Development Aid and Violence in Civil Conflict: Evidence from the Philippines

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Research Question

How Do Development Programs Influence Conflict Dynamics?

- Intensity
- Insurgent & Counterinsurgent Violence
- Civilian Casualties

Answering the Question

Empirical Approach

- Estimate Causal Effects of a Major World Bank Program in the Philippines, KALAHI-CIDSS

Results

1. Conflict Intensity: ↑
2. Short-Term Program Effects: Strong
3. Casualty Distribution: Divided b/n Government & Insurgents
4. Pre-Existing Insurgent Presence: Strongest Effects

H1: Development Programs Decrease Conflict

Mechanisms

Reducing Poverty

- Fearon and Laitin 2003; Miguel et al. 2004; Dube and Vargas n.d.

Enhancing Governance and Accountability

- Hegre 2002; Collier and Hoeffler 2004

Increasing Social Capital

- Fearon, Humphreys, and Weinstein 2009

H2: Development Programs Increase Conflict

Mechanisms

Increasing the Payoffs from Violence

- Collier and Hoeffler 1998; Grossman 1999; Garfinkel and Skaperdas 2007

Influencing Anticipated or Actual Local Control

- Fearon 1995; Powell 2006; Kalyvas 2006

KALAHI-CIDSS

Financing and Assistance

- World Bank Financial Support & Oversight
- Philippines' Flagship Development Program, 2003-2009
- Approximately $200 million in funding

Size

- Approx. $150,000 per Municipality-Cycle
- $450,000 - $600,000 Total
- 15% of Annual Budget

Primary Aims

1. Improve Infrastructure
2. Enhance Accountability
3. Increase Grassroots Participation

Community-Driven Development & KALAHI-CIDSS

CDD Programs: How They Work

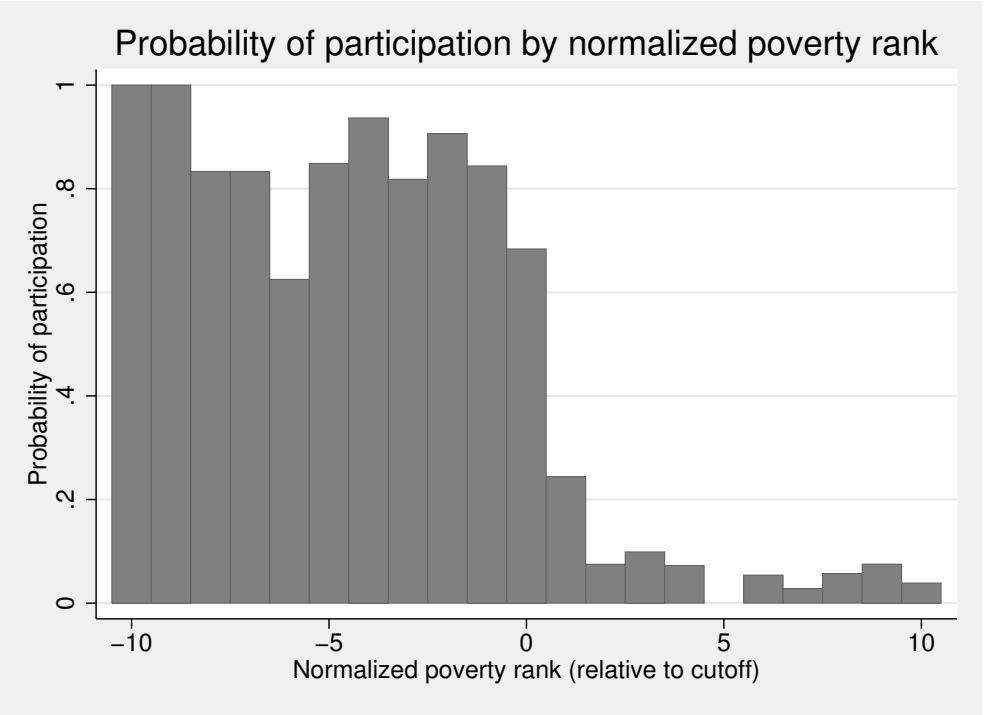
1. Municipality Block Grants
2. Village Project Proposals
3. Villages Elect Councils
4. Project Selection/Funding Allocation by Inter-Village Forums
5. Community Implementation & Monitoring
6. Project Cycles

Selection Process

How Were Municipalities Selected?

1. 40 Poorest Provinces Identified
2. Municipality Poverty Measurement and Ranking, by Province
3. Poorest Quartile Declared Eligible for Program

Discontinuous Probability of Participation



Running Variable: Normalized Poverty Rank*
Bandwidth: 2 Ranks from Threshold
** Normalized poverty rank is obtained by taking the number of municipalities by province divided by four, then rounding to the nearest integer and subtracting from the actual poverty rank.*

Table 1. Balance Tests

Variable	Treatment	Control	Difference	*p*-Value of Difference
Population	29397.15	29505.25	-108.0977	0.969
Area	0.034	0.028	0.006	0.233
Highway Access	0.695	0.696	-0.001	0.981
Timber	7824.408	8496.139	-671.731	0.765
Affected by NPA in 2001	0.420	0.408	0.012	0.874
Ethnic Fractionalization	0.302	0.297	0.004	0.919
Religious Fractionalization	0.306	0.303	0.003	0.925
Percent Muslim	0.0310087	0.0443291	-0.0133203	0.550
Municipalities	**81**	**81**	**162**	

Research Design

Empirical Strategy: Regression Discontinuity (RD) Design

- Uses Arbitrary Eligibility Threshold for Identification
- Estimated Causal Effects are Differences between the Treated and Untreated Near Threshold

Estimation

1. Local Linear Regression
2. Difference-in-Difference Regression

Data

Conflict Data_

- Data on Incident Dates, Locations, Outcomes, 2001-2008
- N = 21,500
  - *Source: Empirical Studies of Conflict Project*

Program Data

- Location and Schedule of Program Activities
  - *Source: Philippines Department for Social Welfare and Development*

Census Data

- Control Variables fromthe 2000 National Census
  - *Source: Philippines National Statistics Coordination Board*

Time Trends of Casualties

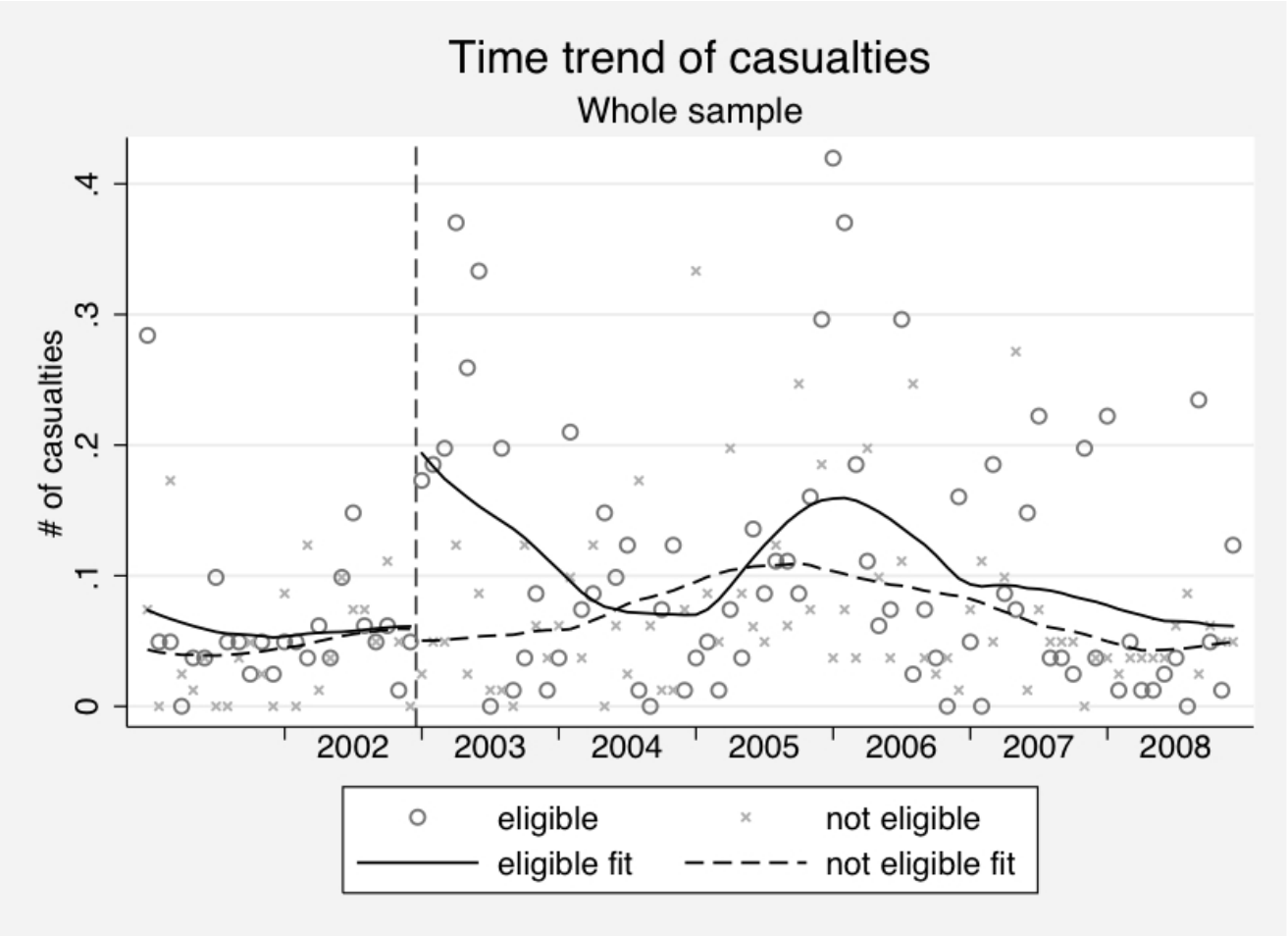


Table 2. Summary Statistics of Casualties

	Eligible	Ineligible	Difference	p-Value of Diff.
Pre- Program Period	0.682	0.593	0.090	0.613
	(0.125)	(0.126)	(0.177)	
Total Program Period	1.209	0.838	0.371	0.050
	(0.162)	(0.097)	(0.127)	
Early Program Period	1.504	0.758	0.747	0.008
	(0.254)	(0.122)	(0.281)	
Municipalities	81	81	162	
Observations	649	652	1301	

Note: All casualty statistics are per year.

Table 3 The Effect of KALAHI-CIDSS on Casualties

DV: Conflict Casualties (/year)	(1)	(2)	(3)
Eligible	-0.420	-0.037	
	(0.513)	(0.522)	
Eligible*Program	1.262**	1.068**	0.996**
	(0.598)	(0.500)	(0.486)
Controls	No	Yes	Yes
Province FE	No	Yes	No
Municipality FE	No	No	Yes
Observations	1,237	1,237	1,237

Note: All regressions include year fixed effects and control for normalized poverty rank, fully interactedwith the eligible indicator, the program period indicator, and the triple interaction with both the eligible and program period indicators.

Table 4. Short-Term and Long-Term Effects

DV: Casualties (/year)	(1)	(2)	(3)
Eligible	-0.382	0.200	
	(0.543)	(0.480)	
Eligible*Program	1.523**	1.278**	1.308**
	(0.714)	(0.770)	(0.627)
Eligible*Program*Late Prog.	-0.683	-1.167*	-1.544**
	(0.547)	(0.597)	(0.660)
Constant	0.955	-13.7	0.659*
	(0.613)	(7.87)	(0.327)
Controls	No	Yes	Yes
Province FE	No	Yes	No
Municipality FE	No	No	Yes
Observations	1,237	1,237	1,237

Table 5. Who Suffers the Casualties?

DV: Casualties, by Actor	(1)	(2)	(3)
AFP	0.632*	0.499	0.464
	(0.371)	(0.340)	(0.330)
Insurgents	0.473**	0.422**	0.405**
	(0.225)	(0.191)	(0.182)
Civilians	0.208	0.190	0.164
	(0.220)	(0.198)	(0.193)
Controls	No	Yes	Yes
Province FE	No	Yes	No
Municipality FE	No	No	Yes
Observations	1,237	1,237	1,237

Implications

Research

- External Validity
- Beyond Development: Military Assistance, Governance Reform, Etc

Policy

- Improving Program Design to Reduce Violence

The End

Questions?

Theoretical Model: Motivation

- Anecdotal evidence that bargaining occurred in eligible municipalities
  - Implementing agency (DSWD) received extortion letters from insurgents
  - DSWD encouraged negotiation between municipal governments and insurgents
  - Dropped some municipalities because of security concerns

Theoretical Model: Causes of Conflict

- Two reasons for bargaining failure:
  - Commitment problems:
    - Program leads to shift in relative power in favor of government ("buying hearts and minds")
    - Government cannot commit to honoring initial agreement
  - Asymmetric information:
    - Municipal governments know more about program's benefits than insurgents
    - Insurgents' demands may be too high

Theoretical Model: Commitment Problems

- First round: Government offers m_1
  - If accept: Insurgents get m_1, Government $1 - m_1$, Program implemented with prob. p^p
  - If reject: Insurgents get c_1, Government d_1 $(c_1 + d_1 < 1)$, Program implemented with prob. p^c
- Second round: Government offers m_2
  - if accept: Insurgents get m_2, Government $1 - m_2$
  - if reject Insurgents get $c_2(P)$, Government d_2 $(c_2(0) > c_2(1))$
- Bargaining fails if:

$$2\beta\Delta p(c_2(0) - c_2(1)) > 1 - c_1 - d_1$$

Theoretical Model: Predictions

$$2\beta\Delta p\left(c_2\left(0\right)-c_2\left(1\right)\right)>1-c_1-d_1$$

- First-round bargaining is more likely to fail if:
  - Shift in power is large $\left(c_2\left(0\right)-c_2\left(1\right)\right)$
  - Effect of conflict on probability of successful program is large $\left(\Delta p=p^p-p^c\right)$
  - Parties care about future (high β)
- First-round bargaining is more likely to be successful if
  - Cost of conflict is high $\left(1-c_1-d_1\right)$
- Second-round bargaining always successful

Theoretical Model: Asymmetric Information

- Differences to model with commitment problems:
  - No effect of program on future payoffs
  - Insurgents have imperfect information about government's cost of conflict
- Similar predictions
  - Conflict can occur in the first period (separating offer)
  - No conflict in second period (insurgents have learned)

Wrap Up

Setting: Variables that Determine Eligibility

Variable	Weight
Proportion of Households with Electricity	4.41
Proportion of Households with Water-Sealed Toilets	2.83
Proportion of Households with Access to Level III Water Systems	4.56
Proportion of Houses with Roofs Made of Strong Material	4.27
Proportion of Houses with Walls Made of Strong Material	7.47
Proportion of Population Aged 0-6	23.7
Proportion of Population Aged 7-14	18.05
Proportion of Population Aged 15-25	5.96
Proportion of Population Aged >25	0.08
Educational Attainment of All Family Members Relative to Potential	8.28
Density of Good Barangay Roads that are Passable Year-Round	10
Road Distance to Provincial Center of Trade	10

Source:Balisacan and Edillon 2003

Wrap Up

Time-Periods for Empirical Analysis

- Group A (Phases I and II):
  - Pre-program: 2001-2002
  - Early Program: 2003-2004
  - Late Program: 2005-2008
- Group B (Phases IIIA, IIIB and IV):
  - Pre-Program: 2001-2003
  - Early Program: 2004-2007
  - Late Program: 2008

KALAHI-CIDSS Timeline

Phase 1 and 2 Provinces

Group A

- *Municipality Eligibility Announcements*: Dec. 2002
- *Implementation Onset*
  - Phase I (Pilot): Jan. 2003
  - Phase II: June 2003

Wrap Up

KALAHI-CIDSS Timeline

Phase 3 and 4 Provinces

Group B

- *Municipality Eligibility Announcements*: Oct. 2003
- *Implementation Onset*
  - Phase IIIA: Oct 2004
  - Phase IIIB: Jan 2006
  - Phase IV: Aug. 2006

Casualties, Phase 3 & 4 Municipalities