></td>
</tr>
<tr>
<td>( Silver_t \times Sunni_d )</td>
<td>-0.698*</td>
<td>-0.698***</td>
<td>-0.327***</td>
</tr>
<tr>
<td>( Sunni_d )</td>
<td>2.202**</td>
<td>(1.073)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.191</td>
<td>(0.749)</td>
<td></td>
</tr>
<tr>
<td>Measure of Silver Price</td>
<td>Ln(P)</td>
<td>Ln(P)</td>
<td>1 S.D.</td>
</tr>
</tbody>
</table>

<p>| Observations | 144 | 144 | 144 |
| District, Year FE | Yes | Yes |     |
| Adj. R sq. | 0.131 | 0.587 | 0.586 |
| Mean Dep. Var. | 0.987 | 0.987 | 0.987 |
| S.D. Dep. Var. | 0.288 | 0.288 | 0.288 |</p>
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<thead>
<tr>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1/1980</td>
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<tr>
<td>1/1/1985</td>
</tr>
<tr>
<td>1/1/1990</td>
</tr>
<tr>
<td>1/1/1995</td>
</tr>
<tr>
<td>1/1/2000</td>
</tr>
<tr>
<td>1/1/2005</td>
</tr>
<tr>
<td>1/1/2010</td>
</tr>
<tr>
<td>1/1/2015</td>
</tr>
</tbody>
</table>

**Volatility per Quarter**
Table 6: Type of Terrorist Attack and Silver - x100

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Bombs Dummy</th>
<th>(2) Assas. Dummy</th>
<th>(3) Unarmed Dummy</th>
<th>(4) Bombs Ln</th>
<th>(5) Assas. Ln</th>
<th>(6) Unarmed Ln</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunni_c ×</td>
<td>0.19</td>
<td>0.065</td>
<td>0.011</td>
<td>0.0021</td>
<td>0.016</td>
<td>0.006</td>
</tr>
<tr>
<td>Silver_t</td>
<td>(0.25)</td>
<td>(0.076)</td>
<td>(0.0009)</td>
<td>(0.34)</td>
<td>(0.073)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>Sunni_c ×</td>
<td>0.20</td>
<td>0.06</td>
<td>0.022*</td>
<td>0.071</td>
<td>0.071*</td>
<td>0.0006</td>
</tr>
<tr>
<td>Ramadan_t</td>
<td>(0.12)</td>
<td>(0.053)</td>
<td>(0.012)</td>
<td>(0.11)</td>
<td>(0.041)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Sunni_c ×</td>
<td>0.46***</td>
<td>0.064</td>
<td>-0.017</td>
<td>0.29*</td>
<td>0.078</td>
<td>-0.0006</td>
</tr>
<tr>
<td>Silver_t ×</td>
<td>(0.17)</td>
<td>(0.075)</td>
<td>(0.016)</td>
<td>(0.15)</td>
<td>(0.06)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Ramadan_t</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C, Q-Y FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Obs.</td>
<td>148320</td>
<td>148320</td>
<td>148320</td>
<td>148320</td>
<td>148320</td>
<td>148320</td>
</tr>
<tr>
<td>A. R sq.</td>
<td>0.154</td>
<td>0.114</td>
<td>0.0115</td>
<td>0.214</td>
<td>0.216</td>
<td>0.0122</td>
</tr>
<tr>
<td>M.D.V.</td>
<td>0.0210</td>
<td>0.003</td>
<td>0.0001</td>
<td>0.020</td>
<td>0.003</td>
<td>0.0001</td>
</tr>
<tr>
<td>S.D.D.V.</td>
<td>0.144</td>
<td>0.062</td>
<td>0.0127</td>
<td>0.153</td>
<td>0.060</td>
<td>0.0134</td>
</tr>
<tr>
<td>Variables</td>
<td>(1) Unskilled Wage Ln(PKR)</td>
<td>(2) Carpenter Wage Ln(PKR)</td>
<td>(3) Builder Wage Ln(PKR)</td>
<td>(4) Electrician Wage Ln(PKR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
<td>----------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Suni_c \times Silver_t$</td>
<td>0.702 (0.461)</td>
<td>0.0986 (0.217)</td>
<td>0.257 (0.251)</td>
<td>0.843 (0.852)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Suni_c \times Ramadan_t$</td>
<td>0.277 (0.209)</td>
<td>0.0200 (0.128)</td>
<td>0.0213 (0.133)</td>
<td>0.418 (0.411)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Suni_c \times Silver_t \times Ramadan_t$</td>
<td>-0.665 (0.437)</td>
<td>0.0741 (0.231)</td>
<td>-0.120 (0.250)</td>
<td>0.808 (0.824)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month-Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
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<tr>
<td>Obs.</td>
<td>1480</td>
<td>1480</td>
<td>1480</td>
<td>1480</td>
<td></td>
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<tr>
<td>Adj. R sq.</td>
<td>0.883</td>
<td>0.936</td>
<td>0.922</td>
<td>0.919</td>
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<tr>
<td>Mean Dep. Var.</td>
<td>6.198</td>
<td>6.703</td>
<td>6.800</td>
<td>4.733</td>
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<tr>
<td>S.D. Dep. Var.</td>
<td>0.198</td>
<td>0.178</td>
<td>0.204</td>
<td>0.317</td>
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</tr>
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</table>
Table 15: Terrorist Attacks, Sunni Cities, Silver and City Seasonalities

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Terror Dummy</th>
<th>(2) Attacks Ln(1+N)</th>
<th>(3) Killed Ln(1+N)</th>
<th>(4) Wounded Ln(1+N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( Sunni_c \times Silver_t )</td>
<td>0.00163</td>
<td>0.00237</td>
<td>-0.000759</td>
<td>-0.00179</td>
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<tr>
<td></td>
<td>(0.00293)</td>
<td>(0.00405)</td>
<td>(0.00427)</td>
<td>(0.00474)</td>
</tr>
<tr>
<td>( Sunni_c \times Ramadan_t )</td>
<td>0.00393**</td>
<td>0.00218</td>
<td>0.00147</td>
<td>0.00107</td>
</tr>
<tr>
<td></td>
<td>(0.00170)</td>
<td>(0.00160)</td>
<td>(0.00214)</td>
<td>(0.00231)</td>
</tr>
<tr>
<td>( Sunni_c \times Silver_t \times Ramadan_t )</td>
<td>0.00630***</td>
<td>0.00430**</td>
<td>0.00340</td>
<td>0.00521</td>
</tr>
<tr>
<td></td>
<td>(0.00243)</td>
<td>(0.00211)</td>
<td>(0.00308)</td>
<td>(0.00341)</td>
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</table>

City, Quarter-Year FE       Yes       Yes       Yes       Yes
City \times Quarter FE      Yes       Yes       Yes       Yes
Obs.                       148320    148320    148320    148320
Adj. R sq.                 0.183      0.280      0.211      0.213
Mean Dep. Var.             0.0314     0.0311     0.0270     0.0305
S.D. Dep. Var.             0.175      0.198      0.237      0.277
Table 16: Terrorist Attacks, Sunni Cities, Silver and State Time-Varying Shocks

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Terror Attacks Dummy</th>
<th>(2) Killed Ln(1+N)</th>
<th>(3) Wounded Ln(1+N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Sunni}_c \times \text{Silver}_t$</td>
<td>-0.00144 (0.00324)</td>
<td>-0.000861 (0.00453)</td>
<td>-0.00399 (0.00484)</td>
</tr>
<tr>
<td>$\text{Sunni}_c \times \text{Ramadan}_t$</td>
<td>0.00337** (0.00169)</td>
<td>0.00197 (0.00162)</td>
<td>0.000413 (0.00211)</td>
</tr>
<tr>
<td>$\text{Sunni}_c \times \text{Silver}_t \times \text{Ramadan}_t$</td>
<td>0.00627*** (0.00236)</td>
<td>0.00413** (0.00213)</td>
<td>0.00333 (0.00316)</td>
</tr>
</tbody>
</table>

City, Q-Y FE: Yes
State × Q-Y FE: Yes
Obs.: 148320
Adj. R sq.: 0.191 0.287 0.216 0.219
Mean Dep. Var.: 0.0314 0.0311 0.0270 0.0305
S.D. Dep. Var.: 0.175 0.198 0.237 0.277
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Financing, Recruitment and Attacks
October 2019
Table 17: Organizations and Attacks - Excluding 2006-2009

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Probability of a Terrorist Attack</td>
<td>Probability of a Terrorist Attack</td>
<td>Probability of a Terrorist Attack</td>
</tr>
<tr>
<td>$Sunni_c \times Silver_t$</td>
<td>-0.000502</td>
<td>-0.000502</td>
<td>(0.000363)</td>
</tr>
<tr>
<td>$Sunni_c \times Ramadan_t$</td>
<td>0.000004</td>
<td>0.000004</td>
<td>(0.000110)</td>
</tr>
<tr>
<td>$Sunni_c \times Silver_t \times$</td>
<td>0.000135</td>
<td>0.000135</td>
<td>(0.000130)</td>
</tr>
<tr>
<td>$Ramadan_t$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$Sunni_o \times Silver_t$</td>
<td>0.000778</td>
<td>0.000778</td>
<td>(0.000980)</td>
</tr>
<tr>
<td>$Sunni_o \times Ramadan_t$</td>
<td>0.000137</td>
<td>0.000137</td>
<td>(0.000147)</td>
</tr>
<tr>
<td>$Sunni_o \times Silver_t \times$</td>
<td>0.000567**</td>
<td>0.000567**</td>
<td>(0.000252)</td>
</tr>
<tr>
<td>$Ramadan_t$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

City FE: Yes, Terr. Org. FE: Yes

Obs 931,200, Adj. R sq. 0.0171, 0.0373, 0.0149
Mean Dep. Var. 0.0009, 0.0009, 0.0009
S.D. Dep. Var. 0.0311, 0.0311, 0.0311

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Classification of Groups

Two groups may be disputed:

- Muttahida Qami Movement - Non-Religious & Political Group
- Tribesmen Group - Operating in Shia and Animist Areas

Could be argued that their operatives are also Sunni & could be treated by the Zakat financing.

Two ways to check for robustness:
1. Run regressions re-coding them as Sunni
2. Exclude these groups

Results are robust to this.
Classification of Groups

Two groups are may be disputed

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Classification of Groups

Two groups are may be disputed

*Muttahida Qami Movement* - Non-Religious & Political Group

*Tribesmen Group* - Operating in Shia and Animist Areas

Could be argued that their operatives are also Sunni & could be treated by the Zakat financing

Two ways to check for robustness

1. Run regressions re-coding them as Sunni
2. Exclude these groups

Results are robust to this
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| Terr. Org. FE | Yes | Yes | Yes | Yes |
| City FE       | Yes |    | Yes |     |
| Time FE       | Yes |    | Yes |     |
| City Time FE  |   |    | Yes |     |
Silver Prices generate increase in local rents
This increases local conflict and terrorism
Pakistan presents very few mines
Checks
1. Placebo shows already that silver only at Ramadan in Sunni cities
2. Run regressions on separated samples (near a mine or not) - no difference in point estimates of effects
Results are robust to this
Argument

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Silver Prices generate increase in local rents
Mines and Silver Prices

Argument

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### Mines and Silver Prices

**Argument**

*Silver Prices generate increase in local rents*

*This increases local conflict and terrorism*

Pakistan presents very few mines
Argument

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*This increases local conflict and terrorism*

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Checks
Mines and Silver Prices

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Results are robust to this
Table 19: Silver, Mines and Attacks

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<td>Att.ks Ln</td>
<td>Casu.s Ln</td>
<td>Terror Dummy</td>
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<tr>
<td>0.01</td>
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</tr>
<tr>
<td>0.02</td>
<td>10000</td>
</tr>
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<td>0.03</td>
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Limodio

Financing, Recruitment and Attacks

October 2019
<table>
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<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>S.D.</th>
<th>Min</th>
<th>Max</th>
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<td>Panel A - Universe of English-Native Messages</td>
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<td></td>
<td></td>
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<tr>
<td>Number of Messages</td>
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<td>6980.9</td>
<td>5246.8</td>
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<td>15483</td>
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<td>371.3</td>
<td>273.9</td>
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<td>Number of Recruitment Messages on Pakistan</td>
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<td>Recruitment Intensity</td>
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<td>0.016</td>
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<td>0.006</td>
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Table 7: Summary Statistics on Jihadist Messages and Recruitment

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<td><strong>Panel A - Universe of English-Native Messages</strong></td>
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<td>0.010</td>
<td>0.006</td>
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</table>
This picture compares the volatility in the price of silver and gold in a given quarter between 2000 and 2015. The volatility is defined as the standard deviation of the daily difference in the natural logarithm of silver prices in a quarter. The average volatility of both commodities is 0.0154 and silver is 43% less volatile than gold, the difference is -0.0067***.
Notes: This picture compares the volatility in the price of silver and gold in a given quarter between 2000 and 2015. The volatility is defined as the standard deviation of the daily difference in the natural logarithm of silver prices in a quarter. The average volatility of both commodities is 0.0154 and silver is 43% less volatile than gold, the difference is -0.0067***.
<table>
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<th>Date</th>
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</thead>
</table>

Notes:
This picture reports the same measure of volatility, but only for silver, between 1980 and 2015.
Notes: This picture reports the same measure of volatility, but only for silver, between 1980 and...
Recruitment Over Time

Notes:
This reports the same measure of volatility, but only for silver, between 1980 and 2015.
Notes: This reports the same measure of volatility, but only for silver, between 1980 and 2015.
## List of Jihadist Platforms

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<th>Language</th>
<th>Num. of Members</th>
<th>Num. of Messages</th>
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<td>Gawaher</td>
<td>English</td>
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<td>Islamic Awakening</td>
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<td><strong>Non-Sunni Organizations</strong></td>
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<td>Muttahida Qami Movement (Non Religious)</td>
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<td>Tribesmen (Tribal - Animists)</td>
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<td>Year FE and Silver Prices</td>
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Notes: The slope coefficient and silver prices are correlated 0.51***.
Notes: The slope coefficient and silver prices are correlated 0.51***.
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<table>
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<tr>
<th>Ramadan Quarters</th>
<th>Coefficient Silver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>Silver</td>
</tr>
</tbody>
</table>

Limodio Financing, Recruitment and Attacks October 2019
Year FE and Silver Prices

Limodio
Financing, Recruitment and Attacks
October 2019
### Table 15: Terrorist Attacks, Sunni Cities and Commodities out of Ramadan

<table>
<thead>
<tr>
<th>Variables</th>
<th>Terror Attacks</th>
<th>Killed</th>
<th>Wounded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dummy Ln(1+N)</td>
<td>-0.00579</td>
<td>-0.00322</td>
<td>-0.00565</td>
</tr>
<tr>
<td>Sunni × Silver</td>
<td>-0.00219</td>
<td>-0.00207</td>
<td>-0.00214</td>
</tr>
<tr>
<td>Sunni × Gold</td>
<td>0.00320</td>
<td>0.00310</td>
<td>0.00343</td>
</tr>
<tr>
<td>Sunni × Tin</td>
<td>0.00753</td>
<td>0.00564</td>
<td>0.00456</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City, Quarter-Year FE</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obs.</td>
<td>71070</td>
<td>71070</td>
<td>71070</td>
<td>71070</td>
</tr>
<tr>
<td>Adj. R sq.</td>
<td>0.184</td>
<td>0.277</td>
<td>0.211</td>
<td>0.206</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at city level.

Limodio Financing, Recruitment and Attacks

October 2019
Table 15: Terrorist Attacks, Sunni Cities and Commodities out of Ramadan

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Terror Dummy</th>
<th>(2) Attacks Ln(1+N)</th>
<th>(3) Killed Ln(1+N)</th>
<th>(4) Wounded Ln(1+N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Sunni_c \times Silver_t$</td>
<td>-0.00579 0.00419</td>
<td>-0.00322 0.00406</td>
<td>-0.00565 0.00576</td>
<td>-0.00248 0.00683</td>
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<tr>
<td>$Sunni_c \times Gold_t$</td>
<td>-0.00219 0.00700</td>
<td>-0.00207 0.00755</td>
<td>-0.00214 0.00811</td>
<td>-0.00512 0.0101</td>
</tr>
<tr>
<td>$Sunni_c \times Copper_t$</td>
<td>0.00320 0.00300</td>
<td>0.00310 0.00308</td>
<td>0.00343 0.00318</td>
<td>0.00374 0.00391</td>
</tr>
<tr>
<td>$Sunni_c \times Tin_t$</td>
<td>0.00753 0.00542</td>
<td>0.00564 0.00515</td>
<td>0.00456 0.00670</td>
<td>0.00302 0.00736</td>
</tr>
</tbody>
</table>

City, Quarter-Year FE | Yes | Yes | Yes | Yes
Obs. | 71070 | 71070 | 71070 | 71070
Adj. R sq. | 0.184 | 0.277 | 0.211 | 0.206

Notes: Standard errors clustered at city level.
Definition of Terrorist Attack

The GTD defines a terrorist attack 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.

In practice, this means in order to consider an incident for inclusion in the GTD, all three of the following attributes must be present:

1. The incident must be intentional - the result of a conscious calculation on the part of a perpetrator.
2. The incident must entail some level of violence or immediate threat of violence - including property violence, as well as violence against people.
3. The perpetrators of the incidents must be sub-national actors - the database does not include acts of state terrorism.

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Exemptions

Year 2000 - Supreme Court, Sunni can opt out of Zakat Tax

Implementation - rather marginal, if at all existent

Many Reasons:

1) Procedure - costly in terms of time, money and privacy

2) Knowledge - purposefully limited (PNS and Dawn, link & link), particularly for low & middle income people

3) Legal Uncertainty - series of legal fights (ongoing, i.e. Federal Shariat Court, link)

4) Procedure - costly in terms of time, money and privacy

5) Statistics 1 - current donations in Sunni-areas respond to silver

6) Statistics 2 - no structural break in correlation between government tax receipt and silver after 2000
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Aggregate Individual Donations at the Highest Geography Unit
Aggregate Individual Donations at the Highest Geography Unit
Elasticity of Terror Attacks to Financing

Total Donations in a Division and Year
Elasticity of Terror Attacks to Financing

Group A

Total Donations in a Division and Year

Group B
Elasticity of Terror Attacks to Financing

Total Donations in a Division and Year

Group A
- 75% Attacks

Group B
- 25% Attacks
Elasticity of Terror Attacks to Financing

Group A: 75%
Group B: 25%

75% Attacks
25% Attacks
Elasticity of Terror Attacks to Financing
Assign funds to organization

Study through OLS and IV

\[ \text{Terrorodt} = \text{Donationsodt} + \text{Sundt} \times \text{Silverodt} + \text{E} \]

Assumption: elasticity of terrorism financing to charitable donations.

Literature reports 3 values (between 0.1 and 0.3). Median is 0.2, hence

\[ \text{Elasticity} = \frac{\text{Terrorodt}}{\text{Donationsodt}} \]
Elasticity of Terror Attacks to Financing

Assign funds to organization $o$ in division $d$ at $t$. 
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Study through OLS and IV
Assign funds to organization $o$ in division $d$ at $t$.

Study through OLS and IV

$$\text{Terror}_{odt} = l_1 \text{Donations}_{odt} + \nu_o + \nu_d + \nu_t + \varepsilon_{odt}$$
Elasticity of Terror Attacks to Financing

Assign funds to organization \( o \) in division \( d \) at \( t \).

Study through OLS and IV

\[
\text{Terror}_{odt} = l_1 \text{Donations}_{odt} + \nu_o + \nu_d + \nu_t + \varepsilon_{odt}
\]

\[
\text{Donations}_{odt} = m_1 \text{Sunni}_o \times \text{Silver}_t + \nu_o + \nu_d + \nu_t + u_{odt}
\]
Elasticity of Terror Attacks to Financing

Assign funds to organization \( o \) in division \( d \) at \( t \).

Study through OLS and IV

\[
Terror_{odt} = l_1 \text{Donations}_{odt} + \nu_o + \nu_d + \nu_t + \varepsilon_{odt}
\]

\[
\text{Donations}_{odt} = m_1 Sunni_o \times Silver_t + \nu_o + \nu_d + \nu_t + u_{odt}
\]

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Elasticity of Terror Attacks to Financing

Assign funds to organization $o$ in division $d$ at $t$.

Study through OLS and IV

\[ \text{Terror}_{odt} = l_1 \text{Donations}_{odt} + \nu_o + \nu_d + \nu_t + \varepsilon_{odt} \]

\[ \text{Donations}_{odt} = m_1 \text{Suni}_o \times \text{Silver}_t + \nu_o + \nu_d + \nu_t + \mu_{odt} \]

Assumption: elasticity of terrorism financing to charitable donations. Literature reports 3 values (between 0.1 and 0.3). Median is 0.2, hence

\[ \text{Terr. Financing} = n_1 + n_2 \text{Donations} \rightarrow \text{Elasticity} = \frac{l_1}{n_2} \]
<table>
<thead>
<tr>
<th>Variables</th>
<th>Donations</th>
<th>Terror</th>
<th>Terror</th>
<th>Terror</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln(1+N)</td>
<td>Dummy</td>
<td>Dummy</td>
<td>Dummy</td>
<td>Dummy</td>
</tr>
<tr>
<td>OLS</td>
<td>IV</td>
<td>IV</td>
<td>IV</td>
<td>IV</td>
</tr>
<tr>
<td>Sunni</td>
<td>×</td>
<td>Silver</td>
<td>t</td>
<td>0.227***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.0715)</td>
</tr>
<tr>
<td>Donations</td>
<td>odt</td>
<td>0.034***</td>
<td>0.050***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.004)</td>
<td>(0.011)</td>
<td></td>
</tr>
<tr>
<td>Elasticity</td>
<td></td>
<td>0.17</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Div, Org, Q-Y FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Obs.</td>
<td></td>
<td>2600</td>
<td>2600</td>
<td>2600</td>
</tr>
<tr>
<td>Adj. R sq.</td>
<td></td>
<td>0.200</td>
<td>0.134</td>
<td>0.544</td>
</tr>
<tr>
<td>Mean Dep. Var.</td>
<td>0.212</td>
<td>0.007</td>
<td>0.007</td>
<td>0.007</td>
</tr>
<tr>
<td>S.D. Dep. Var.</td>
<td>1.609</td>
<td>0.074</td>
<td>0.074</td>
<td>0.074</td>
</tr>
</tbody>
</table>

Notes: Standard errors are clustered at division and organization.
### Table 6: Donations and Attack, OLS and IV

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Donations Ln(1+N)</th>
<th>(2) Terror Dummy</th>
<th>(3) Terror Dummy OLS</th>
<th>(4) Terror Dummy IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunniₐ × Silverₜ</td>
<td>0.227*** (0.0715)</td>
<td>0.011*** (0.00417)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donationsₒdt</td>
<td>0.034*** (0.004)</td>
<td>0.050*** (0.011)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elasticity</td>
<td>0.17</td>
<td>0.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Div, Org, Q-Y FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Obs.</td>
<td>2600</td>
<td>2600</td>
<td>2600</td>
<td>2600</td>
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<td>0.074</td>
<td>0.074</td>
<td>0.074</td>
</tr>
</tbody>
</table>

*Notes:* Standard errors are clustered at division and organization.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Donations</th>
<th>Attacks</th>
<th>Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln(1+N)</td>
<td>OLS</td>
<td>IV</td>
<td>IV</td>
</tr>
<tr>
<td>OLS</td>
<td>0.036***</td>
<td>0.038***</td>
<td>0.049***</td>
</tr>
<tr>
<td>(0.007)</td>
<td>(0.010)</td>
<td>(0.013)</td>
<td>(0.018)</td>
</tr>
<tr>
<td>Elasticity</td>
<td>0.18</td>
<td>0.19</td>
<td>0.25</td>
</tr>
<tr>
<td>Div, Org, Q-Y FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Obs.</td>
<td>2600</td>
<td>2600</td>
<td>2600</td>
</tr>
<tr>
<td>Adj. R sq.</td>
<td>0.408</td>
<td>0.340</td>
<td>0.374</td>
</tr>
<tr>
<td>Mean Dep. Var.</td>
<td>0.007</td>
<td>1.107</td>
<td>0.007</td>
</tr>
<tr>
<td>S.D. Dep. Var.</td>
<td>0.083</td>
<td>0.113</td>
<td>0.083</td>
</tr>
</tbody>
</table>

Notes: Standard errors are clustered at the division level and organization.
<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Attacks Ln(1+N)</th>
<th>(2) Casualties Ln(1+N)</th>
<th>(3) Attacks Ln(1+N)</th>
<th>(4) Casualties Ln(1+N)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td>OLS</td>
<td>IV</td>
<td>IV</td>
</tr>
<tr>
<td>Donations$_{odt}$</td>
<td>0.036*** (0.007)</td>
<td>0.038*** (0.010)</td>
<td>0.049*** (0.013)</td>
<td>0.045** (0.018)</td>
</tr>
<tr>
<td>Elasticity</td>
<td>0.18</td>
<td>0.19</td>
<td>0.25</td>
<td>0.23</td>
</tr>
<tr>
<td>Div, Org, Q-Y FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>0.339</td>
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<td>1.107</td>
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<td>S.D. Dep. Var.</td>
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<td>0.113</td>
</tr>
</tbody>
</table>

Notes: Standard errors are clustered at the division level and organization.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Dua Qibla Hadith Salat</th>
<th>Sunni</th>
<th>Ramadan</th>
<th>Sunni</th>
<th>Ramadan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>c×</td>
<td>t</td>
<td>c×</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-6.229</td>
<td>22.94</td>
<td>35.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(29.19)</td>
<td>(22.92)</td>
<td>(41.99)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>35.56</td>
<td>2.027</td>
<td>33.91</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(37.70)</td>
<td>(32.20)</td>
<td>(34.61)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-38.49</td>
<td>-2.953</td>
<td>-34.10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(42.12)</td>
<td>(36.88)</td>
<td>(47.27)</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at city level. Years between 2013 and 2016.

“Dua” a spontaneous prayer of invocation to get requests or supplications. “Qibla” - the direction of the prayer. “H. adīth” is a story on the life of the Prophet and constitutes the “Sunna”: the second source of law, after the “Quran”. “S. al¯a”: it is the compulsory Islamic prayer to be recited five times daily.
### Table A15: Religiosity, Zakat and Ramadan - Google Trends

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Dua Hits</th>
<th>(2) Qibla Hits</th>
<th>(3) Hadith Hits</th>
<th>(4) Salat Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Sunni}_c \times \text{Silver}_t$</td>
<td>-6.229</td>
<td>22.94</td>
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<td>3.151</td>
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<td></td>
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<td>(22.92)</td>
<td>(41.99)</td>
<td>(20.07)</td>
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<tr>
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<td>2.027</td>
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<td>46.82</td>
</tr>
<tr>
<td></td>
<td>(37.70)</td>
<td>(32.20)</td>
<td>(34.61)</td>
<td>(31.85)</td>
</tr>
<tr>
<td>$\text{Sunni}_c \times \text{Silver}_t \times \text{Ramadan}_t$</td>
<td>-38.49</td>
<td>-2.953</td>
<td>-34.10</td>
<td>-30.26</td>
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<tr>
<td></td>
<td>(42.12)</td>
<td>(36.88)</td>
<td>(47.27)</td>
<td>(35.65)</td>
</tr>
<tr>
<td>Div, Q-Y FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Obs.</td>
<td>80</td>
<td>80</td>
<td>80</td>
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</tr>
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**Notes:** Standard errors clustered at city level. Years between 2013 and 2016. "Dua" a spontaneous prayer of invocation to get requests or supplications. "Qibla" - the direction of the pray. "Ḥadīth" is a story on the life of the Prophet and constitutes the "Sunna": the second source of law, after the "Quran". "Ṣalā": it is the compulsory Islamic prayer to be recited five times daily.