Islamic Resurgence and Social Violence During the Indonesian Financial Crisis

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1   Introduction

One of the most influential views of our time attributes a large part of the failure of development in the post-war period to group conflicts. Recent research in development economics has identified a large collection of policy innovations that would help the poor. But these policies often do not get adopted because of conflicts between groups. Researchers have traditionally focused on the number of groups that are in conflict with each other (Alesina, Baqir, and Easterly 1999, Miguel and Gugerty 2002, and Easterly and Levine 1997). This paper focuses on the intensity with which people identify with their groups. Violence is a negative externality with enormous social costs (e.g. Abadie and Gardeazabal (2003) and Alesina, et.al (1999)), so to the extent group identity and social violence (physical acts of destruction, killing, looting, attacks, burning, clashes, taking hostages, etc., by one group against another) are related, policies taking into account intensity of group identity need to be considered.

This paper examines group identity and group conflict in the specific context of Islamic resurgence during the Indonesian financial crisis. Indonesia experienced a dramatic financial crisis between 1997 and 1998. The exchange rate fell dramatically from 2400 Rupiah to the US dollar to 16000 Rupiah to the US dollar, while the CPI index for food increased from 100 to 261. In one year, asset values dropped by 91%. In contrast, it took three years for asset values to drop 87% during the US Great Depression (Friend 2003). Millions of people lost jobs or shifted to the informal sector (Irawan, et. al., 2000). The crisis reached a peak in early 1998 and led to riots and lootings in every province but one. Between 1990 and 2001, social violence led to more than 6,208 deaths in Indonesia, increasing sharply after the financial crisis of 1997 (Tadjoeddin 2002).

The variety of evidence presented in this paper indicates a strong relationship between religious intensity and social violence during the crisis. I use a unique dataset that tracks every incident

of social violence in Indonesia reported by the national news agency and the national daily over a decade spanning the financial crisis. High religious intensity areas before the crisis have more social violence after the crisis. Stronger measures of religious intensity (potentially better at inculcating group identity) are more strongly associated with social violence. Social violence is negatively associated with other social activities. These results are unlikely to be driven by omitted environmental variables: social violence increases fastest where participation in Koran study also increases the fastest, and this is not true for state or industrial violence. Higher presence of faith-based groups is assocated with higher levels of conflict reported by village heads after the financial crisis (Barron, et. al 2004). As to why these relationships might be observed, see Chen (2005a and 2005b) for theory and evidence of religious intensity as social insurance.

In the following sections, I present an analysis of data from the Database on Social Violence in Indonesia 1990-2001, collected by the UN Support Facility for Indonesian Recovery, and data from the Hundred Villages Survey, a panel of 8,140 households, conducted by the Indonesian Census Bureau. Section 2 describes the data.

Section 3 establishes that religious intensity and social violence are indeed related during the financial crisis. OLS estimates indicate that in high religious intensity areas, violence is more likely to arise, where violence is measured by total number of incidents of social violence as well as number of incidents with minimum of 1 death. These results hold even after controlling for a large set of village and environmental characteristics. In addition, stronger forms of religious intensity, such as religious schools and seminaries, are more strongly associated with violence than are weaker forms, such as Koran study and worship buildings. Multiplying the estimated coefficients by the mean of the religious intensity measures sums up to the mean of the violence incidents, suggesting religious intensity may explain practically all the violence that occurred if the vector of religious measures are taken as exogenous. The R^2 of the specifications suggest religious intensity may explain one-third of the variance of violence that occurred.

Section 4 discusses the possibility of reverse causality. Because most religious intensity measures are collected before the crisis and are relatively time-invariant and because villages are unlikely to build schools, seminaries, or religious buildings in anticipation of social violence that mostly occurred after the crisis, reverse causality is an unlikely confound. In fact, the relationship between pre-crisis measures of religious intensity and social violence largely begins after the crisis. Section 5 finds that social violence is negative correlated with other social activities, suggesting that networks of engagement across groups may mitigate group conflict (Barron, et. al 2004). It also suggests that omitted variables associated with both Koran study groups and "placebo" social activities are not driving the relationship between religious intensity and social violence.

A fundamental issue in the interpretation of the OLS specification is the presence of fixed unobservable factors that are correlated with religious intensity and social violence across provinces. To address this potential source of bias, Section 6 uses longitudinal data on Koran study, which is tracked over time. Koran study remains associated with communal violence after controlling for province and time fixed effects but is unrelated to state or industrial violence. This last

finding lessens the concern that omitted variables drive changes in both Koran study and violence since there is something specific about communal violence rather than violence in general that is associated with Koran study during the financial crisis. Section 7 discusses some alternative explanations and Section 8 concludes.

2   Data

The empirical analysis draws from the UNSFIR Database on Social Violence in Indonesia 1990-2001, which tracks violence before and during the financial crisis, and The Hundred Villages Survey, which tracks economic and religious aspects of over 8,000 households before and during the financial crisis. The analysis in subsequent sections examine the relationship between religious intensity recorded in the Hundred Villages Survey and violence recorded in the Database on Social Violence in Indonesia 1990-2001. (Chen 2005b examines how economic conditions recorded in the Hundred Villages Survey affects the relationship between religious intensity and social violence.)

2.1   Social Violence Data

The UNSFIR Database on Social Violence in Indonesia 1990-2001 (Tadjoeddin 2002) contains every incident of social violence reported by the national news agency, *Antara*, and the national daily, *Kompas*. The database tracks property damage as well as interpersonal violence. Social violence refers to physical acts of destruction, killing, looting, attacks, burning, clashes, taking hostages, etc., by a group of people. Because press policies differ before and after the crisis, the analysis uses cross-sectional as well as longitudinal data to avoid relying solely on time-series variation of media coverage.

A priori, there appears to be prima facie evidence of a rise in religious-based violence during and after the financial crisis. Even if violence began for non-religious reasons, the lines of demarcation often became religious. Communal violence accounts for 77% of the total deaths due to social violence; the other categories are state-community and industrial violence. Communal violence is defined as violence between two groups of community, one group being attacked by the other. State-community violence is violence done by communities protesting against state institutions, such as the military, the administration, or security officials. Industrial violence is violence that arises from problems of industrial relations. Communal violence has the widest regional distribution. It is found in 116 of 295 district/cities and 22 of 26 provinces.

Ethnic, religion, and migration-related violence, is the most severe type of communal violence, accounting for 68% of total deaths due to communal violence. While both ethnic and religious violence are coded together (ethnic groups are usually associated with a particular religion in Indonesia), at least some of these acts of communal violence are definitely religious in nature: descriptions in Tadjoeddin (2002) include "killing by evoking black magic shaman" (a form of voodoo), "mass rage as someone recognized himself as God's messenger", "church ruined", "immoral location ruined", "man taken hostage by Islam holy warrior", "gambling and prostitution location

destroyed", and "burning of entertainment place". Violence as a result of difference in political views accounts for only 3.3% of deaths due to communal violence (Table 2). This is defined as violence due to conflicts between and within political parties and their supporters. Figure 1 indicates that the scale of violence increased sharply in 1998. Tables 1 and 2 and Figure 1 are from Tadjoeddin (2002).

Since the national media often do not record localized conflicts, the data may underreport levels of conflict. UNSFIR captures 1,093 incidents of conflict and 6,208 deaths over 12 years. Under a broader definition of conflict, the PODES data (Potensial Desa/Village Potential Statistics) documents almost 5000 villages as reporting conflicts in one year alone (Barron, et. al. 2004).

2.2 Religion and Economic Data

Household religion and economic data come from The Hundred Villages Survey, collected by the Indonesian Central Statistics Office. The panel dataset follows 8,140 households from May 1997 to August 1999, beginning before the crisis and continuing in four waves after the crisis (Figure 2). Religious intensity at the household level is measured using the response to "In the past 3 months, has your household increased, decreased, stayed the same, or not participated in the study of Koran (Pengajian)?" This question is asked after the crisis and is coded as 1/0. Chen (2005a) verifies Pengajian participation actually measures religious intensity by examining its correlation with other measures of religious intensity, such as Islamic school attendance, Koran ownership, worshipping, and measures of belief such as answering, "It is up to God," in response to "What is your ideal number of sons?" as well as religious opposition to contraception use.

Village-level religiosity measures of per capita number of mosques, Islamic chapels, churches, Hindu temples, and Buddhist temples are taken from the 1997 PODES data (Potensial Desa/Village Potential Statistics), which asks for 1996 information. The religiosity measures of per capita number of Islamic boarding schools, religious schools, and seminaries are taken from 1998 PODES. Since it is unlikely that new religious institutions were built during the crisis, I interpret these as pre-crisis numbers and divide by the 1997 PODES population accordingly (1998 PODES population numbers would be affected by crisis-induced migration).

Since the Hundred Villages Survey does not cover separatist areas such as Aceh, no incident of separatist violence is included in the following analysis. The Hundred Villages Survey and the Database on Social Violence overlap for the following eight provinces: Bali, Jawa Barat, Jawa Timur, Kalimantan Timur, Lampung, Nusa Tenggara Timur, Riau, and Sulawesi Tenggara. Since violence data is recorded at the province level, province-level clusters are included in specifications where religious intensity is measured at the village level.

3 Cross-Sectional Variation

Is violence more likely to arise in high religious intensity areas? Are stronger measures of religious intensity more strongly associated with social violence? Table 3 reports OLS estimates of an

equation linking social violence and religious intensity:

$$V_{jp} = \beta' \mathbf{R}_{jp} + \alpha' \mathbf{X}_{jp} + \varepsilon_{jp}$$

where V_{jp} represents in Columns 1 and 2 all social violence incidents from 1990-2001 and in Columns 3 and 4 all social violence incidents with minimum 1 death in village j in province p, $\mathbf{R}_{jp}$ is a vector for village j in province p representing percentage of Pengajian participation in a village, religious worship buildings per 1000 population, religious schools per 1000 population, and seminaries per 1000 population, and $\mathbf{X}_{jp}$ represents village, geographic, and fiscal control variables (urban dummy, population, area, number of shops per 1000 population, mean pre-crisis monthly per-capita non-food expenditures, dummies for geographic characteristics flat, steep, beach, forest, valley, and river, 1996-1997 INPRES funds per 1000 population for economic activity, building and facilities, offices and institutions, human resources, and IDT, another village assistance program).

The estimates show a strong association between each measure of religious intensity and violence. The strong association remains after controlling for village, geographic, and fiscal characteristics (Columns 2 and 4).

In fact, stronger measures of religious intensity–religious schools and seminaries, institutions perhaps better at inculcating group identity–are much more strongly associated with violence. Religious schools per 1000 population and seminaries per 1000 population are associated with violence at 1% statistical significance in most specifications (Table 3 Columns 1-4). Percentage of Pengajian participation and worship buildings per 1000 population are associated with violence at 5% to 10% statistical significance in these specifications. These results corroborate Barron, et. al. (2004) who also find in their cross-sectional analysis of the 2003 PODES data, higher presence of faith groups is associated with higher levels of conflict.

In magnitudes, multiplying the coefficient β by the mean of the religious intensity measures sums up to the mean of the violence incidents. Thus, if we take $\mathbf{R}_{jp}$ as exogenous, this suggests religious intensity may explain practically all the violence that occurred in averages. The R^2 of the regression displayed in Column 1 is 0.34, suggesting religious intensity may explain one-third of the variance of violence that occurred. The R^2 of the regression displayed in Column 3 is 0.32. Columns 2 and 4 have R^2 of 0.49 and 0.48 respectively.

4   Reverse Causality

A possible explanation for a link between religious intensity and violence is the response of religious intensity to social violence instead of vice versa. The empirical setup precludes this possibility because of the fact that most religious intensity measures are relatively time-invariant and are pre-crisis measures. Since it is unlikely that new religious institutions were built during the crisis, these measures can be interpreted as pre-crisis numbers. Most violence (96%) occurs after the crisis (Figure 1). It seems unlikely villages build schools, seminaries, or religious buildings in anticipation of social violence, so reverse causality is an unlikely confound.

Separately regressing violence year-by-year on pre-crisis religious intensity, with the following regression,

$$V_{jpt} = \beta'_t \mathbf{R}_{jp} + \alpha'_t \mathbf{X}_{jp} + \varepsilon_{jpt},$$

suggests the strong relationship between pre-crisis religious intensity and social violence begins after the crisis. Estimates are reported in Table 4. For example, the estimates of β_t in 1993 comparing with 1998 rise from 0.252 to 12.107 for Pengajian participation and 1.449 to 23.659 for seminaries (Columns 1 and 3). Figure 3 Panel A displays the relationship between August 1998 Pengajian participation and year-by-year social violence. Figure 3 Panels B-D display the relationship between pre-crisis per-capita worship buildings, religious schools, and seminaries, respectively, and year-by-year social violence. Table 4 and Figure 3 have no information displayed for 1990-1992 and 1994 because there are no reported incidents of social violence that overlap with the Hundred Villages Survey in those years.

5   Other Social Activities

Social violence is negatively associated with other social activities. Table 5 displays separate partial correlations between social violence and each recorded social activity. While Pengajian is positively correlated with social violence and statistically significant at the 5% level, social violence is not significantly associated with any other surveyed social activity: sports (Olahraga), burial society (Kematian), club for obtaining skills (Karang Taruna), family welfare movement (PKK and "occasional training for women"), and "10 helps for housing" (Dasawisma). These results suggest omitted variables that are associated with both religious and non-religious social activities are not driving the relationship between religious intensity and social violence.

In fact, the estimates suggest participation in non-religious social activities is negatively associated with social violence. Each percentage point of Pengajian participation is associated with 0.39 more incidents of social violence whereas each percentage point in participation in women's training, housing help, skill learning, or burial societies is associated with 0.30 to 0.50 fewer incidents of social violence.

6   Panel Data

The significant relationship between some measures of religious intensity and social violence before the crisis (Table 4) suggests some unobserved environmental variables may be correlated with religious intensity (for example, if ethnic-religious diversity is greater where there are more religious institutions, and diversity is correlated with violence, this may bias the relationship between religious intensity and social violence upwards). To address this possibility, I also examine the relationship between Pengajian participation and social violence controlling for province and time fixed effects. Pengajian participation is the only measure of religious intensity that is time-varying.

Fixed effects controls for environmental characteristics such as religious or ethnic diversity across regions.

To construct the panel of religious intensity and social violence, recall that information on Pengajian participation is collected for 3-month periods. I match the average Pengajian participation rate of each province for a 3-month period to the number of incidents of social violence for the same 3-month period. Since the Hundred Villages Survey collected Pengajian participation at 3 different times, this gives me 8 provinces and 3 time periods for a total of 24 observations to estimate:

$$V_{pt} = \beta R_{pt} + \kappa_p + \tau_t + \varepsilon_{pt}$$

where V_{pt} represents incidents of social violence, R_{pt} represents percentage Pengajian participation in province p at time t, κ_p are province fixed effects, and τ_t are time fixed effects. I show specifications with and without weighting by the number of households in the Hundred Villages Survey per province.

The estimate of about 4.4 in Column 4 of Panel A in Table 6 indicates Koran study is associated with communal violence incidents with minimum 1 death at 10% statistical significance. The estimate of 5.1 in Column 2 indicates Koran study is positively associated with incidents of communal violence. The coefficient 4.3 in Column 4 is smaller than the coefficient 11 in Column 3 of Table 3, one reason for which is that violence is restricted to a 3-month period here whereas in Table 3, violence was aggregated for 1990-2001. The estimates are roughly the same with and without population weights (Columns 1 and 3).

Even with controls for fixed effects, omitted variables may be driving changes in both Koran study and violence. To the extent the economic distress that stimulates Koran study would stimulate any kind of social violence, observing the relationship between changes in Koran study and changes in other types of social violence provides a test of this possibility. When different types of violence are considered in Panels B and C, the association between Koran study and other types of violence, state-community and industrial, is weaker, with coefficients of -0.11 and 0.91 respectively. The sum of state-community and industrial violence also is weakly associated with Koran study. There is not enough variation in state-community and industrial violence incidents with minimum 1 death to run fixed effects regressions. These findings lessen the concern that omitted variables drive changes in both Koran study and violence since there is something specific about communal violence rather than violence in general that is associated with Koran study.

7 Alternative Explanations

One alternative explanation for the rise in social violence is that instead of economic distress, it is the political vacuum created during the crisis that allowed social violence to arise. However, between 1990 and 2001, violence as a result of difference in political views accounts for only 3.3% of deaths due to communal violence (Table 2). A related hypothesis is that violence arises when civic/polic institutions weaken and that religious institutions are correlated with the presence of

civic/police institutions. This also does not appear to be the case.

Another possibility is that religious fragmentation is necessary for social violence. However, greater religious fragmentation of an area, as computed by the Herfindahl index of religious worship buildings, is not strongly associated with pre-crisis religious intensity. Nor is it the case that less violence occurs under a single religious regime when there is exactly 1 mosque in the village.

Since most measures of religious intensity like worship buildings, schools, and seminaries are collected before the financial crisis, the association between religious intensity and social violence is unlikely to be due to economic distress stimulating both religious intensity and social violence. Even if economic distress explains the relationship between changes in religious intensity and changes in social violence, we might have expected state and industrial violence to also increase with Koran study, but this is not the case.

8   Conclusion

In this paper, I present an analysis of data from the Hundred Villages Survey and data from the Database on Social Violence in Indonesia 1990-2001. OLS estimates show a large positive relationship between religious intensity and social violence. Because most religious intensity measures are relatively time-invariant and are pre-crisis measures and because villages are unlikely to build schools, seminaries, or religious buildings in anticipation of social violence, reverse causality is unlikely to explain this association. In fact, a strong relationship between pre-crisis measures of religious intensity and social violence begins after the crisis. In addition, stronger forms of religious intensity are more strongly associated with violence. To control for potential omitted variables bias, I use longitudinal data on Koran study, which is tracked over time. Koran study remains associated with communal violence after including province and time fixed effects but is unrelated to state or industrial violence.

Shedding light on why religious intensity and social violence are linked, Chen (2005b) shows that religious intensity is linked to more social violence in regions that are more economically distressed. Alternative social insurance mitigates this effect. To the extent governments, international organizations, and NGOs are concerned about ideological extremism, in particular because it may lead to religious conflict and violence, the results here and in Chen (2005a) suggest increasing their role in social insurance may mitigate fundamentalist tendencies.

9   Data Appendix

The empirical analysis draws from The Hundred Villages Survey, collected by the Indonesian Central Statistics Office. The panel dataset follows 8,140 households from May 1997 to August 1999, beginning before the crisis and continuing in four waves after the crisis (Figure 1). In the pre-crisis period, the survey observes 120 randomly selected households in each of 100 communities. However between 1997 and 1998, the number of village enumeration areas increases from 2 to 3, necessitating

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a replacement of about 40 randomly selected households per village. The partial replacement of pre-crisis households is why the panel contains 8,140 instead of 12,000 households. The survey also collects village-level information in the first wave of 1997 and 1998. A more detailed description of the survey questions and variable construction used in the tables is provided below. The survey is in Indonesian and was translated with the help of two translators.

One measure of religious intensity is the response to "In the past 3 months, has your household increased, decreased, stayed the same, or not participated in the study the Koran (Pengajian)?" More precisely, the phrase is "Pengajian/kegiatan agarma lainnya," which translates to religious activity, however translators say the question would be interpreted by native Indonesians as specifically referring to Koran study; non-Muslims may interpret the question as referring to the equivalent in their respective religion. This question is asked after the crisis and is coded as 1/0.

The controls, $\mathbf{X}_{ij}$, include pre-crisis May 1997 values of: village characteristics–urban dummy, population, area, number of shops per 1000 population; geographic characteristics–dummies for flat, steep (the excluded topography dummy is slight angle), beach, forest, valley, river terrain (the excluded geography dummy is other); and fiscal characteristics–INPRES (Presidentially Instructed Program for Village Assistance, implemented during 1996-1997) funding received normalized to $ per 1000 population, which divides into funds used for productive economic effort, for buildings and facilities, for offices and institutions, and for human resources, and total IDT (another village assistance program) funds received by the household between 1994-1996.

I use the entire sample of 8,140 households. Appendix Table A presents some descriptive statistics.

10   References

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Figure 1: Social Violence, 1990-2001

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Deaths				10		2	227	131	1343	1813	1617	1065
Incidents				3		2	8	15	124	300	408	233
Pengajian									61	67	71	
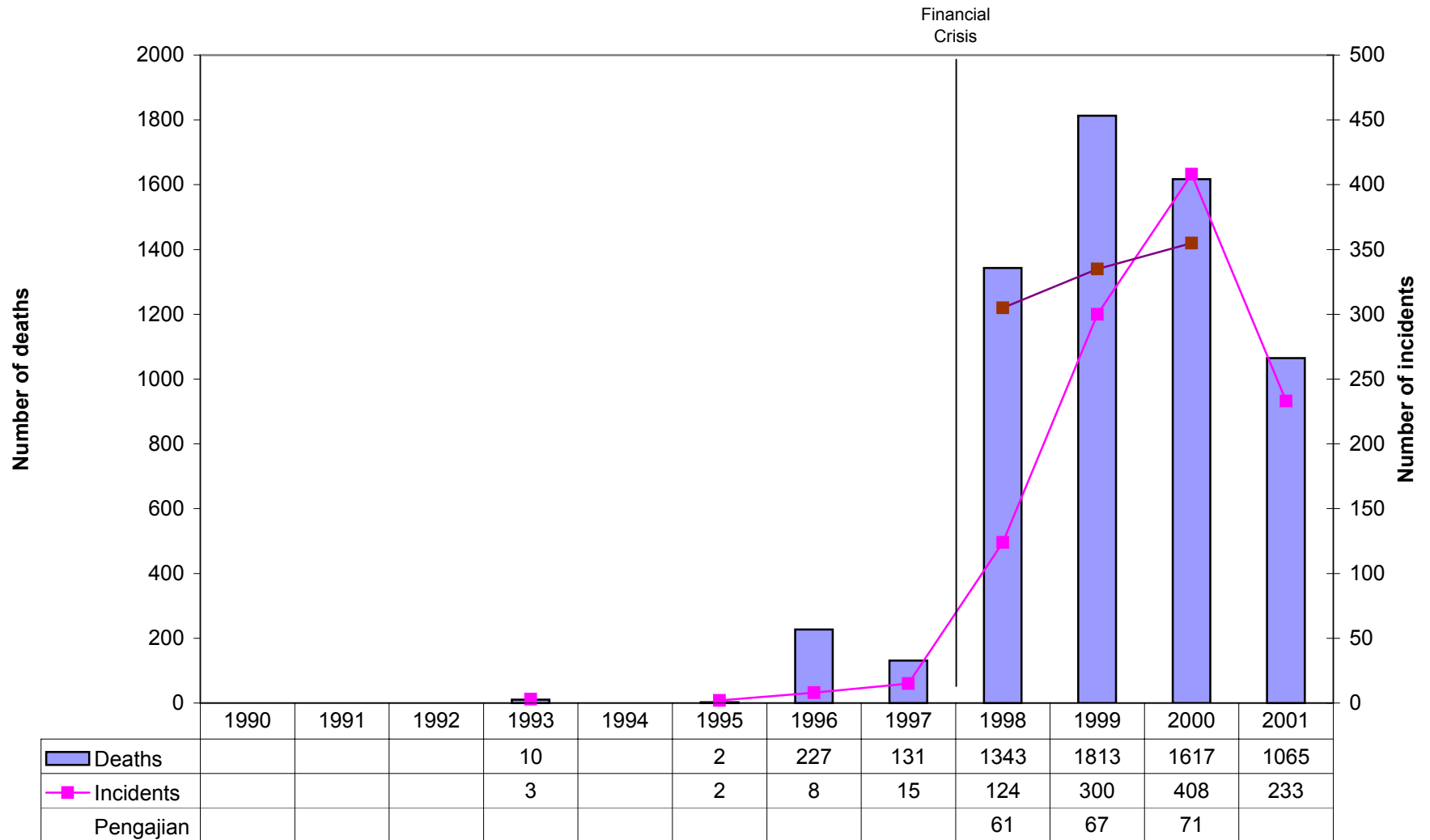
Figure 2: Timing of 100 Villages and PODES Survey Waves and the Rp/USD Exchange Rate

Figure 2A: August 1998 Pengajian Participation and Social Violence, 1990-2001
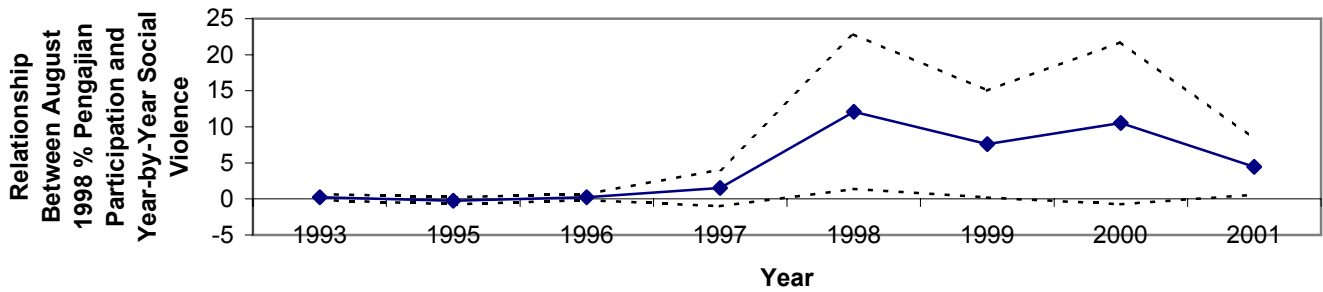
Figure 2B: Pre-Crisis Worship Buildings Per 1000 Population and Social Violence, 1990-2001
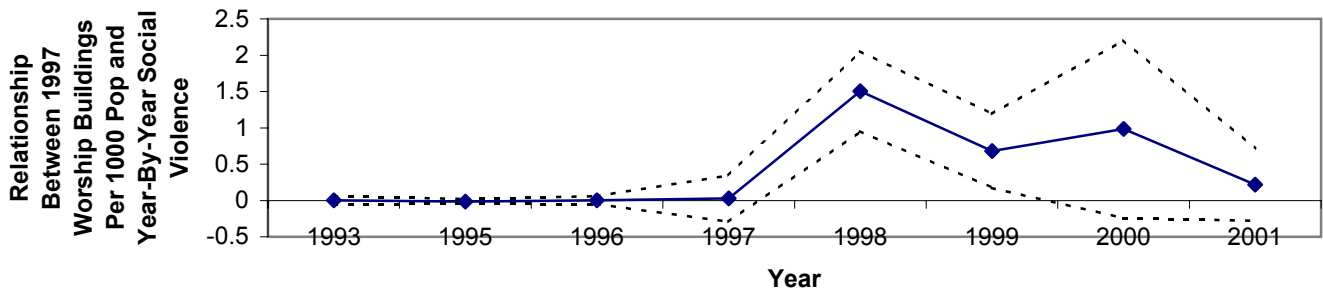
Figure 2C: Pre-Crisis Religious Schools Per 1000 Population and Social Violence, 1990-2001

Figure 2D: Pre-Crisis Seminaries per 1000 Population and Social Violence, 1990-2001

Table 1--Social Violence by Category, 1990-2001

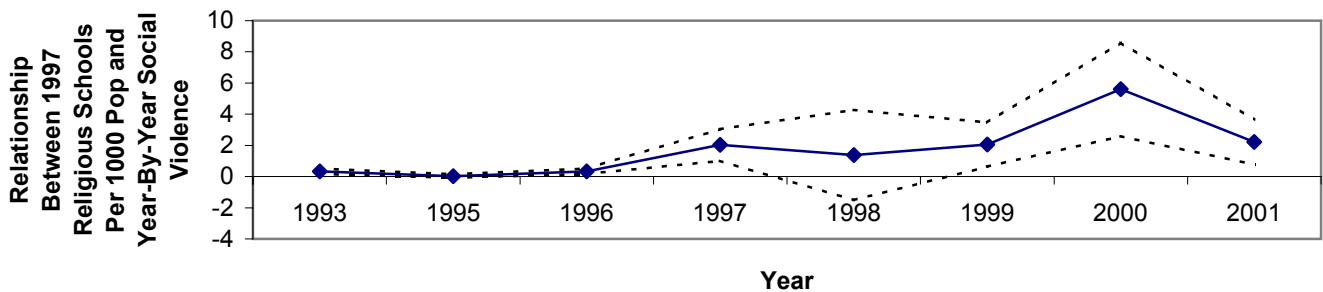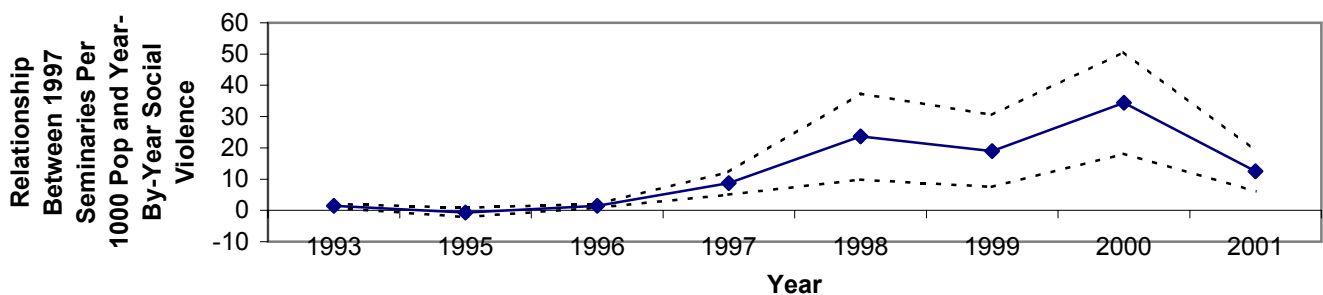| Category	Number of Incidents	Number of Incidents with Min 1 Death	Number of Deaths (minimum value)	% Death to Total Death
	(1)	(2)	(3)	(4)
Communal Violence	465	262	4771	76.9
Separatist Violence	502	369	1370	22.1
State-Community Violence	88	19	59	1.0
Industrial Relations Violence	38	4	8	0.1
Total	1093	654	6208	100

Social Violence data from UN Support Facility for Indonesian Recovery, "Database on Social Violence in Indonesia 1990-2001".
An incident of social violence is recorded if the national news agency, *Antara*, or the national daily, *Kompas*, reported an incident
  with at least one victim, be it human (casualties or injuries) or material (such as houses, buildings, or vehicles damaged or burned).
  96% of the incidents occur between 1998-2001; most are communal violence, defined as social violence between two groups
  of community, one group being attacked by the other.
Communal Violence: social violence between two groups of community, one group being attacked by the other.
Separatist Violence: social violence between the state and the people of a certain area because of regional separatism.
State-Community Violence: violence between the state and the community who are expressing protests against state institutions.
Industrial Violence: violence that arises from problems of industrial relations.

Table 2--Communal Violence by Sub-Category, 1990-2001

	Deaths		Incidents	
Sub-Category	Number	% of Total	Number	City/District
	(1)	(2)	(3)	(4)
Ethnic, Religion, and Migration	3230	67.7	233	39
The May 98 Riots	1202	25.2	6	10
Differences in Political Views	156	3.3	79	54
Civil Commotion (Tawuran)	87	1.8	70	28
Issue of 'Dukun Santet'	65	1.4	28	17
Competing Resources	16	0.3	16	10
Food Riots	5	0.1	23	22
Other	10	0.2	10	9
Total	4771	100	465	116

Social Violence data from UN Support Facility for Indonesian Recovery, "Database on Social Violence in Indonesia 1990-2001".
An incident of social violence is recorded if the national news agency, *Antara*, or the national daily, *Kompas*, reported an incident
  with at least one victim, be it human (casualties or injuries) or material (such as houses, buildings, or vehicles damaged or burned).
  96% of the incidents occur between 1998-2001; most are communal violence, defined as social violence between two groups
  of community, one group being attacked by the other.
Communal Violence: social violence between two groups of community, one group being attacked by the other.
Ethnic, Religion, and Migration: religion propagation related to particular regions and ethnic groups
The May 98 Riots: riots in big cities preceding fall of President Suharto in May 1998
Differences in Political Views: conflicts between and within political parties and their supporters
Civil Commotion (Tawuran): clashes between villages, neighborhoods, or groups
Issue of 'Dukun Santet': killings of people accused of evil magic and witchcraft
Competing Resources: disputes between community groups competing for economic resources
Food Riots: mass riots and lootings for staple foods between January to March 1998

Table 3--Relationship between Religious Intensity and Social Violence

	Incidents of Social Violence		Incidents with Minimum 1 Death	
	(1)	(2)	(3)	(4)
All Violence (OLS)				
% Pengajian Participation in Village, August 1998	35*	36*	11*	11*
	(17)	(17)	(5)	(6)
Religious Worship Buildings Per 1000 Pop	4**	3*	1**	1*
	(2)	(2)	(0)	(0)
Religious Schools Per 1000 Pop	16**	14***	5*	5***
	(7)	(4)	(2)	(1)
Seminaries Per 1000 Pop	115***	101***	36***	32***
	(18)	(25)	(6)	(8)
R^2	0.34	0.49	0.32	0.48
N	93	93	93	93
Controls	N	Y	N	Y

Regressions are OLS regressions of 93 villages and include province-level clusters.

Social Violence data from UN Support Facility for Indonesian Recovery, "Database on Social Violence in Indonesia 1990-2001".

An incident of social violence is recorded if the national news agency, *Antara*, or the national daily, *Kompas*, reported an incident with at least one victim, be it human (casualties or injuries) or material (such as houses, buildings, or vehicles damaged or burned). 96% of the incidents occur between 1998-2001; most are communal violence, defined as social violence between two groups of community, one group being attacked by the other.

Control variables are Village, Geography, and Fiscal Characteristics are listed below.

Village Characteristics -- Urban, Population, Size, Number of Shops Per 1000 Pop, Mean Pre-Crisis Per-Capita Non-Food Expenditures

Geography Characteristics -- Flat, Steep, Beach, Forest, Valley, River

Fiscal Characteristics -- 1996-1997 INPRES Funds Per 1000 Pop for Economic Activity, Building and Facilities, Offices and Institutions, Human Resources, and IDT funds

Dependent Variable: Incidents of Social Violence	Pengajian Participation	Worship Buildings	Religious Schools	Seminaries
	(1)	(2)	(3)	(4)
1993	0.252	0.004	0.339***	1.449***
	(0.211)	(0.027)	(0.085)	(0.304)
1995	-0.251	-0.014	0.032	-0.668
	(0.244)	(0.016)	(0.058)	(0.748)
1996	0.252	0.004	0.339***	1.449***
	(0.211)	(0.027)	(0.085)	(0.304)
1997	1.509	0.027	2.033***	8.695***
	(1.264)	(0.160)	(0.509)	(1.824)
1998	12.107*	1.504***	1.388	23.659**
	(5.352)	(0.275)	(1.447)	(6.880)
1999	7.605*	0.682**	2.050**	18.988**
	(3.704)	(0.254)	(0.706)	(5.761)
2000	10.521	0.983	5.598***	34.414***
	(5.622)	(0.613)	(1.508)	(8.141)
2001	4.456*	0.220	2.214**	12.534***
	(1.935)	(0.249)	(0.722)	(3.243)
Controls	Y	Y	Y	Y

Regressions are OLS regressions of 93 villages and include province-level clusters.

Social Violence data from UN Support Facility for Indonesian Recovery, "Database on Social Violence in Indonesia 1990-2001".

An incident of social violence is recorded if the national news agency, *Antara*, or the national daily, *Kompas*, reported an incident
  with at least one victim, be it human (casualties or injuries) or material (such as houses, buildings, or vehicles damaged or burned).
  96% of the incidents occur between 1998-2001; most are communal violence, defined as social violence between two groups
  of community, one group being attacked by the other.

Control variables are Village, Geography, and Fiscal Characteristics are listed below.

Village Characteristics -- Urban, Population, Size, Number of Shops Per 1000 Pop, Mean Pre-Crisis Per-Capita Non-Food Expenditures

Geography Characteristics -- Flat, Steep, Beach, Forest, Valley, River

Fiscal Characteristics -- 1996-1997 INPRES Funds Per 1000 Pop for Economic Activity, Building and Facilities, Offices and Institutions,
  Human Resources, and IDT funds

Table 5--Relationship between Social Activities and Social Violence

	Incidents of Social Violence	Incidents with Minimum 1 Death
	(1)	(2)
All Violence (OLS)		
% Pengajian Participation in Village, August 1998	39**	12**
	(12)	(4)
% Training for Women Participation, August 1998	-33	-9
	(30)	(10)
% 10 Helps for Housing Participation, August 1998	-50	-15
	(30)	(10)
% Club for Skill Learning Participation, August 1998	-32	-10
	(25)	(8)
% Burial Society Participation, August 1998	-30	-9
	(18)	(6)
% Sports Club Participation, August 1998	3	-0
	(10)	(4)
% Savings Club Participation, August 1998	-1	-1
	(22)	(8)
Controls	Y	Y

Each coefficient represents a separate OLS regression of 93 villages, conditional on controls, and include province-level clusters.
Social Violence data from UN Support Facility for Indonesian Recovery, "Database on Social Violence in Indonesia 1990-2001".
An incident of social violence is recorded if the national news agency, *Antara*, or the national daily, *Kompas*, reported an incident
  with at least one victim, be it human (casualties or injuries) or material (such as houses, buildings, or vehicles damaged or burned).
  96% of the incidents occur between 1998-2001; most are communal violence, defined as social violence between two groups
  of community, one group being attacked by the other.
Control variables are Village, Geography, and Fiscal Characteristics are listed below.
Village Characteristics -- Urban, Population, Size, Number of Shops Per 1000 Pop, Mean Pre-Crisis Per-Capita Non-Food Expenditures
Geography Characteristics -- Flat, Steep, Beach, Forest, Valley, River
Fiscal Characteristics -- 1996-1997 INPRES Funds Per 1000 Pop for Economic Activity, Building and Facilities, Offices and Institutions,
  Human Resources, and IDT funds

Table 6--Relationship between Religious Intensity and Social Violence (Panel)

	Incidents of Social Violence		Incidents with Minimum 1 Death	
	(1)	(2)	(3)	(4)
Panel A: Communal Violence (Fixed Effects)				
% Pengajian Participation in Province	4.340	5.107	3.989*	4.348*
	(4.598)	(5.850)	(2.209)	(2.335)
Panel B: State-Community Violence				
% Pengajian Participation in Province	-0.034	-0.108	n/a	n/a
	(1.090)	(1.469)		
Panel C: Industrial Violence				
% Pengajian Participation in Province	1.190	0.909	n/a	n/a
	(1.215)	(1.311)		
Population Weighted	N	Y	N	Y
Fixed Effects	Province, Time	Province, Time	Province, Time	Province, Time

Regressions are Fixed Effects regressions of 8 provinces in each of 3 time periods, a total of 24 observations,
  with province and time fixed effects. Population weights are the number of households per province in the sample.
Each coefficient represents a separate OLS regression of Pengajian Participation Rates for 3-month period on Violence.
Social Violence data from UN Support Facility for Indonesian Recovery, "Database on Social Violence in Indonesia 1990-2001".
An incident of social violence is recorded if the national news agency, *Antara* , or the national daily, *Kompas* , reported an incident
  with at least one victim, be it human (casualties or injuries) or material (such as houses, buildings, or vehicles damaged or burned).
  96% of the incidents occur between 1998-2001; most are communal violence, defined as social violence between two groups
  of community, one group being attacked by the other.
Communal Violence: social violence between two groups of community, one group being attacked by the other.
State-Community Violence: violence between the state and the community who are expressing protests against state institutions.
Industrial Violence: violence that arises from problems of industrial relations.
n/a: Too few state-community and industrial violence incidents with minimum 1 death to run fixed effects regressions.

Appendix Table A--Descriptive Statistics

Household Summary Statistics

Percentage Own Wetland	31%
Percentage Own Dryland	66%
Percentage in Farming	66%
Wetland Ownership (Hectares)	0.17
	(0.01)
Dryland Ownership (Hectares)	0.72
	(0.01)
Surname Indicates Haj Pilgrimage	1.0%
Number of Children attending Islamic School	0.15
	(0.01)
Monthly Per-Capita Food Expenditure, May 1997	14.6
	(0.1)
Monthly Per-Capita Non-Food Expenditure, May 1997	7.3
	(0.2)
Household Size	4.16
	(0.02)
Government worker	6%
Service Worker	10%
N	8140

Village Summary Statistics

Standard Deviation of Village Consumption Shock during Crisis (Aug 1998 - May 1997)	11.42
	(1.56)
Standard Deviation of Village Consumption Shock Non-Crisis (May 1999 - Dec 1998)	9.22
	(2.16)
Total Worship Buildings Per 1000 Pop	3.83
	(0.28)
Religious Schools per 1000 Pop	0.12
	(0.04)
Seminaries per 1000 Pop	0.01
	(0.01)
% Pengajian Participation in Village, August 1998	0.61
	(0.03)
Credit Available	0.34
	(0.05)
Number Shops Per 1000 Pop	0.07
	(0.03)
Urban	0.20
	(0.04)
1996-1997 INPRES Funds in $/1000 Pop	0.91
	(0.09)
N	99

Crisis Summary Statistics

	1998 Aug	1998 Dec	1999 May	1999 Aug
Monthly Per-Capita Non-Food Expenditure, Change	-4.7	1.1	-0.1	0.2
	(0.2)	(0.2)	(0.2)	(0.2)
Pengajian Participation Rate	61%	unavail.	67%	71%
Pengajian Increase in Last 3 Months	9%	unavail.	7%	7%
Pengajian Decrease in Last 3 Months	9%	unavail.	10%	11%

Violence Summary Statistics

Incidents of Social Violence	34.65
	(3.20)
Incidents of Social Violence with Minimum 1 Death	11.26
	(1.02)
Incidents of Communal Violence	0.83
(3 month period)	(0.29)
Incidents of Communal Violence with Minimum 1 Death	0.33
(3 month period)	(0.16)
Incidents of State-Community Violence	0.08
(3 month period)	(0.06)
Incidents of Industrial Violence	0.17
(3 month period)	(0.08)
% Pengajian Participation in Village, August 1998	0.66
(3 month period)	(0.03)
Number of Provinces	8