Disaster and political trust: The Japan Tsunami and Earthquake of 2011.

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Abstract.

We showhow disasters influence subjective political trust by testing the effect of the 2011 Great East Japan. For this test, we used the individual level data of 7 Asian countries including Japan covering the period before and after the disaster. The key findings are: the disaster led to sharp drops in trust of the national government, trust in the Prime Minister, trust in political parties, and trust in the parliament. However, we do not find a loss of support in local governments.

Key work: Political trust; Natural disaster; Nuclear accident

JEL classification: H84; A54; H11; J28

1. Introduction

When disaster strikes, we usually here of people from near and far coming to help the victims. People come to each others' assistance in rebuilding their homes and their lives. There may be short bursts of increased trust in other people. Does this also apply to confidence in government?

We don't see long-term increases in trust in others, since this form of trust—"generalized trust"—is learned early in life and does not change much over people's lives (Uslaner, 2002, ch. 6). How do disasters shape trust in government?

Disasters and other crises may lead to more bonding among people. Aldrich (2011) finds that social ties among residents were the central factor in helping people recover from the 1995 earthquake in Kobe, Japan. Putnam (2002) argues that all sorts of measures of "social capital" or cohesion increased dramatically after the September 11, 2001 attacks on the World Trade Center and other targets. Americans became more trusting of most government institutions (especially the military) and of each other–and also were more likely to take part in community organizations and especially to donate to charitable causes.

The 9/11 attacks in the United States led to "us against them" sentiments in the United States. Natural disasters are different. People are more likely to blame government for not doing enough to prevent—or to mitigate—the disaster. And this is especially likely to be the case if people believe that government officials could have done more to limit the extent of damages, but were too closely linked to private interests that had financial interests that would have been hurt if they had taken strong steps to mitigate damages.

Trust in government is based to a considerable extent on people's

expectations of how well government performs (Hetherington, 2006). Specifically, government must deliver basic services to warrant people's trust (Christensen and Laegreid, 2002; Uslaner, 2011). In the face of a natural disaster, expectations are high. People cannot cope with the trauma of rebuilding their lives without assistance. If government agencies are able to steer a recovery and to restore essential services, people will have confidence in their leaders. When government fails, trust in political institutions will fall—especially when people believe that their leaders could have done better—and even more if they believe that the leaders may have played some role in making the impact of the disaster worse than it might have been.

This is what we observe in our analysis of trust in government in Japan after the March 2011 earthquake and tsunami. Using data from the East Asia Barometer before and after the disaster, we find sharp drops in trust the national government, trust in the Prime Minister, trust in political parties, and trust in the parliament. We do not find a loss of support in local governments. Local governments could not readily be blamed for the failure to minimize damages and they help people reestablish their lives after the disaster.

2. Overview of the Great East Japan Earthquake

On March 11, 2011, a devastating earthquake in Japan caused a tsunami. The Great East Japan Earthquake is regarded as one of the most catastrophic events in human history. Its magnitude was estimated to be 9.0 (Daily Yomiuri 2011a), which was the fourth largest recorded earthquake in history. The earthquake triggered a tsunami with a maximum height of more than 20 meters (65 feet). It devastated Japan's northeast coast and shut down the cooling systems and backup generators

at the Fukushima Dai-ichi nuclear power plant (*Daily Yomiuri* 2011b).[1] Almost 16,000 people died from the tsunami and 2,600 disappeared. More than 400,000 residents were forced to evacuate (National Police Agency of Japan 2014).

The disaster led to massive disruptions in people's lives, but people were able to band together to help each other rebuild without any lawlessness (Aldrich and Sawada 2015; Ono 2012)[2]. While we expect to see a loss of trust in all national institutions, including political parties, the long dominant Liberal Democratic Party (LDP) increased subsidies to local governments. This allowed local government officials to increase the number of disaster preparation measures. Supporters of the LDP may have received greater public investments in reliable infrastructure as a disaster prevention measure. Aldrich and Sawada (2015) examined whether local support for the long dominant Liberal Democratic Party affects mortality rates of the Great East Japan Earthquake. Yet, the degree of supporting LDP did not contribute to reduce the mortality rate (Aldrich and Sawada 2015).

The reaction to the role of the national government was strongly negative..[3] Kingston (2012, 188, 191-192) argues:

[T]he fiercely politics of the complex Tohoku Catastrophe has slowed action

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[1] According to Tanikawa et al. (2014), the material loss of building and road infrastructure was estimated to be 31.8 and 2.1 million tons, respectively. The "World Bank and Japanese government say that there's somewhere between $122 billion and $235 billion worth of damage to clean up" (Hammer 2011:28).

[2] Social ties played a critical role in the recovery from the disaster (Aldrich 2012; Toya and Skidmore 2014; Yamamura et al., 2015; Yamamura 2010 and 2016).

[3] Natural disaster caused government sector to be more corrupted (Yamamura 2014).

> on recovery and discredited politicians of all political stripe. The public views Diet members with growing contempt because too many politicians seem to have prioritized pretty party politics over reconstruction…the Diet devoted its energy to a no-confidence motion to oust Prime Minister…Naturally, the public was dismayed by this unproductive vendetta at a time when the nation was looking for substantial emergency measures…The government was slow in taking measures to prevent contamination of the nation's food supply… parents of children are also incensed that the government has not done more to deal with radiation affecting schoolyards while there are broader anxieties that many hot zones lay beyond the 20 km evacuation zone.

There were charges that the natural disaster showed the national government to be corrupt (Yamamura 2014). Immediately after the Great East Japan earthquake occurred, the national government could not provide citizens reliable information about the disaster although local governments could do to a certain extent (Tauchi 2015, 82). The local government of Fukushima did not receive information about the nuclear accident from the national government—and this hampered its ability to help its constituents (Tauchi 2015, 91). Without information from the national government, ordinary people had to rely upon themselves (Tauchi 2015, 97).

The government had a system for assessing where winds would carry radiation, but this information was not made public during the initial days after the meltdowns and subsequent explosions spewed radiation into the air. Consequently, many residents and evacuees were exposed to radioactive contamination since they were not given the information (New York Times, August 8, 2011). The effects of this lack of information led many Japanese people to disapprove of the government and politicians. According to Samuels (2013, 158), "In an August 2011survey, nearly 60

percent identified the central government as the least reliable source of information after a disaster --- up more than 22 percent from a survey taken before 3.11---and more than one-fifth identified prefectures and municipalities as the most reliable sources of disaster information."

The Japanese people seemed to distrust the central government and politicians after the disaster (Tauchi 2015, 97). Samuels (2013, 158) adds: "Post-3.11 dissatisfaction with the central government was palpable and widespread at the local level, and local officials were the immediate beneficiaries."

3 Data and Hypothesis

3.1 Data

Our data come from the East Asia Barometer data (Hereafter, EAB data) which has been collected by the Program for East Asia Democratic Studies (EADS) under the framework of the Research Institute at National Taiwan University. We use the second and third waves, conducted in 2005-2008 and 2010-2012. The EAB is based on national probability samples with face to face interviews. The samples were stratified or weighted with the aim of ensuring correct coverage of rural areas and minority populations. It has measures of trust in government and officials and is thus better suited for our analysis than the World Values Survey or the International Social Survey Program.

Our key concern is whether trust in government declined in Japan after the earthquake and tsunami. The second wave of EAB was conducted before the Great East Japan earthquakes for 18 countries. The third wave was conducted after the

disaster for seven countries.[5] The countries covered in both waves are Japan, Hong Kong, Mainland China, South Korea, Malaysia, Cambodia and Indonesia In Table 1 we present the composition of the samples. The sample sizes are 6,088 and 8,800 for the second and third waves, respectively.[6] In Table 2 we present the variables used in this paper, as well as their mean values and standard deviations. There are five different measures of political trust: Trust in national government, prime minister or president, political party, parliament, and local government. Their mean values are slightly larger than 2.5 on the four point scale. The higher the value, the more people trust.

We see substantial drops in trust for the national government, the Prime Minister, political parties, and parliament in Japan (see Table 3), but not for local governments. Nor do we see such precipitous declines in the other countries covered in the third wave. However, between 2004 and 2012, natural disasters

[5] EBA of the third wave has been conducted for 13 countries. However, among them, it has been done in 2010 which is prior to the disaster. So, countries where the survey has been conducted after the disaster reduced to 7. The timing of the survey was November 2011 (Japan), September-November 2012(Hong Kong), July-October 2011(Mainland Chian), May 2011(Korea) October-November 2011 (Malaysia), February-March 2012(Cambodia) and May 2011 (Indonesia).

[6] The original sample consisted of 22,288 observations for 7 countries by integrating the second and third waves of the EAB. However, data regarding the key variables were not available for all respondents. Hence, the sample size used in the estimation reduced. According to variations of response rate for the dependent variables, sample sizes differacross estimations. 1The sample size for trust in the national government is 4,888 in column (1) of Table 4.

frequently occurred in Indonesia. Hence, Indonesia is not considered as the appropriate non-damaged country. Then, we will examine whether sample of Indonesia changes the estimation results.

Trust Prime Minister is not available for Mainland China. Negative values indicate declines in political trust. With the exception of Japan, Hong Kong and Indonesia, we see small to considerable increases in political trust. This provides preliminary evidenced that disasters led to decreased political trust in Japan and Indonesia. However, large natural disasters occurred in Indonesia before and after the Japan earthquake. While we see a decline in political trust in Hong Kong, even as there was not a natural disaster there. The declines in *Trust National Government, Trust Prime Minister* and *Trust Political Parties* are considerably larger in Japan than in Hong Kong and Indonesia. For *Trust Parliament,* the declines are similar for Japan, Hong Kong and Indonesia. *Trust in Local Government* declined marginally in Hong Kong and Indonesia but increased in Japan. The degree of decrease in political trust is larger in Japan than Hong Kong and Indonesia. However, from Table 3, we cannot know whether reduction of Japanese people's political trust is statistically larger or smaller than other countries. Therefore, it is necessary to more closely examine it using the regression analysis in the following sections.

3.2 Method

We use the difference-in-difference method to compare the residents in Japan with the residents residing in other countries (Yamamura et al., 2015). The estimated function takes the following form:

$$Trust_{itc} = a_0 + a_1\, Post\ Disaster\ Dummy_{it} \times Damaged\ Dummy_{ic} + a_2\, Post\ Disaster\ Dummy_{it} + a_3\, Damaged\ Dummy_{ic} + X'_{itc} B + k_c + u_{itc},$$

where $Trust_{itc}$ represents the dependent variable in individual i, period t, and country c. k_c represents time-invariant country specific fixed effects, which captures unmeasured variables including weather, national culture, historical and institutional factors, among others. Country dummies are included as fixed effects. The regression parameters are denoted by a. X is the vector of the individual-level control variables, which capture the influence of the various respondents' individual characteristics, such as age, gender, residential area, income level, education level,and marital status. Its vector of the regression parameters is denoted as B. The error term is denoted by u.

The difference in difference (DID) model is used for the estimation with the aim of assessing the impact of the disaster (Angrist and Pischke 2009, 233-241). We investigate the differential effect of a treatment on a 'treatment group (the country the disaster hit)' versus a 'control group (the country the disaster did not hit)'. The method enables us to calculates the effect of a treatment (the disaster) on an outcome (by comparing) by comparing the average change over time in the outcome variable for the treatment group, compared to the average change over time for the control group. The Great East Japan earthquake and the resulting tsunami and the Fukushima nuclear accident are exogenous events and so endogeneity bias is unlikely to exist. Therefore, analyzing the effect of the Great East Japan earthquake by the DID method can be regarded as the natural experiment.

Post Disaster Dummy takes 1 when observations are collected after the disaster, otherwise 0. *Damaged Dummy* takes 1 when sample is gathered in Japan, otherwise

0. The interaction term between them (*Post Disaster Dummy* × *Damaged Dummy*) is a key variable for our estimation of the the disaster on political trust since it takes on the value of 1 only for Japanese respondents after the disaster. The coefficient of the interaction term will be negative if the disaster decreases political trust of Japanese respondents.

4. Results

Tables 4-7 report the estimates obtained from the DID method based on the Ordinary Least Square (OLS) estimation. In each table, the dependent variable is *Trust National Government, Trust Prime Minister, Trust Political Party, Trust Parliament,* and *Trust Local Government* in columns (1), (2), (3), (4), and (5), respectively. Table 4 presents the results based on the full-sample consisted of 7 countries. We noted that large natural disasters frequently hit Indonesia before and after the Japan disaster. Therefore, Indonesia cannot be appropriately treated as the 'control group' and so observations from Indonesia should be deleted from the sample. Hence, Table 5 show the results based on the sample of 6 countries, which does not include sample of Indonesia. The decline in political trust in Japan, Hong Kong and Indonesia. For a robustness check about the impact of the disaster, it is valuable of conducting examination using subsample of Japan and Hong Kong. Further, the nuclear accident jointly occurred in the Japan disaster whereas the accident did not occur in Indonesia. Estimation based on subsample of Japan and Indonesia provide the evidence about how the nuclear accident influenced the political trust.

We see from Table 4 that the key variable, *Post Disaster Dummy* × *Damaged Dummy,* produced negative signs and its effects are significant at the 1 % level in columns (1)-(4). The disaster reduced the trust in national government, prime

minister, political parties, and parliament. This is consistent with our prediction. The disaster reduced *Trust National Government* and *Trust Prime Minister* by 0.23 and 0.22 points respectively, on the 4 point scale in compared with other Asian countries. The disaster reduced *Trust Political Party* and *Trust Parliament* in Japan by 0.19 and 0.09 points in compared with other countries. The effects of the disaster on *Trust National Government, Trust Prime Minister* and *Trust Political Party* are over 2 times larger than that on *Trust Parliament*. We see from column (5) that *Post Disaster Dummy* × *Damaged Dummy* has apositive sign but is not tistically significant. As shown in Table 5, after excluding observations from Indonesia, the estimation results about *Post Disaster Dummy* × *Damaged Dummy* are almost the same as those in Table 4.

We now turn to Table 6. There are significant negative sing of the *Post Disaster Dummy* × *Damaged Dummy* for trust in the national government, trust in the Prime Minister, and trust in political parties—but not for trust in parliament and local government. The effect of the disaster on political trust in Japan is large when compared to Hong Kong. The coefficient of the *Post Disaster Dummy* × *Damaged Dummy* (Table 7) is negative (and significant) for trust in the national government, trust in the Prime Minister, and trust in political parties. The coefficient is positive for trust in parliament and local government and it is statistically significant for trust in local government. The nuclear accident led to lower levels of trust in national institutions. Local governments were strongly connected to the rescue effort, confidence in local institutions rose.

As a whole, the results of Table 5 -7 are similar to those in Table 4. Therefore, the Great East Japan earthquake reduce the political trust regardless of the control groups. This can be interpreted to the nuclear accident triggered by the

earthquake has the critical impact on political trust because the disaster in Indonesia were not accompanied with the nuclear accident. All in all, considering Tables 5-7 jointly suggests that the estimation results of Table 4 are robust. As is observed in previous works (e.g., Luechinger, & Saschkly2009; Yamamura et al. 2015), disasters influenced the subjective perception, which should be taken into account for analysis of impact of disaster on society.

4. Conclusion.

Trust in national political institutions fell in Japan following the earthquake and tsunami because the Japanese people felt that the government was not responsive to their needs. In 2014, 100,000 residents of the affected area remained dislocated. ¥3.28 trillion in funding for roads, bridges and thousands of new homes in areas devastated by the tsunami in Tohoku was unspent. More than ¥5.46 trillion in aid to local governments also remained in banks, as did ¥251 billion for Ishinomaki, where 3700 people died. Only 5 percent of homes have been rebuilt. And only 6% of municipal waste has been disposed of.

Eighty two percent of Japanese believe that the government could not help them in an emergency and 80 percent believe that the government has not told the truth. Two thirds say that relief was too slow. Sixty percent had little or no confidence in nuclear power plants. One survey found that trust in government in Japan was at a similar level as in Russia (Economist, 2012). Americans after Katrina were less critical of their government.

The government's poor record in rebuilding is responsible for declining trust. But so are the close ties between the Tokyo Electric Power Company (TEPCO) that

built and ran the reactors and the government. TEPCO falsified a 2002 report on safety tests and ignored early warnings that the plants could not withstand earthquakes. The Prime Minister hid a report about the possible evacuation of Tokyo. People saw this relationship as cozy and corrupt. When people see government as corrupt, it is not surprising that they have little confidence in the state. Local government officials did not have such close ties to the nuclear power industry.

Nor was there evidence that they hid crucial information from the public. So trust in local governments did not decline. In Japan, as in many other countries, people have more faith in local government than in the national government (Uslaner, 2001). They are closer to the local government and their evaluations are at least partially based upon the superior performance of local governments in emergencies. Skidmore and Toya (2013) found that countries with more decentralized governments have fewer disaster-induced fatalities. . The Great East Japan earthquake revealed that the inherited three layer model of center to prefecture to municipality did not operate. Localities had to organize to help each other[7]. The Great East Japan earthquake rekindled the debate over local government reform such as decentralization, local autonomy and regionalization (Samuels 2013, 177).

We have also shown that trust in government fell from the early years of the

[7] The local government of Fukushima could not receive the information about the nuclear accident from the national government. Malfunction of According to lack of the information about the accident, the local government in damaged area could not decide action in response to the accident (Tauchi 2015, 91).

21st century to 2012—a year after the disaster. For most other East Asian countries, trust either stayed the same or increased. Only in Hong Kong did trust decline and not nearly as strongly as in Japan. The nuclear disaster clearly led to a decline in trust in Japan and the failure of the government to resolve the crisis in the daily lives of people has kept confidence in leaders low.

Natural disasters provide stern tests for people's confidence in their political institutions. For people to have confidence in their leaders, the leaders must show that they are in charge and understand people's problems of rebuilding their lives. In 2010 wildfires destroyed more than 500,000 hectacres in Russia, the most ever. Even as half of the Russian population blamed government, they gave high marks to the relief effort. The federal government rebuilt homes for all villagers in a short period of time, regardless of the value of their own homes. Prime Minister Putin visited two villages. His own popularity stayed high and trust in government increased substantially in the affected areas (Lazarev et al, 2014.).

In Japan, national leaders were slow to respond—and were seen as complicit in making problems worse through their close ties to the nuclear industry. This led to charges of corruption—so poor performance together with perceptions of complicity with the nuclear industry led to sharp declines in political trust. The one governmental institution that did help with the recovery—and that was not complicit in making the problem worse (through ties to the nuclear industry) was local government.

Disasters do not always lead to a loss of confidence in government. When governmental institutions are seen as engaged and helpful, as in the Russian wildfires, confidence may even increase. But this is not the norm. The Japanese national government's weak response to the Great Earthquake is more typical—and

people's faith in their leaders seem destined to decline.

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Table 1. Composition of sample

Country	The second wave (2006-2008): Before the disaster.	The third wave (2011-2012): After the disaster.	The second and third wave
Japan	683	1,367	2,050
Hong Kong	623	884	1,507
Mainland China	494	2,041	2,535
Korea	992	1,038	2,030
Malaysia	1,046	1,091	2,137
Cambodia	823	1,069	1,892
Indonesia	1,427	1,310	1,892
Total	6,088	8,800	14,888

Note: The sample was used for the estimation when trust toward national government is dependent variable. Total sample size varied between 9,828 and 12,363 and according to specifications because data for dependent variables cannot be obtained for some observations. Questionnaire for Mainland China did not include the question about the degree of trust toward the prime minister. The sample size is 9,828 when trust toward president (or prime minister) is dependent variable. Sample size is almost 12,000 when other variables are dependent variable.

Table 2. Definition of key variables and its basic statistics

	Definition	Mean	Standard deviation
Trust National Government	The degree of trust in the national government: 1 (None at all) - 4 (A Great Deal of Trust)	2.70	0.88
Trust Prime Minister	The degree of trust in Prime Minister or president: 1 (None at all) - 4 (A Great Deal of Trust)	2.68	0.85
Trust Political Party	The degree of trust in Political parties: 1 (None at all) - 4 (A Great Deal of Trust)	2.50	0.94
Trust Parliament	The degree of trust in the parliament: 1 (None at all) - 4 (A Great Deal of Trust)	2.59	0.92
Trust Local Government	The degree of trust in the local government: 1 (None at all) - 4 (A Great Deal of Trust)	2.74	0.77
Damaged dummy	It takes 1 if the respondent lived in Japan (the damaged country), otherwise 0.	0.13	0.34
Post Disaster dummy	It takes 1 if the survey has been conducted after the Great East Japan Earthquake, otherwise 0.	0.58	0.49
Age	Ages	44.7	15.8
Male	It takes 1 if the respondent is male, otherwise 0.	0.50	0.50
Urban dummy	It takes 1 if the respondent lived in the urban area, otherwise 0.	0.58	0.49
Bottom income	It takes 1 if respondent's monthly household income belonged to the lowest quantile, , otherwise 0.	0.23	0.42

Low Income	It takes 1 if respondent's monthly household income belonged to the 2nd quantile, otherwise 0.	0.24	0.43
Middle Income	It takes 1 if respondent's monthly household income belonged to the 3nd quantile, otherwise 0.	0.22	0.41
High Income	It takes 1 if respondent's monthly household income belonged to the 4th quantile, otherwise 0.	0.18	0.38
Top Income	It takes 1 if respondent's monthly household income belonged to the top quantile, otherwise 0.	0.13	0.33

Table 3. Difference of mean value of trust between before and after the disaster.

(Value in the after the disaster – that in before the disaster)

	Trust National Government	*Trust National Prime Minister*	*Trust Political Party*	*Trust Parliament*	*Trust Local Government*
Japan	– 0.22	– 0.14	– 0.15	– 0.11	0.08
Hong Kong	– 0.14	– 0.07	0.05	– 0.13	– 0.01
Mainland	0.03	.	0.12	0.08	0.34
Korea	0.11	0.31	0.06	0.03	0.08
Malaysia	0.12	0.12	0.00	0.08	0.12
Cambodia	0.17	0.14	0.20	0.14	0.08
Indonesia	– 0.12	– 0.05	–0.01	– 0.11	– 0.04

Table 4. Regression results of DID method based on OLS estimation (Full sample)

	(1) *Trust National Government*	*(2)* *Trust Prime Minister*	*(3)* *Trust Political Party*	*(4)* *Trust Parliament*	*(5)* *Trust Local Government*
Damaged dummy ×	– 0.23***	– 0.22***	– 0.19***	– 0.09***	0.02
Post Disaster dummy	(–7.55)	(–6.88)	(–6.00)	(–3.07)	(0.76)
Damaged dummy	– 0.82***	– 0.86***	– 0.61***	– 0.82***	– 0.39***
	(–26.7)	(–26.9)	(–18.9)	(–25.6)	(–12.6)
Post Disaster dummy	0.02	0.07***	0.04***	0.0001	0.07***
	(1.09)	(5.20)	(3.36)	(0.01)	(5.50)
Age	0.002***	0.002***	0.002***	0.001	0.001
	(4.97)	(3.94)	(5.38)	(1.14)	(1.41)
Male	– 0.02**	– 0.04***	– 0.02*	– 0.02**	– 0.05***
	(–2.23)	(–3.31)	(–1.90)	(–2.16)	(–4.80)
Urban dummy	– 0.10***	– 0.08***	– 0.07***	– 0.10***	– 0.08***
	(–7.43)	(–4.91)	(–4.85)	(–7.03)	(–5.86)
Bottom income	<reference group>				
Low Income	– 0.05***	– 0.03*	– 0.05***	– 0.06***	– 0.06***
	(–3.20)	(–1.80)	(–3.15)	(–3.42)	(–3.73)
Middle Income	– 0.06***	– 0.05**	– 0.07***	– 0.08***	– 0.08***
	(–3.71)	(–2.53)	(–3.98)	(–4.67)	(–4.49)
High Income	– 0.09***	– 0.09***	– 0.10***	– 0.10***	– 0.07***
	(–4.54)	(–4.25)	(–5.09)	(–5.20)	(–3.86)
Top Income	– 0.09***	– 0.08***	– 0.14***	– 0.12***	– 0.06***
	(–4.33)	(–3.05)	(–6.13)	(–5.74)	(–2.87)
Constant	3.05***	3.11***	2.74***	3.30***	3.06***
	(68.9)	(67.2)	(56.2)	(65.7)	(69.6)

R-square	0.38	0.26	0.39	0.42	0.16
Observations	14,888	12,648	14,759	14,695	15,171

Note: Dummies for Education level, dummies for marital status and Country dummies are include, but its results are not reported. Values in parentheses are t-values calculated based on robust standard errors. *, **, and *** exhibit the statistical significance at the 10%, 5 %, and 1 % level, respectively.

Table 5. Regression results of DID method based on OLS estimation (Sub-sample excluding Indonesia)

	(1) *Trust National Government*	*(2)* *Trust Prime Minister*	*(3)* *Trust Political Party*	*(4)* *Trust Parliament*	*(5)* *Trust Local Government*
Damaged dummy ×	– 0.28***	– 0.28***	– 0.21***	– 0.14***	– 0.01
Post Disaster dummy	(–8.94)	(–8.42)	(–6.64)	(–4.53)	(–0.45)
Damaged dummy	– 0.80***	– 0.82***	– 0.62***	– 0.83***	– 0.37***
	(–25.1)	(–24.6)	(–18.8)	(–25.3)	(–11.7)
Post Disaster dummy	0.06***	0.14***	0.07***	0.04***	0.11***
	(4.08)	(7.61)	(4.63)	(3.10)	(7.28)
R-square	0.42	0.30	0.45	0.48	0.18
Observations	12,151	9,828	12,060	11,900	12,363

Note: Dummies for Education level, dummies for marital status and Country dummies are include, but its results are not reported. Values in parentheses are t-values calculated based on robust standard errors. *, **, and *** exhibit the statistical significance at the 10%, 5 %, and 1 % level, respectively.

Table 6. Regression results of DID method based on OLS estimation (Sub-sample of Japan and Hong Kong).

	(1) *Trust National Government*	*(2)* *Trust Prime Minister*	*(3)* *Trust Political Party*	*(4)* *Trust Parliament*	*(5)* *Trust Local Government*
Damaged dummy ×	– 0.09*	– 0.09*	– 0.22***	– 0.009	0.06
Post Disaster dummy	(–1.87)	(–1.99)	(–4.43)	(–0.18)	(1.27)
Damaged dummy	– 0.73***	– 0.63***	– 0.34***	– 0.70***	– 0.40***
	(–20.5)	(–18.7)	(–8.93)	(–18.7)	(–11.3)
Post Disaster dummy	–0.14***	–0.07*	0.07*	– 0.10***	0.01
	(–3.32)	(–1.73)	(1.80)	(–2.66)	(0.45)
R-square	0.29	0.23	0.15	0.24	0.08
Observations	3,557	3,650	3,462	3,530	3,662

Note: The set of independent variables are equivalent to that in Table 4, but its results are not reported. Values in parentheses are t-values calculated based on robust standard errors. *, **, and *** exhibit the statistical significance at the 10%, 5 %, and 1 % level, respectively.

Table 7. Regression results of DID method based on OLS estimation (Sub-sample of Japan and Indonesia).

	(1) *Trust National Government*	*(2)* *Trust Prime Minister*	*(3)* *Trust Political Party*	*(4)* *Trust Parliament*	*(5)* *Trust Local Government*
Damaged dummy ×	– 0.07*	– 0.07*	– 0.11***	0.04	0.15***
Post Disaster dummy	(–1.89)	(–1.93)	(–2.61)	(1.04)	(3.92)
Damaged dummy	– 0.55***	– 0.66***	– 0.27***	– 0.45***	– 0.34***
	(–16.0)	(–19.5)	(–7.17)	(–11.9)	(–9.47)
Post Disaster dummy	–0.14***	–0.06***	– 0.03	– 0.14***	– 0.05**
	(–5.26)	(–2.75)	(– 1.14)	(–5.00)	(–2.27)
R-square	0.23	0.24	0.12	0.18	0.06
Observations	4,787	4,946	4,788	4,866	4,917

Note: The set of independent variables are equivalent to that in Table 4, but its results are not reported. Values in parentheses are t-values calculated based on robust standard errors. *, **, and *** exhibit the statistical significance at the 10%, 5 %, and 1 % levels, respectively.