Military Spending and War

Effi Benmelech
Northwestern University & NBER

Joao Monteiro
EIEF

Banca d'Italia Public Finance Workshop
September 5, 2025

Military Spending and War

"The strong do what they can and the weak suffer what they must."

— Thucydides (V.89)

Global military spending increased by **9.4% in 2024**, reaching $2.7 trillion.

- Driven by increased fears of conflict.
- Increase in spending partially meant as a **deterrent**.

Military Spending and War

"The strong do what they can and the weak suffer what they must."

— Thucydides (V.89)

Global military spending increased by **9.4% in 2024**, reaching $2.7 trillion.

- Driven by increased fears of conflict.
- Increase in spending partially meant as a **deterrent**.

Critical deterrence: military spending deters conflict. Schelling (1966)

- Operates via an increase in **costs of war**.
- Doctrine behind most Cold War policies. Kissinger (1957, 1994)

Military Spending and War

"The strong do what they can and the weak suffer what they must."

— Thucydides (V.89)

Global military spending increased by **9.4% in 2024**, reaching $2.7 trillion.

- Driven by increased fears of conflict.
- Increase in spending partially meant as a **deterrent**.

Critical deterrence: military spending deters conflict. Schelling (1966)

- Operates via an increase in **costs of war**.
- Doctrine behind most Cold War policies. Kissinger (1957, 1994)
- But does it work in practice?

Military Spending and War

"The strong do what they can and the weak suffer what they must."

— Thucydides (V.89)

Global military spending increased by **9.4% in 2024**, reaching $2.7 trillion.

- Driven by increased fears of conflict.
- Increase in spending partially meant as a **deterrent**.

Critical deterrence: military spending deters conflict. Schelling (1966)

- Operates via an increase in **costs of war**.
- Doctrine behind most Cold War policies. Kissinger (1957, 1994)
- But does it work in practice?

Does military spending deter conflict?

This Paper

Novel dataset on conflict and military spending.

- Data on all conflicts since 1948.
- Merged with information on military spending.

Empirics.

- Correlation between conflict and spending.
- Correlation between spending and costs of war.

Preview of Results

Critical deterrence holds up - higher military spending associated with lower conflict.

- No evidence of **short-run escalation**.

But **elasticity is low**:

- 12% increase in spending $\implies$ 2% decrease in conflict in the long run.
- Effect of spending larger for casualties and costs of war.
- Pass-through from costs of war to conflict is low.

Effects of military spending are **state-dependent**:

- More pronounced for democracies.
- Only present for **intra-state conflicts**.
  - Larger for countries for **high ethnic polarization**.

Data

Data Sources

Conflicts: UCDP Armed Conflict Dataset.

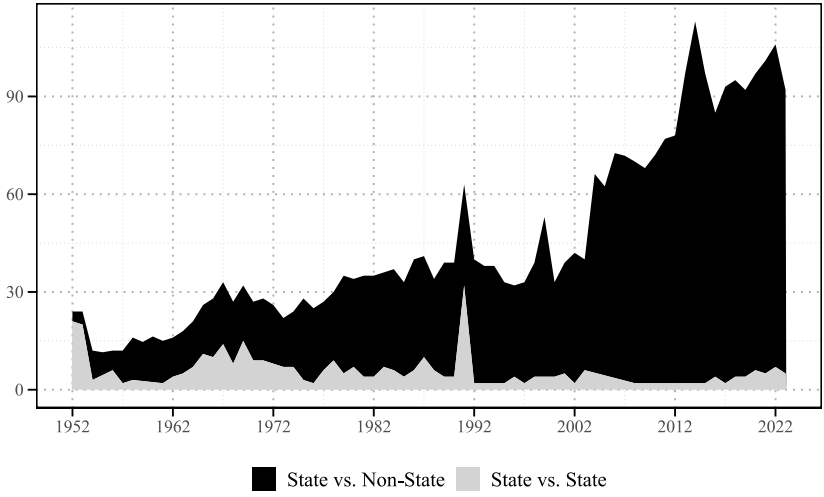
▸ Conflicts ▸ Countries ▸ Participants

- Conflict is defined as at least 25 battle-related deaths per year.
- Includes inter-state and intra-state conflicts.
- Has 299 conflicts.
- Merged with data on conflic resolution and casualties.

Military Spending: SIPRI Military Expenditure Database.

- Time-series for military spending since 1950s.
- Unbalanced panel of 161 countries over a 75-year period.

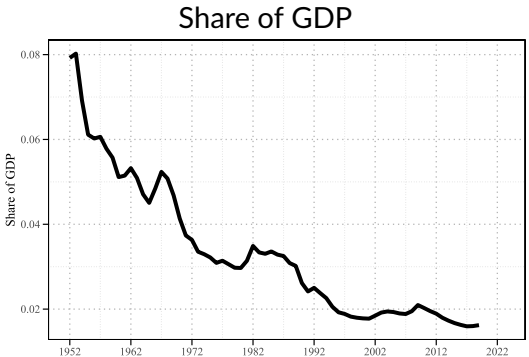
Number of countries in conflict has increased



- And intra-state conflict has become more important.

▸ Regimes ▸ Regions

Military spending has decreased as share of GDP



- But increases in levels after 9/11 and the Russian invasion of Ukraine.

Short-Run

Does military spending increase conflict?

$$\text{Conflict}_{i,t} = \mu_i + \lambda_t + \gamma \log \text{Spending}_{i,t} + \beta \text{Conflict}_{i,t-1} + \varepsilon_{i,t}$$

Does military spending increase conflict?

$$\text{Conflict}_{i,t} = \mu_i + \lambda_t + \gamma \log \text{Spending}_{i,t} + \beta \text{Conflict}_{i,t-1} + \varepsilon_{i,t}$$

Reverse causality: countries increase military spending when in conflict.

- **Positive bias** $\implies$ γ is an upper bound.
- Important to control for lagged conflict.

Does military spending increase conflict?

$$\text{Conflict}_{i,t} = \mu_i + \lambda_t + \gamma \log \text{Spending}_{i,t} + \beta \text{Conflict}_{i,t-1} + \varepsilon_{i,t}$$

Reverse causality: countries increase military spending when in conflict.

- **Positive bias** $\implies$ γ is an upper bound.
- Important to control for lagged conflict.

Common drivers: given FE and control, not a likely problem.

- Conflict is **history-dependent**.
- Military spending driven by economic variables.

▸ Table ▸ Horizon ▸ In-Sample ▸ Out-of-Sample ▸ Table

Military spending does not increase conflict in the short-run

	(1)
Log Spending	0.04
	(0.008)
$\text{Conflict}_{i,t-1}$	0.652***
	(0.014)
Country and Year FE	✓
Observations	7,944
Countries	161
Years	75
R^2	0.67

Positive bias $\implies$ coefficient is upper bound.

- At most, true coefficient is zero (but could be negative)
- No evidence of **short-run escalation**.

Magnitude is small - 12% increase in spending $\implies$ 0.18% $\uparrow$ in conflict. ▸ Table

Coefficient has been decreasing over time. ▸ Plot

Long-Run

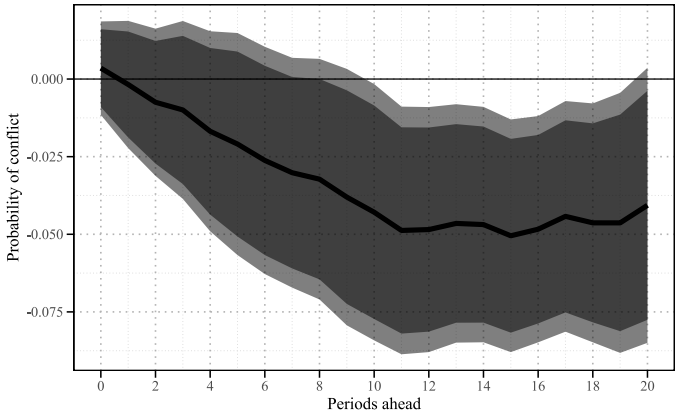
Tracing out the effects of military spending

$$\text{Conflict}_{i,t+h} = \mu_i + \lambda_t + \gamma^h \log \text{Spending}_{i,t} + \beta \text{Conflict}_{i,t-1} + \varepsilon_{i,t}, \quad h = 0, \ldots, 20$$

Same identification concerns:

- Reverse causality + unobserved drivers.
- γ^h also likely to be an **upper bound**.

Military spending lowers conflict in the long-run



- Effect modest and persistent: 12% ↑ in spending $\implies$ 2% ↓ in conflict 10 years after.
- **Elasticity ≈ -0.17**.

▸ Severe Conflict ▸ Oster δ ▸ Cumulative ▸ Robust

Military spending and costs of war

Critical deterrence: military spending reduces conflict by increasing costs of war.

- For spender, prob. of victory $\uparrow$.
- Number of casualties $\uparrow$.
- Casualties for spender $\downarrow$.

Can test this!

- Victory: dataset at conflict-participant.
- Casualties: dataset on conflict-year or conflict-participant.

Military spending and costs of war

Critical deterrence: military spending reduces conflict by increasing costs of war.

- For spender, prob. of victory $\uparrow$.
- Number of casualties $\uparrow$.
- Casualties for spender $\downarrow$.

Can test this!

- Victory: dataset at conflict-participant.
- Casualties: dataset on conflict-year or conflict-participant.

Helps us understand if:

1. Elasticity of costs of war to spending is low; or
2. Elasticity of conflict to costs of war is low.

Higher military spending associated with higher prob. of victory

$$\text{Victory}_{c,i} = \alpha + \beta \log \text{Spending}_{i,\tau_c - h:\tau_c} + \varepsilon_{c,i}$$

Higher military spending associated with higher prob. of victory

$$\text{Victory}_{c,i} = \alpha + \beta \log \text{Spending}_{i,\tau_c - h:\tau_c} + \varepsilon_{c,i}$$

	(1)
$\log \text{Spending}_{i,\tau_c-5:\tau_c}$	0.0262*
	(0.0132)
Avg. dep.var	0.61
Observations	202
R^2	0.03

Effect is modest - 12% $\uparrow$ in spending $\implies$ 0.52% $\uparrow$ increase in victory.

- Elasticity ≈ 0.04.

▸ Plot

Selection bias: selecting conflicts that take place.

- Selecting conflicts where spending did not deter conflict.
- Likely **negative bias**.

Higher military spending associated with higher casualties

$$\log \text{Total Deaths}_{c,t} = \mu_c + \lambda_t + \boldsymbol{\beta} \log \text{Spending}_{i,t-h:t} + \varepsilon_{c,t}$$

Higher military spending associated with higher casualties

$$\log \text{Total Deaths}_{c,t} = \mu_c + \lambda_t + \beta \log \text{Spending}_{i,t-h:t} + \varepsilon_{c,t}$$

	(1)
$\log \text{Spending}_{i,t-5:t}$	0.146***
	(0.033)
Conflict and Year FE	✓
Avg. dep.var	1,491
Observations	1,430
R^2	0.63

Modest elasticity - 12% ↑ in spending $\implies$ 26 ↑ deaths.

▸ Plot 1 ▸ Plot 2

Selection bias: selecting conflicts that take place.

- Selecting conflicts where spending did not deter conflict.
- Likely **negative bias**.

Higher military spending associated with lower casualties for spender

$$\log \text{Deaths}_{c,i} = \mu_c + \beta \log \text{Spending}_{i,\tau_c - h:\tau_c} + \varepsilon_{c,i}$$

Higher military spending associated with lower casualties for spender

$$\log \text{Deaths}_{c,i} = \mu_c + \beta \log \text{Spending}_{i,\tau_c - h:\tau_c} + \varepsilon_{c,i}$$

	(1)
$\log \text{Spending}_{i,\tau_c-5:\tau_c}$	-0.287
	(0.087)
Conflict FE	✓
Avg. dep.var	13,258
Observations	186
R^2	0.78

Elasticity is larger - 12% ↑ in spending $\implies$ 462 ↓ deaths.

▸ Plot 1 ▸ Plot 2

Taking Stock

Critical deterrence: military spending reduces conflict by increasing costs of war.

Taking Stock

Critical deterrence: military spending reduces conflict by increasing costs of war.

Qualitatively: find evidence in support.

- Higher spending $\implies$ lower conflict.
- Higher spending $\implies$ higher costs of war for potential aggressors.

Taking Stock

Critical deterrence: military spending reduces conflict by increasing costs of war.

Qualitatively: find evidence in support.

- Higher spending $\implies$ lower conflict.
- Higher spending $\implies$ higher costs of war for potential aggressors.

Quantitatively: effects are modest.

- Elasticity of conflict to spending is low.
  - Conflict is history-dependent.
- Elasticity of costs of war for potential aggressors to spending is higher.
- Pass-through of costs of war to spending is low (?)

What if the spender is an aggressor?

So far, we have assumed the spender wants to **deter aggression**.

- But maybe spender is an aggressor.
- In this case, spending increases because of a future planned conflict.

What if the spender is an aggressor?

So far, we have assumed the spender wants to **deter aggression**.

- But maybe spender is an aggressor.
- In this case, spending increases because of a future planned conflict.

Problem: hard to identify *potential* aggressors.

What if the spender is an aggressor?

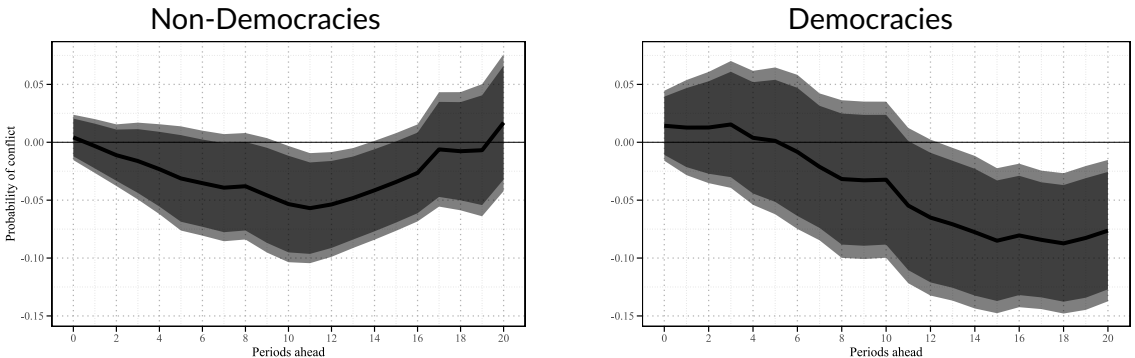
So far, we have assumed the spender wants to **deter aggression**.

- But maybe spender is an aggressor.
- In this case, spending increases because of a future planned conflict.

Problem: hard to identify *potential* aggressors.

- Democracies are less likely to initiate conflict. Rummel (1995), Baliga et al. (2011)
- Democratic accountability restrains aggression.
- Use V-Dem's democracy index to separate countries.

Military spending reduces conflict only for democracies



- We use V-Dem's index of political corruption.

▸ Corruption

Nature of conflicts has changed over time

Critical deterrence theory was developed for conflicts between states.

- Important for Cold War policies.

Nature of conflicts has changed over time

Critical deterrence theory was developed for conflicts between states.

- Important for Cold War policies.

However, most conflicts now involve **non-state actors**.

- Can military spending deter rebels?

Nature of conflicts has changed over time

Critical deterrence theory was developed for conflicts between states.

- Important for Cold War policies.

However, most conflicts now involve **non-state actors**.

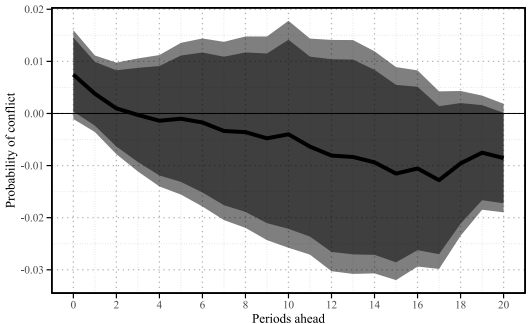
- Can military spending deter rebels?

Drivers of intra-state conflict are: Collier and Hoeffler (2004)

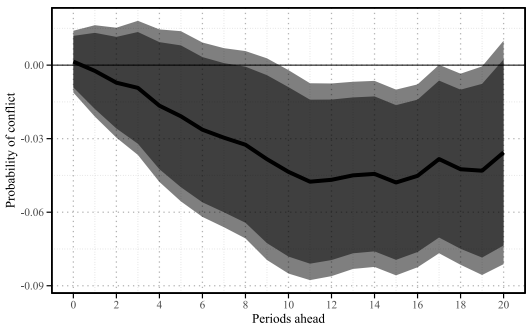
- **Greed** - ability of rebels to sustain rebellion. Fearon and Laitlin (2003)
  - Military spending by state lowers conflict.
- **Grievance** - existence of incompatibilities. Montalvo and Reynal-Querol (2005)
  - Main incompatibility - ethnic polarization.
  - Military spending by state may increase conflict via repression.

Military spending is only effective in intra-state conflicts

Inter-State Conflicts



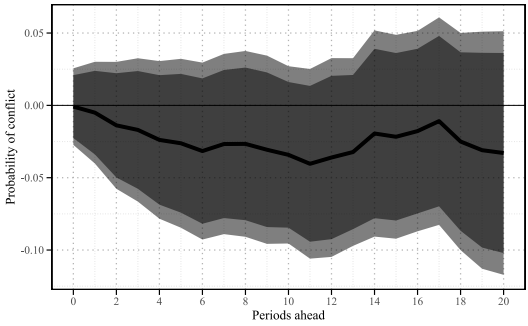
Intra-State Conflicts



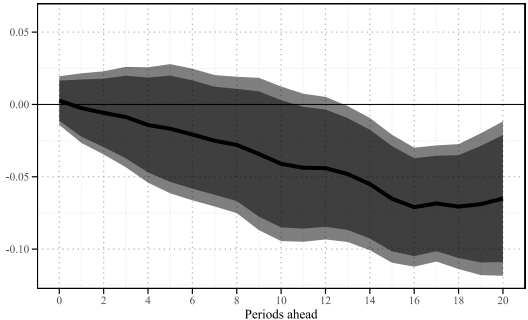
- But effects are still modest - 12% $\uparrow$ in spending $\implies$ 2.2% $\downarrow$ in civil conflict.
- Inter-state conflicts may be too history-dependent.

But reduction in intra-state conflict only exists in countries with high ethnic polarization

Low Ethnic Polarization



High Ethnic Polarization



- **Greed + Grievance** - spending deters conflict only when incompatibilities exist.

▸ Fractionalization

Conclusion

Critical deterrence holds up - higher military spending associated with lower conflict.

- No evidence of **short-run escalation**.

But **elasticity is low**:

- 12% increase in spending $\implies$ 2% decrease in conflict in the long run.
- Effect of spending larger for casualties and costs of war.
- Pass-through from costs of war to conflict is low.

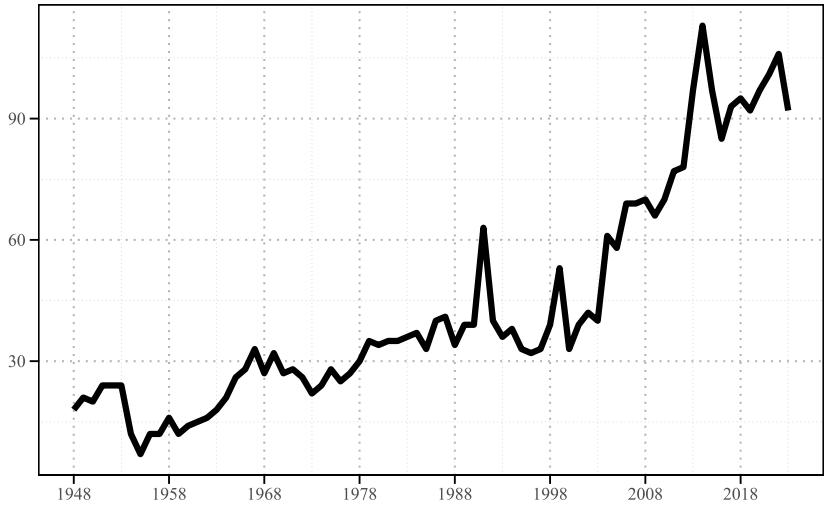
Effects of military spending are **state-dependent**:

- More pronounced for democracies.
- Only present for **intra-state conflicts**.
  - Larger for countries for **high ethnic polarization**.

Thank You!

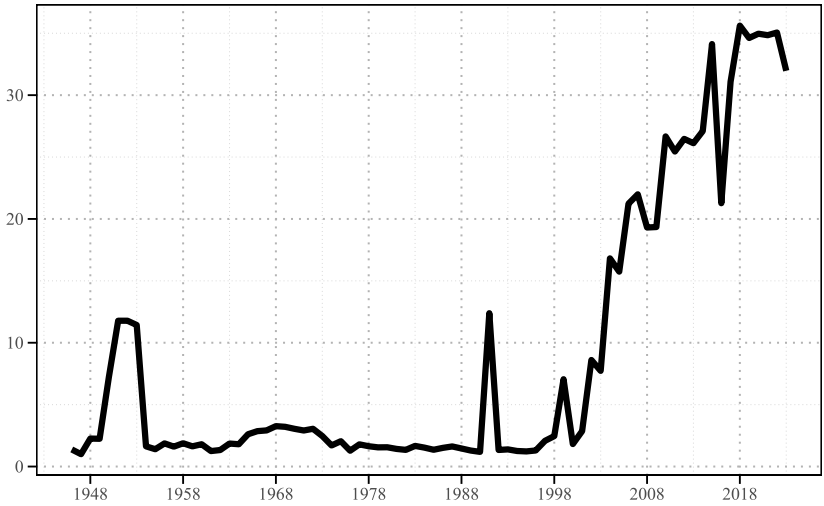
Number of Conflicts

Number of Countries in Conflict



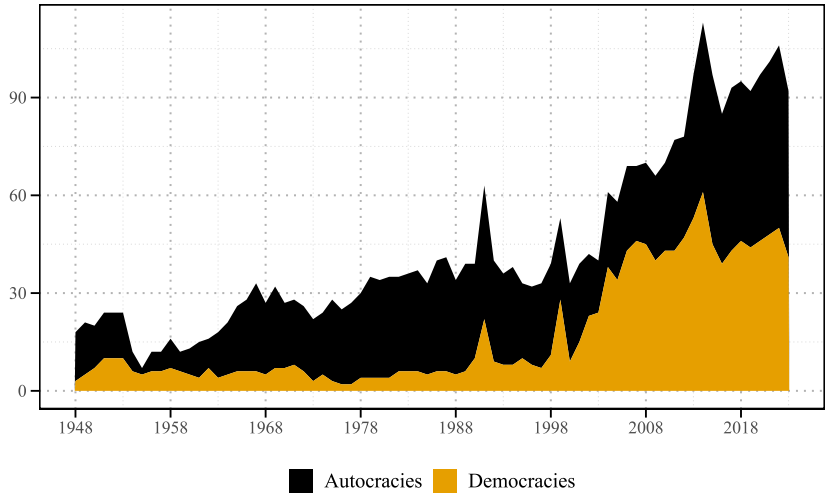
Back

Average Number of Countries in Conflict

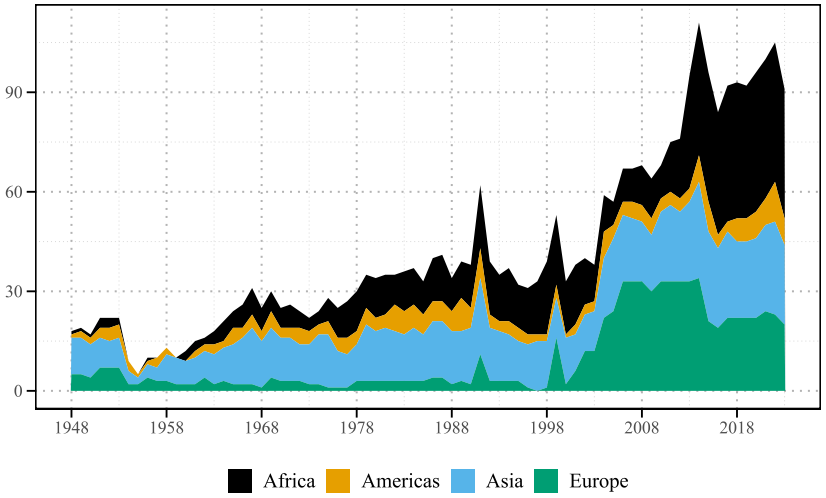


Back

Democracies are now involved in more conflicts



More European countries are involved in conflicts

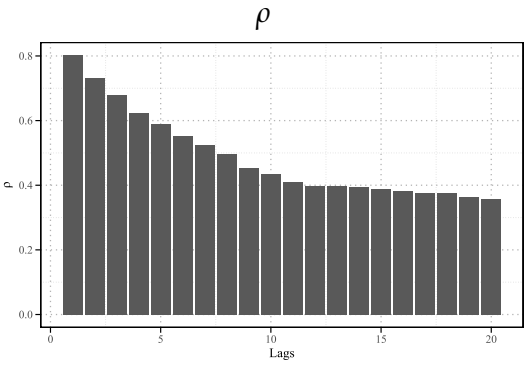


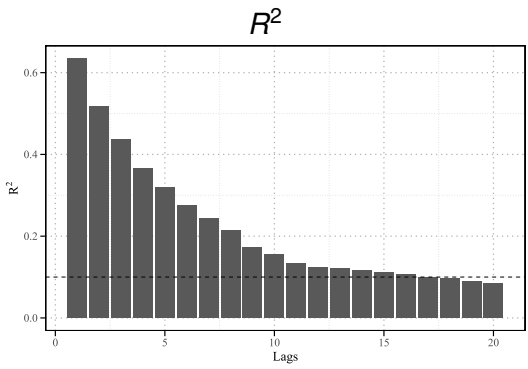
Conflict is history-dependent

	(1)	(2)	(3)	(4)	(5)
Log GDP	0.0872***			0.0251***	-0.0237
	(0.0107)			(0.0359)	(0.0237)
Log GDP per capita	-0.0808***			-0.0235***	-0.0284
	(0.0160)			(0.0050)	(0.0210)
Democracy		0.0305		-0.0026	-0.0071
		(0.0402)		(0.0100)	(0.0143)
Ethnic Polarization		0.0526		0.0140	
		(0.0811)		(0.0203)	
Conflict_{t-1}			0.8023***	0.7440***	0.6329***
			(0.0106)	(0.0153)	(0.0147)
Average of Dep. Var.	0.26	0.26	0.26	0.26	0.26
Country FE					✓
Year FE					✓
Observations	9,189	9,288	12,525	7,694	9,059
R^2	0.104	0.002	0.634	0.600	0.641
Within R^2					0.407

Back

In-sample predictive power of conflict is high at large lags

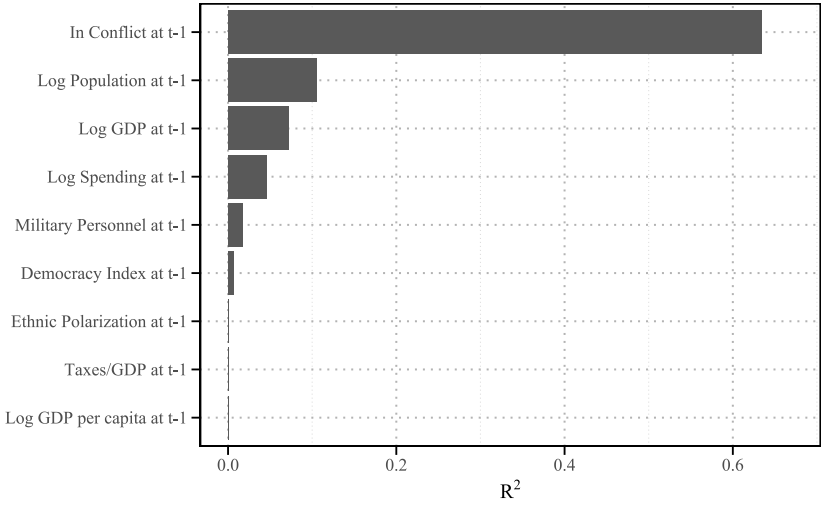




$$\text{Conflict}_{i,t} = \alpha + \rho \text{Conflict}_{i,t-h} + u_{i,t}$$

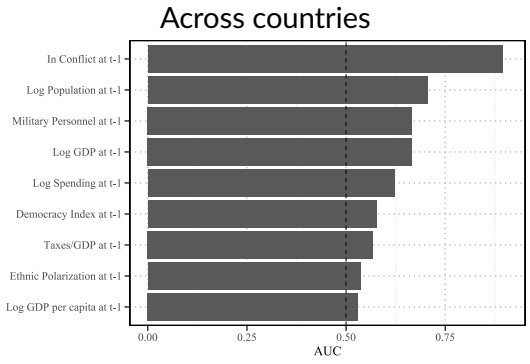
Back

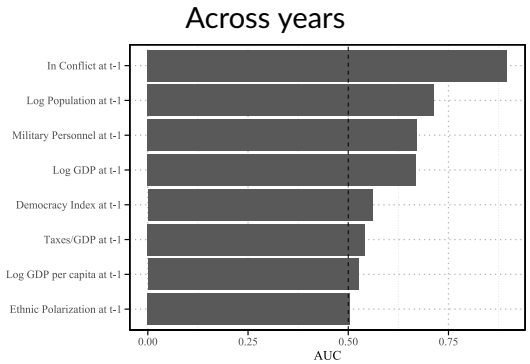
In-sample predictive power of conflict is the highest



Back

Out-of-sample predictive power of conflict is the highest





Back

Spending is driven by economic conditions

	(1)	(2)	(3)	(4)	(5)
Log GDP	1.042***			1.023***	1.354***
	(0.0413)			(0.0454)	(0.1634)
Log GDP per capita	0.2995***			0.3730***	-0.6476***
	(0.0886)			(0.1094)	(0.1701)
Democracy		1.279***		-0.2761	-0.1126
		(0.3032)		(0.1711)	(0.0859)
Conflict$_{t-1}$			1.141***	0.2826*	0.1179*
			(0.2350)	(0.1219)	(0.0455)
Country FE					✓
Year FE					✓
Observations	7,137	7,858	7,944	7,060	7,060
R^2	0.808	0.067	0.048	0.810	0.952
Within R^2					0.153

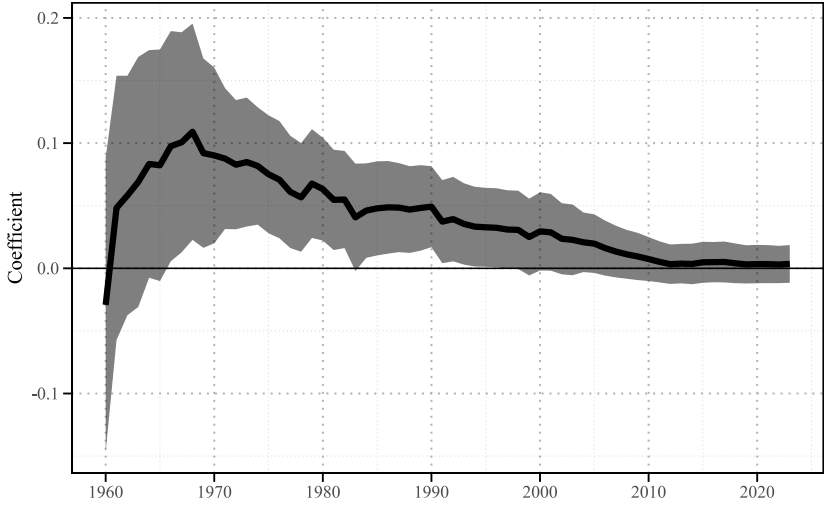
Back

Military spending does not increase conflict in the short-run

	(1)	(2)	(3)	(4)	(5)
Log Spending	0.042***	0.117***	0.038***	0.016	0.004
	(0.008)	(0.026)	(0.008)	(0.020)	(0.008)
Conflict_{t-1}					0.652***
					(0.014)
Country FE		✓		✓	✓
Year FE			✓	✓	✓
Observations	7,948	7,948	7,948	7,948	7,944
Number of countries	161	161	161	161	161
Number of years	75	75	75	75	75
R^2	0.05	0.35	0.14	0.43	0.67

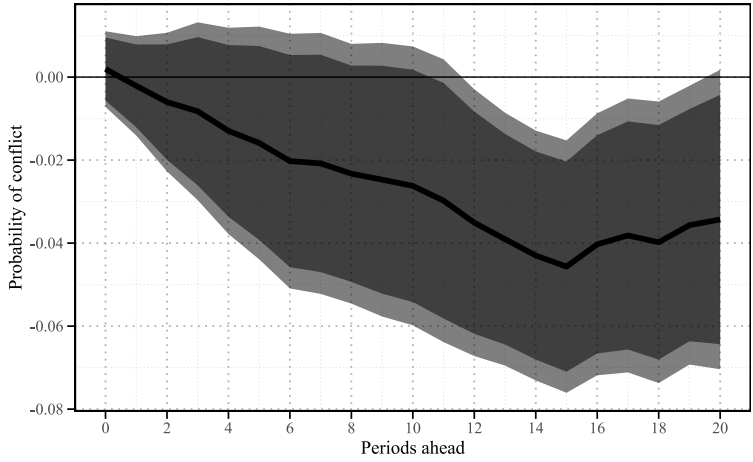
Back

Coefficient has been decreasing over time



Back

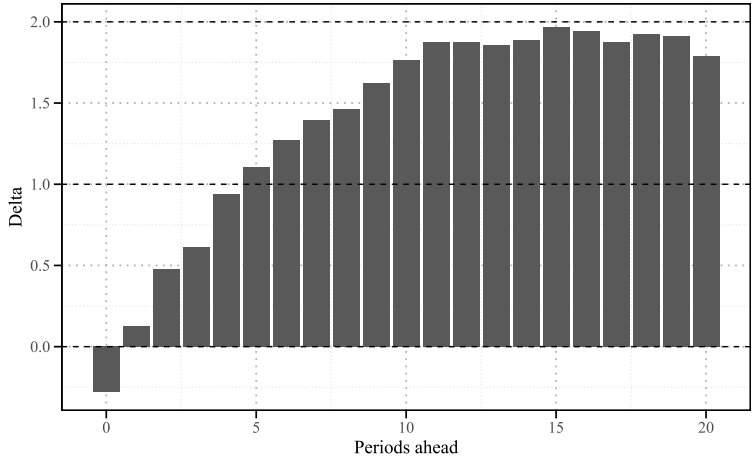
Military spending lowers risk of severe conflict in the long-run



- Effect is larger - elasticity ≈ 0.37.

Back

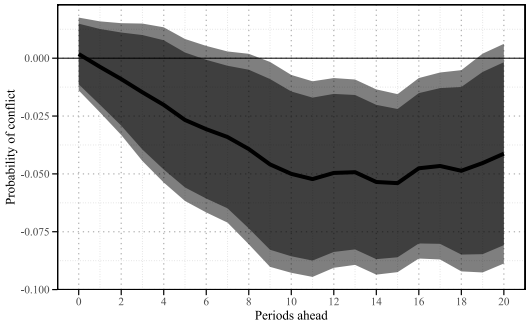
Unobserved variables unlikely to drive results



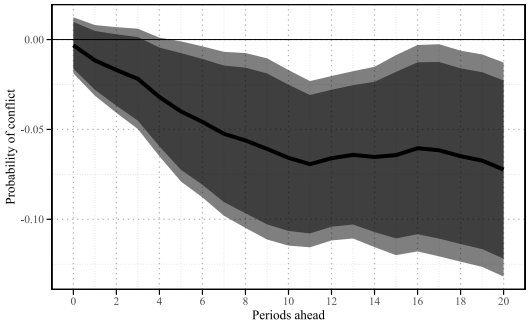
Back

Results hold if we use cumulative spending

$\tau = 1$

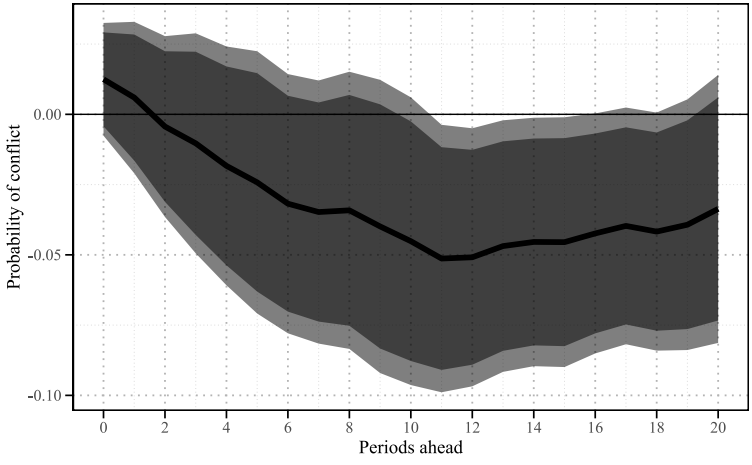


$\tau = 5$



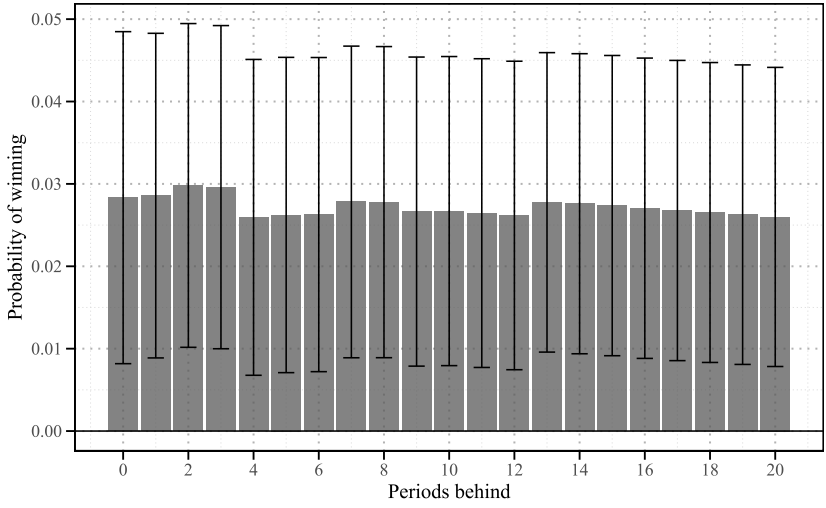
Back

Military spending lowers risk of conflict in the long-run



Back

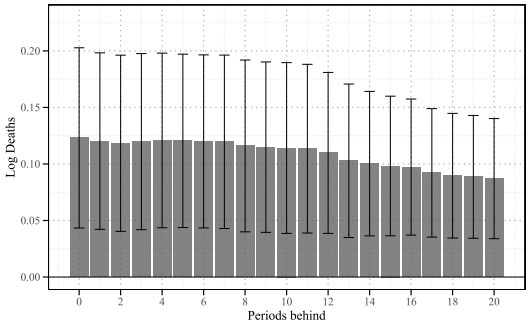
Higher military spending associated with higher prob. of victory



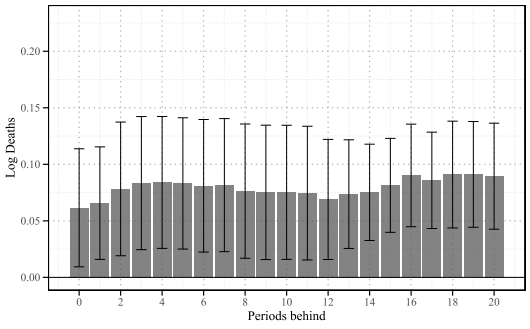
Back

Higher military spending associated with higher casualties

No FE



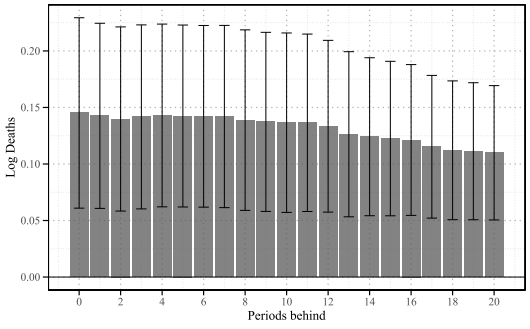
Conflict FE



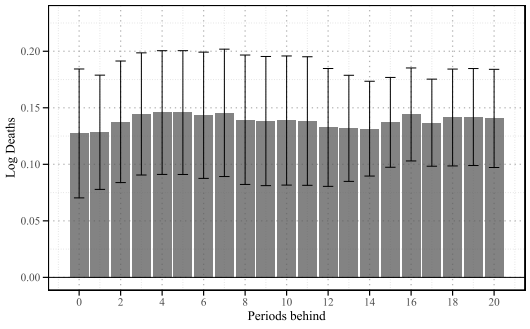
Back

Higher military spending associated with higher casualties

Year FE

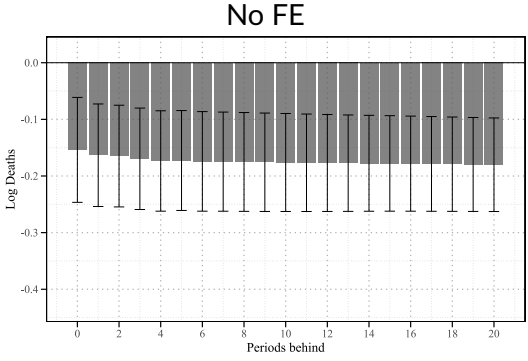


Conflict and Year FE



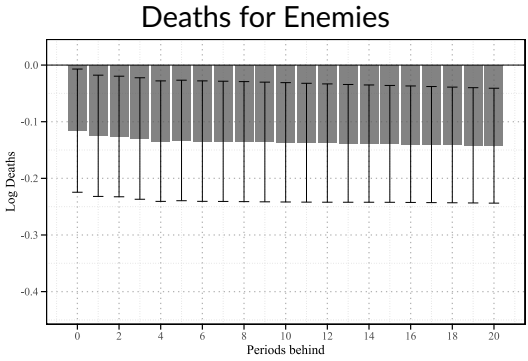
Back

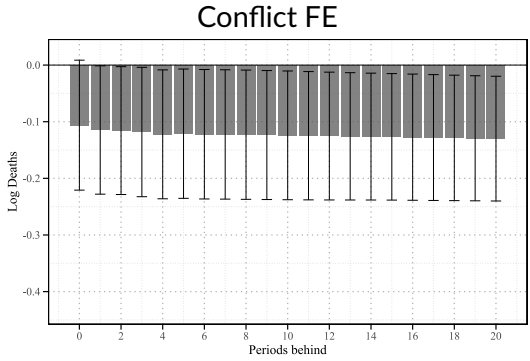
Higher military spending associated with lower casualties for spender



Back

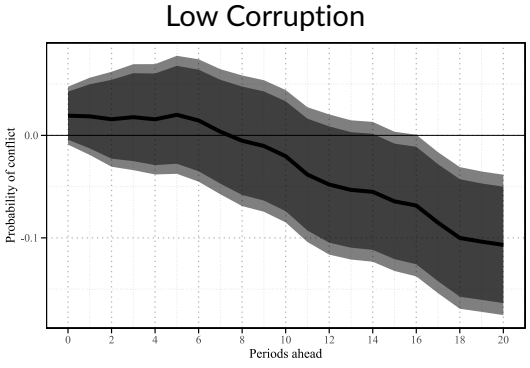
Higher military spending associated with lower casualties for spender

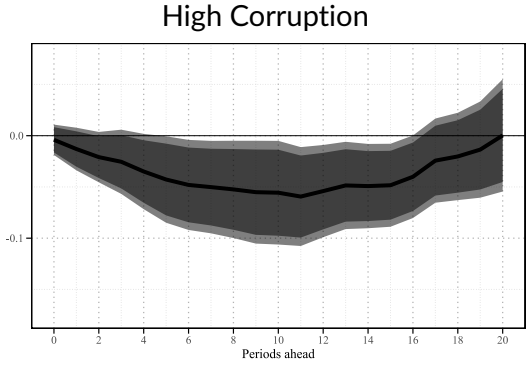




Back

Spending reduces conflict more for countries with low corruption

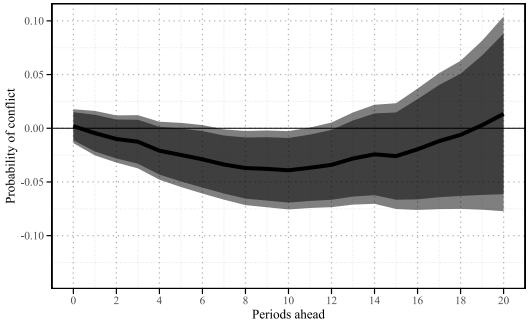




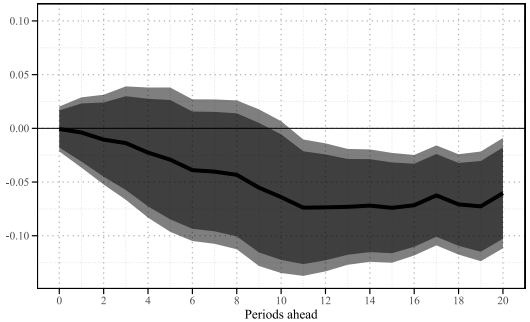
Back

Results are identical if we use ethnic fractionalization

Low Ethnic Fractionalization



High Ethnic Fractionalization



- Measure comes from Alesina et al. (2003).

Back