

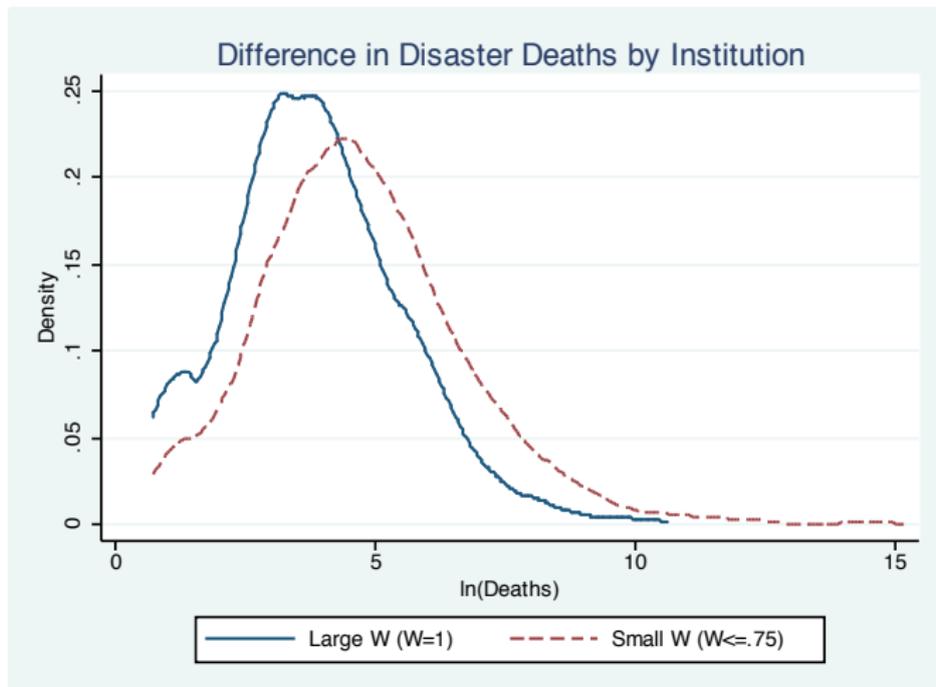
Surviving Disasters

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Mother Nature is kinder in democracies

Fewer people die in natural disasters in democracies



Disasters and Political Protest

EarthQuakes and Political Protest in Democracy and Autocracy

	Non-Democracy				Democracy			
deaths strength	0	>5	>6.5	total	0	>5	>6.5	total
<200 deaths	.26	.58	.65	.31	.36	.47	.45	.38
>200 deaths		.57	.63	.61			.75	.75
total	.26	.65	.65	.32	.36	.47	.49	0.39

Disasters and Political Survival

EarthQuakes and Political Survival in Democracy and Autocracy

deaths strength	Non-Democracy				Democracy			
	0	>5	>6.5	total	0	>5	>6.5	total
<200 deaths	.21	.32	.27	.22	.36	.56	.43	.39
>200 deaths		.17	.27	.24			.91	.91
total	.21	.32	.27	.22	.36	.56	.50	.40

Theory of Survival

- Leaders want to survive in office
- Selectorate politics
- Large W– deliver public good of insurance from disaster
- Small W – private goods - don't waste resources on infrastructure
- Ability to deliver public goods (ie keep people alive) important in large W
- Democracy: deaths =policy failure=threat to tenure
- Autocracy: policy failure unimportant = deaths don't matter
- Autocracy: disasters concentrate unhappy people—coordination device (location matters)

Our Project

- 1 Effect of institutions on disaster related deaths.
- 2 Effect of disasters and deaths on anti-government demonstrations.
- 3 Effect of disasters and deaths on tenure in office.

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- 4 ToDo: Role of Disasters in Coordination
- 5 ToDo: Amount of Aid- big disaster more aid
- 6 ToDo: Effect of Aid – increases survival in small W

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- 7 ToDo: Perverse incentives- policy fix

Threats to Tenure

- Internal Threat: Coalition Members Defect
 - Large W: provide protection from Mother Nature
 - Small W: private rewards: selectively protect, amass funds to pay coalition
- Revolutionary Threat: Citizens rise up
 - Disasters weaken state
 - Coordination
 - Large W: Not relevant – internatl mechanism
 - Small W: Disasters serve as coordination device
 - Mexico & Nicaragua
 - Burma
 - China

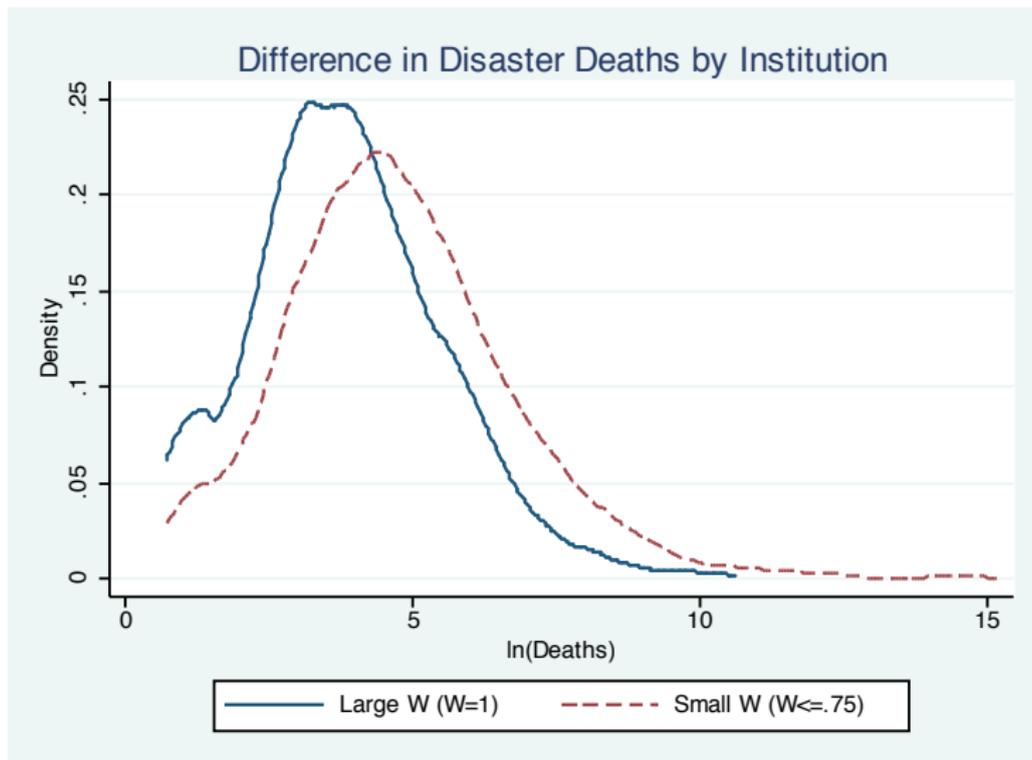
- Disasters and Disaster Deaths: Emergency Events Database EM-DAT at the Centre for Research on the Epidemiology of Disasters (CRED).
- Anti-Government Demonstrations: Arthur S. Banks's Cross National Time Series Data Archive (2001).
- Tenure in Office: Archigos (Goemans, Gleditsch, and Chiozza 2009).
- Institutions: Winning coalition size (W) and selectorate size (S) are obtained from Bueno de Mesquita et al. (2003).
- Controls such as GDP, Growth, and Population: World Bank's World Development Indicators.

3 Sets of Models

- Disaster Deaths as function of institutions. Unit: Country-Year and different FE.
- Anti-Government Demonstrations as function of disasters and deaths. Unit: Country-Year. 1 and 2 year lags and different FE.
- Tenure in Office as function of disasters and deaths. Unit: Leader-Year. 1 and 2 year lags.

Although we have data on disasters from 1900 onwards, data on economic variables reduces sample size.

Disaster Deaths and Institutions



Linear Restrictions

We are interested in testing several linear restrictions for the effect of disasters and disaster related deaths when $W=0$ and $W=1$. For instance, for the effect of two lags of disasters we test:

$$H_0 : Disasters_t + Disasters_{t-1} + Disasters_{t-2} + (W)(Disasters_t + Disasters_{t-1} + Disasters_{t-2}) = 0.$$

If $W=0$ we test the first three components and if $W=1$ we test all six components of the restriction. The same applies for disaster related casualties.

Anti-Government Demonstrations

Table 4: Anti-Government Demonstrations and Total Disasters

	Model 3		Model 4		Model 5	Model 6
Disasters	0.0266*** (0.008)		0.0201** (0.009)		0.0322*** (0.008)	0.0240*** (0.008)
L.Disasters	-0.0080 (0.009)	$H_0: \text{Sum}=0$ P-value= .000 (+)	-0.0172* (0.010)		0.0049 (0.008)	-0.0048 (0.009)
L2.Disasters			0.0198** (0.009)	$H_0: \text{Sum}=0$ P-value= .155 (-)		0.0249*** (0.009)
(Disasters)(W)	-0.0247** (0.011)		-0.0150 (0.012)		-0.0382*** (0.011)	-0.0263** (0.012)
L.(Disasters)(W)	0.0039 (0.012)		0.0198 (0.014)		-0.0197* (0.011)	-0.0008 (0.013)
L2.(Disasters)(W)			-0.0321** (0.013)			-0.0424*** (0.012)
ln(Deaths)	-0.0005 (0.008)		0.0016 (0.008)		-0.0081 (0.008)	-0.0057 (0.008)
L.ln(Deaths)	-0.0006 (0.008)	$H_0: \text{Sum}=0$ P-value= .475 (-)	0.0031 (0.008)		-0.0106 (0.008)	-0.0066 (0.008)
L2.ln(Deaths)			-0.0127 (0.008)	$H_0: \text{Sum}=0$ P-value= .001 (+)		-0.0210*** (0.008)
ln(Deaths)(W)	0.0086 (0.012)		0.0041 (0.012)		0.0165 (0.012)	0.0121 (0.012)
L.ln(Deaths)(W)	0.0145 (0.012)		0.0070 (0.012)		0.0276** (0.012)	0.0196* (0.012)
L2.ln(Deaths)(W)			0.0254** (0.012)			0.0334*** (0.012)

Anti-Government Demonstrations Joint Hypotheses

Model	Sum Covariates=0	P-Value (W=0)	P-Value (W=1)
Model 3	Disasters	0.0001 (+)	0.4815 (-)
	Deaths	0.9109 (-)	0.0043 (+)
Model 4	Disasters	0.0000 (+)	0.1552 (-)
	Deaths	0.4754 (-)	0.0011 (+)
Model 5	Disasters	0.0000 (+)	0.0000 (-)
	Deaths	0.0588 (-)	0.0015 (+)
Model 6	Disasters	0.0000 (+)	0.0000 (-)
	Deaths	0.0039 (-)	0.0006 (+)

Small coalitions sensitive to disasters, but not to deaths.
Large coalitions sensitive to deaths, but not to disasters.

Leader Survival

Table 6: Leader Survival and Total Disasters

	Model 7		Model 8	
Disasters	-0.0065 (0.039)	$H_0: \text{Sum}=0$ $P\text{-value}=.000$ (+)	-0.0098 (0.042)	$H_0: \text{Sum}=0$ $P\text{-value}=.055$ (-)
L.Disasters	0.0548 (0.039)		0.0337 (0.040)	
L2.Disasters			0.0263 (0.035)	
(Disasters)(W)	0.0063 (0.051)	0.0026 (0.055)		
L.(Disasters)(W)	-0.0762 (0.051)	-0.0725 (0.053)		
L2.(Disasters)(W)		-0.0012 (0.047)		
In(Deaths)	0.0115 (0.040)	$H_0: \text{Sum}=0$ $P\text{-value}=.292$ (+)	-0.0009 (0.041)	$H_0: \text{Sum}=0$ $P\text{-value}=.000$ (+)
L.In(Deaths)	0.0208 (0.039)		0.0256 (0.039)	
L2.In(Deaths)			0.0291 (0.038)	
In(Deaths)(W)	0.0367 (0.055)	0.0424 (0.057)		
L.In(Deaths)(W)	0.0558 (0.055)	0.0566 (0.055)		
L2.In(Deaths)(W)		0.0040 (0.053)		

Leader Survival Joint Hypotheses

Model	Sum Covariates=0	P-Value (W=0)	P-Value (W=1)
Model 7	Disasters	0.0007 (+)	0.0279 (-)
	Deaths	0.4730 (+)	0.0000 (+)
Model 8	Disasters	0.00072 (+)	0.0555 (-)
	Deaths	0.292 (+)	0.0000 (+)

Small coalitions leaders sensitive to disasters, but not to deaths.

Large coalitions leaders sensitive to deaths, but not to disasters.

To Do

- Aid: More aid to large disasters
- In small W, aid improves survival
- Perverse Incentives?

Pakistan Floods 2010

- Floods in Summer 2010: 20M affected, 2000 dead (similar scale to Benin 2010, Bangladesh 1998)
- An equal opportunity flood:
 - "local government figures in the Sindh province conspired with prominent landowners to bolster the riverbank running through their property and others deemed important, at the expense of other regions, which were left vulnerable to flood waters. ... It was not just incompetence on the part of the authorities to protect the poorest of the poor from potential floods; it was their deliberate intention that they should suffer if floods were to take place."

Helping Pakistan?

- "We don't donate to the government because we know it's mainly a way for government officials to make money."
- \$84 per affected person – much syphoned off by government
- 20 times aid to Benin and Bangladesh
- \$6.6B of US military aid between 2002 and 2008, only \$500M ever made it to the military
- Perverse incentives (like fight insurgents)
- Good job = Less graft → do bad!!!
- Policy Fix: International Escrow Accounts
- Rather than pay an arsonist to contain fires, it is better to pay him only if fires never start.