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Trust via disasters: the case of Chile's 2010 earthquake

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Chile has a long-standing history of natural disasters and, in particular, earthquakes. The latest big earthquake hit Chile on 27 February 2010 with a magnitude of 8.8 on the Richter scale. As an event that had a profound impact on significant portions of the population, the earthquake could theoretically have served to build trust by promoting new trust networks through the enhancement of distant family ties and the interaction between affected neighbours. This study offers an empirical analysis of this theory in the Chilean case. It finds that if initial social capital is very low (thus allowing for post-disaster looting and violence), then the impact of the trust-increasing effect is smaller. It also shows that the effect of the disaster was not transitory, but that it persisted and actually increased over time.

Keywords: Chile's 2010 earthquake, disaster, economics of disasters, resilience, sociology of disasters, subjective well-being, trust

The story of a disaster

Chile has a long-standing history of natural disasters, especially earthquakes. In fact, the largest recorded seismic event to date—an earthquake with a magnitude of 9.5 on the Richter scale—struck the country in 1960. Half a century later, on 27 February 2010, an earthquake with a magnitude of 8.8 hit Chile. Its epicentre was located offshore, 76.3 km (47.4 miles) below the seabed, which caused a tsunami that ravaged several coastal towns (CEPAL, 2010).

The impact of these events on the recent history of the country has been profound. In particular, a series of incidents in some of the areas that were most affected by the earthquake significantly influenced public opinion. In view of the fact that the city of Concepción, in Region VIII[1] had suddenly been cut off from the outside world,[2] looters stormed several small shops and supermarkets in search of food and supplies.

Yet what began as a frantic search for food rapidly degenerated into the stealing of non-essentials, such as televisions, radios, stereos and tools. The resulting feeling of general insecurity spread quickly among the population. Surprisingly, the looters came from diverse economic backgrounds, revealing a phenomenon that cut across socioeconomic strata and that was not attributable to marginalised sectors or the urban lumpenproletariat.

Estimates of the value of stolen goods range from $2.1 to $6.5 million (BioBio-Chile, 2010; Cooperativa, 2010). This looting gave rise to all sorts of speculations regarding the events and became the most critical political issue for the government

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at that time. People largely perceived the government as failing to take measures to restore law and order. Some responded to the feeling of insecurity by establishing neighbourhood watch groups throughout Concepción; given the lack of police resources, these groups sought to provide a measure of protection by patrolling their neighbourhoods.

Finally, 36 hours after the earthquake, the political authorities called for military intervention to control the looting and restore public order.

Looting and earthquakes

Although cases of looting, assault and theft after natural disasters are well documented, theoretical studies and empirical evidence show that antisocial behaviour in these circumstances is less common than is generally believed (Brunsma, Overfelt, and Picou, 2007; Douty, 1972; Fischer, 1998; Quarantelli and Dynes, 1977). Emotional factors account for the infrequency of looting after a disaster; altruism and reciprocity behaviours arise when family, friends and neighbours are at risk. Authors such as De Alessi (1967) argue, from a traditional economic perspective, that in situations of crisis companies tend to develop altruistic behaviours ('good will') as a means to maximise non-monetary prestige.

Furthermore, the literature shows that shock—the so-called 'disaster syndrome' characterised by states of disability, psychological impotence or light-headedness, as well as an inability to take care of oneself and others—does not seem to be widespread or long-lasting (Fischer, 1998; Quarantelli and Dynes, 1977). Moreover, contrary to popular belief, experience has shown that in contexts of crisis, volunteering and donations are abundant, while levels of panic are less significant (Aguirre et al., 1995; Merchant, Leigh and Lurie, 2010).

In the aftermath of 27 February 2010, people in most areas of Chile that were affected by the earthquake and tsunami behaved as expected: in an orderly and cooperative way, although sometimes in a deep state of shock and helplessness. Concepción was the only city in which people lost control, acted violently and engaged in extensive looting. The reasons behind this atypical behaviour remain unclear.

The chaos in Concepción led to a public perception that looting was a generalised occurrence. Yet a sober look at the statistics tells a different story. In the Metropolitan Area of Concepción,[3] 57 supermarkets, big department stores, factories, pharmacies, banks and service stations were looted. Of these incidents, 33 occurred in Concepción, 13 in San Pedro de la Paz, 6 in Talcahuano, 3 in Coronel and 2 in Hualpén. The data does not include information on the looting of small grocery and convenience stores.

Importantly, these events contrast with what happened following natural hazards elsewhere, such as Japan's earthquake and tsunami of Miyagi in 2011[4] and the Kobe earthquake in 1995, or the 2011 earthquake in Christchurch, New Zealand. None of these events were accompanied by the degree of pillaging and looting that shook Concepción in 2010.

Social capital and disasters

The World Values Survey reveals that Chile's social capital measurements for 1990–2009 are relatively low, namely in the lowest quintile (WVS, n.d.a; n.d.b; n.d.c).[5] This finding reflects data collected through surveys that asked respondents the following question: 'Generally speaking, would you say that it is possible to trust most people or, on the contrary, that we can never be too cautious in our dealings with other people?' Respondents could select one of two responses:

1. It is possible to trust most people.
2. We can never be too cautious in our dealings with other people.

In Chile in 2006, 12.6% opted for the first answer, thus ranking substantially below the world average (26.1%) and dramatically below that of countries such as the United States (39.3%) and Norway (74.2%) (WVS, n.d.c). The Latin American Public Opinion Project produced similar results for Chile in 2008 using the same question and alternative answers (LAPOP, n.d.).

Regarding institutional trust, the WVS figures show that Chile's levels are again below average (WVS, n.d.c). Noteworthy is the case of trust in the judiciary branch of government. Chile's value is one of the lowest of the sample of selected countries: only 4% report 'a great deal of confidence', compared to an average of 17% and 22% in Norway and Finland, respectively. Regarding levels of affiliation or participation in different types of organisations or groups, Chile's score is average; the percentage of respondents who said that they take part in religious, sports and educational organisations in Chile is the middle of the global distribution. One exception concerns the affiliation to trade unions and political parties, a category in which Chile ranks very low.

In the context of this study, these findings raise the question: 'Was the looting and pillaging in Chile related to the low levels of social capital in the country?' Theoretically, Chile's low levels of trust, networking, affiliation to associations and community participation should have some bearing on such behaviour. In fact, the concept of social capital assumes norms and regulations that permit the existence of a society; such norms and regulations are formalised in laws or embodied in spontaneous informal mechanisms, or customs.

For the purposes of this study, social capital can be seen as a public asset—an attribute of a community (Coleman, 1988) as opposed to an attribute of individuals (Bourdieu, 1986)—or as a collective asset resulting from the social consensus. Specifically, social capital is the capability to establish different types of organisations, be they formal or informal, that permit their participants to interrelate and collaborate on the basis of principles of mutual trust, reciprocity and cooperation (networking).

Greater levels of social capital increase both the opportunities to attain common objectives and the capability to confront crisis situations.[6] Success in attaining collective goals has to do with the ability to mobilise resources, which, to a large extent, depends on the style of leadership (Stein and Tommasi, 2006) and levels of affiliation

to associations present in a society. In turn, these factors affect levels of trust, reciprocity and cooperation. This means that high levels of social capital help to solve the problems of collective action and, consequently, the problem of freeriding (Coleman, 1990). In addition, as pointed out by Putnam (2000), social capital refers to links between persons—such as the social networks, reciprocity norms and trust that emerges between them—or 'civic virtue', which is much more powerful when inserted in a network of reciprocal social relations.

Consequently, social capital may be described as a set of people's approval and acknowledgement of others, which configures a network that may be more or less dense, flexible and resistant, and that is considered an asset for the individuals since it increases their opportunities for well-being. Thus, when North (1990) argues that formal and informal institutions ('rules of the game') are crucial for an improved economic performance, he ultimately points to their importance as assets. In ways that are similar yet not equivalent, Putnam (1993; 1995) and Fukuyama (1996; 2001) suggest that the denser the social fabric—that is, the range of the local associations in a society—the higher the levels of trust. As underscored in numerous studies, such trust strongly promotes improved governability and economic development.[7]

A significant amount of literature links social capital and disasters—natural or otherwise. Kaniasty and Norris (2009) offer an exhaustive review of the empirical literature on social reactions to disasters, with the goal of predicting which elements are convergent with respect to a community's reaction to them. The authors argue that the post-disaster effects follow a sequence whereby the initial appearance of solidarity leads to disappointment regarding the lack of resources. In other words, it is a process that shifts from a mobilisation of support to a deterioration of support (Kaniasty and Norris, 1999). In a similar vein, Kaniasty and Norris (2008; 2009) provide background information on the importance of social support—both real and perceived—in the reduction of the post-traumatic stress disorder.

Thus, trust and mistrust can be expected to follow a closed cycle. At first, individuals spontaneously provide assistance and promote cooperation to contribute to the effectiveness of the authorities. With time, however, these instincts give way to attitudes of mistrust and suspicion towards the authorities' ability to solve a community's most pressing problems.

On a related note, Collins (2004) suggests that traumatic events may affect a population's degree of solidarity for up to nine months. In assessing the impact of the massacre at Virginia Tech in 2007, Hawdon and Ryan (2012) point out that solidarity may last 5–13 months before behaviour returns to original levels, depending on the type of activity. They find that powerful collective rituals, such as communal mourning, boost social interaction and thus promote solidarity.

According to Tedeschi and Calhoun (1996), experiencing negative situations produces three types of positive results: changes in self-perception (emotional growth), changes in interpersonal relations (improvement in the relations with others) and changes in the philosophy of life (appreciation of one's personal life). Similarly, other studies show that there is a positive relation between the severity of a given event and

what has been called post-traumatic growth, referring to positive psychological changes in the face of subsequent adverse situations (McMillen, Smith and Fisher, 1997; Park, Cohen and Murch, 1996). Houlihan et al. (2008) have suggested that greater exposure of teenagers to certain natural disasters, such as hurricanes, does not reduce the levels of satisfaction with life, but rather increases them. A possible explanation of this might be that after such situations of stress, young people acquire a new vision of life and appreciate it even more.

Poulin et al. (2009) report similar effects after the events of 11 September 2001, particularly with reference to an increase in pro-social behaviour, religiosity and civic commitment. Likewise, Bellows and Miguel (2008) provide information on the positive effects on—or increase in—the levels of social capital and civic commitment among the population groups most affected by the brutal civil war in Sierra Leone.

In contrast, Saurí, Domingo and Romero et al. (2003) report that in the case of the toxic spill in Doñana, Andalucía, in 1998, the feelings of mistrust towards the authorities overcame the feelings of trust after the accident, in part because of the way in which the authorities dealt with this disaster. Zhang and Wang (2010) point out that the level of local political confidence after the Sichuan earthquake of 2008 was determined not only by the public's perception of the effectiveness of post-disaster measures, but also by their perception of the emotional and informative support provided by local authorities.

Haines et al. (1996) observe that the levels of social capital, particularly social networks, had a significant impact on the provision of help after Hurricane Andrew. Hurlbert et al. (2000) detect similar dynamics in the processes of preparedness and recovery after that hurricane. In connection with levels of prevention and preparedness to deal with disasters, Mimaki and Shaw (2007) argue that social capital is a key factor, given that it facilitates the formation of communal capabilities to recover from disasters. Zhao (2013) also points out that social capital is essential in the response and mitigation stages. Murphy (2007) contributes further evidence of the role of social capital in the processes of recovery after natural disasters, such as floods and power cuts. Aldrich (2008; 2011) focuses on the role played by some high-social-capital communities in the process of recovery after disasters.

In turn, by using some social capital proxies, Yamamura (2010) shows that higher levels of social capital reduce the damage resulting from natural disasters. In addition, through past experiences of disasters, people learn to be more receptive to cooperative behaviour and, consequently, the social capital that they have is more effective in the prevention of disasters.

Hommerich (2012) studies the effects of the Fukushima tsunami of 2011 by comparing two regions, one that was severely affected by the disaster and another that was not. The comparison reveals a difference in the levels of confidence among the young people affected by the disaster in both regions; it also points to a reduction of confidence in institutions, particularly among individuals who were most affected.

Jicha et al. (2011) show that social capital is crucial in increasing individual participation in processes of collective action immediately following a disaster. Specifically,

the authors conclude that the levels of associative practices, social networks, interpersonal confidence and reciprocity norms have an effect on participation in support activities after natural disasters, such as Hurricanes Ivan and Emily in the Caribbean.

Why was there looting in Concepción and not in Santiago? Some data related to social capital in Chile

According to the United States Geological Survey, the epicentre of the earthquake was about 3 km (1.9 miles) off the coast of the Pelluhue commune in the Maule Region. This point lies about 100 km (62 miles) away from the four nearest provincial capitals: Talca (to the north-east), Linares (to the east), Chillán (to the south-east) and Concepción (to the south). Farther north, the earthquake was felt in Chile's capital, Santiago, with the same Mercalli intensity (VII)[8] (CEPAL, 2010).

Yet looting occurred mainly in the city of Concepción. Populations in other locations responded to the disaster in a peaceful and cooperative way, including in Santiago, which is five times more populous than Concepción. What can account for such a marked difference? This section proposes an answer to the issue from a social capital perspective.

When interdependence between people is strong, it is easier to control freeriders, promote reciprocity and generate the trust that will facilitate subsequent joint actions (Coleman, 1990; Ostrom, 2000). The density of networks is associated with the levels of trust among a group of individuals. Thus, social capital may be likened to a 'public good'—with characteristics of indivisibility and non-rival consumption—unlike other forms of capital, such as physical, financial or human capital.[9]

Nevertheless, it may be hypothesized that antisocial practices that tend to impede affiliation, network construction and (formal and informal) normative attachments are diminished in contexts of external shocks such as disasters. In other words, even if the stock of social capital is low and insufficient to meet the challenges in normal times, individuals may group together at least momentarily in a time of crisis, for example to confront a lack of resources or threats such as pillaging. Thus, a community with a very low stock of social capital might initially engage in antisocial behaviour in a disaster situation, but their levels of trust and affiliation might increase as they address the needs arising from the shock of a natural disaster. Put simply, natural disasters might increase trust levels, at least in the short run.

The information available on social capital in Chile at the regional level is scarce. However, three studies are worth mentioning. The first is a study by Alarcón and Bosch (2003), who, on the basis of 1996 WVS data, examine the formation of social capital across four macro-zones in the country: north, centre-south, south and metropolitan. They find that the process differs based on geographic, economic and historical factors related to the development of settlements in each region. As Table 1 shows, the two regions in which Concepción and Santiago are located (Region VIII and the Metropolitan Region, respectively) exhibit significant differences in terms of education, employment and poverty.

Table 1 Socio-demographic characteristics of Region VIII and Metropolitan Region, 2009

Category	Percentage of population	
	Region VIII	Metropolitan Region
Education past age 15	9.9	11.2
Unemployment	12.6	10.1
Poverty	21.0	11.6
Extreme poverty	5.2	2.7

Source: MIDEPLAN (2009)

A second work that contributes to the regional analysis is by Espinoza and Rabi (2009). Drawing on the National Social Stratification Survey (Proyecto Desigualdades, 2009), they construct a series of regional indicators and typologies of networking and trust. Since their figures were gathered some months before the disaster, they can be understood as a baseline for later events. The authors draw three relevant conclusions based on the data. First, Region VIII, where Concepción is located, exhibits the second-highest levels of interpersonal distrust in the country; 55.1% of the respondents were distrustful or very distrustful, while only 19.5% were trustful or very trustful. Second, the region shows institutional distrust levels that are lower than the national average. Third, in variables such as interest in politics and commitment to the community, this region shows a performance ranging between rather low and medium.

In comparison, Region VII, which was also devastated by the earthquake but experienced neither looting nor violence, showed significantly higher levels of social capital: 42.4% of the population was distrustful or very distrustful, and 39.9% was trustful or very trustful. In the region of Santiago, 39.4% were distrustful or very distrustful of others, while 28.9% reported being trustful or very trustful. When interpersonal trust levels are broken down into different categories—trust in neighbours, the neighbourhood police or friends—the data corroborates that the province of Concepción enjoys lower levels of this kind of trust. As shown in Table 2, trust levels in Region VIII are especially low in the province of Concepción.

These findings confirm that the levels of social capital in Region VIII were below average and that even interpersonal trust levels were among the lowest in the country. Specifically, evidence shows that these levels are lower than those of other zones that were devastated by the earthquake but that did not witness looting or violence. Although affiliation density is somewhat uneven, this is only indicative of the formal social capital set-up and not of informal networks and levels of association, a decisive factor for the purposes of this study.

To complement the figures from the abovementioned surveys, the research team for this study measured levels of social capital in Concepción in the months that followed the disaster. This data was then compared with levels in the Metropolitan Region, where the earthquake had much less of an impact. Indeed, the percentage of

Table 2 Percentage of respondents who said people were 'almost always' or 'generally' trustworthy, by category of people in Region VIII and the Metropolitan Region, 2009

Category of people	Region VIII		Metropolitan Region	
	Province of Concepción	Other provinces	Province of Santiago	Other provinces
Neighbours (male)	27.6%	33.3%	33.5%	31.2%
Neighbours (female)	28.8%	36.2%	36.3%	33.8%
Neighbourhood police	46.4%	57.2%	53.1%	60.8%
Shop assistants where you do your shopping	25.0%	33.2%	30.9%	34.4%
Members of your family	66.7%	78.6%	74.5%	82.0%
Your friends	43.0%	61.2%	61.3%	55.1%
Your co-workers	28.4%	38.9%	39.1%	34.9%

Notes: Respondents were told: 'We are going to mention some persons in particular and we would like you to tell us if they are trustworthy.' They could select one of four possible answers: 1) they are almost always trustworthy; 2) they are generally trustworthy; 3) you have to be careful in your dealings with them; and 4) you can't trust them. Those who responded 'do not know' or who did not respond were excluded, as were the cases in which the question was not applicable, such as the co-worker question for respondents who were not employed. The percentages in the 'Your co-workers' category were thus calculated based on the number of workers who selected among the four abovementioned replies.

Source: Proyecto Desigualdades (2009)

homes damaged by the earthquake in Region VIII was 17.8%, whereas it was 4.8% in the Metropolitan Region. Even more dramatic is the fact that more than one-quarter (25.5%) of the poorest people in Region VIII were affected, whereas the figure lies around 6.5% in the Metropolitan Region. Moreover, in Region VIII 80.2% of primary and secondary schoolchildren were not able to start their school year as scheduled because their schools sustained serious damage, while only 9.1% of school-children the same age were affected in the Metropolitan Region. In addition, 23.9% of the population was affected by post-traumatic stress disorder in Region VIII, whereas only 6.5% were affected in the Metropolitan Region (Larrañaga and Herrera, 2011).[10]

The two regions also responded to the disaster in different ways. In the Metropolitan Region, 9.5% of respondents said that they had dealt with the difficulties in a collective way—through joint actions involving neighbours or people who were close by; in Region VIII, the proportion was much higher, at 36.9%. Although these figures seem to suggest that Region VIII addressed problems by drawing on available social capital, the response probably has more to do with the intensity of the earthquake and its effects. Furthermore, 55.9% of respondents in Region VIII and 46.5% of respondents in the Metropolitan Region said that they had dealt with the problems individually or with their families. These responses indicate that levels of trust did not extend beyond the family in either region.

So far, this paper has provided evidence showing that the low level of social capital in Region VIII and in the country in general might explain the looting and the incidents of violence that took place after the earthquake. However, another approach

may be taken. It has to do with whether a disaster like the one sustained by Chile might be an opportunity for the production of social capital. The survey carried out by the research team in Regions III and VIII—along with some complementary province-level data on damage to houses (Larrañaga and Herrera, 2011)—allows for an exploratory analysis of the potential production of social capital based on interaction among disaster victims.

Disaster as an instance for the production of social capital

The previous sections discuss social capital issues with a special emphasis on interpersonal trust, largely in an effort to explain varying reactions of the populations affected by the earthquake. Since the lack of sufficiently disaggregated behavioural data precludes a quantitative analysis of the looting, violence and cooperative behaviour observed in the disaster's aftermath, this study concentrates on qualitative reasoning to shed light on the linkages between trust and disasters.

Theoretically, an argument can be made that a catastrophic event such as the February 2010 earthquake could serve to promote new networks of trust by enhancing distant family ties and channels of support among neighbours. However, if looting takes place due to very low levels of social capital, there is no way to check whether this mechanism is at work, or whether the scale of the promotion of new networks of trust is significant. If the effect is present—and new networks of trust are created or reinforced—it is unclear whether it is transitory or whether the newly established networks can stand the test of time. This section explores these issues.

Data

This study utilises data about people's interpersonal trust levels, which was gathered during three different periods: a few months before the disaster, a few months after it and a year and a half later. Complementing this information is data about the extent of household damage in urban areas of Region VIII and the Metropolitan Region. Combined, the data allows for comparisons across the regions with respect to the earthquake's impact on interpersonal trust dynamics. The data is drawn from the following four data sources:

- The Social Capital Survey 2010, conducted by the Universidad del Desarrollo, covers men and women 18 and over residing in the main urban centres of Region VIII and the Metropolitan Region (Dussaillant and Guzmán, 2010). The survey is representative at the regional level; it considers a total of 1,621 interviews for Region VIII and 910 for the Metropolitan Region. Data was collected between May and July 2010.
- The Social Capital Survey 2012 was conducted by the Universidad del Desarrollo in December 2011 and January 2012 (Dussaillant and Guzmán, 2012). It is representative of the main province of Region VIII, Concepción, with 979 interviews, and of the entire Metropolitan Region, with 920 interviews.

- The National Social Stratification Survey was conducted a few months before the earthquake (Proyecto Desigualdades, 2009). It includes several measurements of interpersonal trust, such as trust among neighbours, in the neighbourhood police, and among friends. The survey is representative of the adult population at a regional level, with 6,153 individuals interviewed.
- The Encuesta Post Terremoto (post-earthquake survey) collected household information immediately after the disaster (Larrañaga and Herrera, 2011). It gathered data on 22,456 households between May and August 2010.

The data from the two Social Capital Surveys represents the main source of information for this study; the other two surveys serve as complements. As noted above, the first Social Capital Survey reflects the situation a few months after the disaster while the second asks the same questions one and a half years later.

The National Social Stratification Survey, which was conducted a few months before the earthquake, also contains data regarding social capital in the different regions of the country. This information is used to establish a baseline from which to make comparisons and examine the trajectories of trust in the short and medium term after the disaster.

Finally, the Encuesta Post Terremoto provides information about the proportion of damaged homes at the provincial level,[11] a key element of this analysis.

Analysis

This statistical analysis[12] has two components. First, a model was estimated using 2010 Social Capital Survey data and a probit regression,[13] where the dependent binary variable is assigned a value of 1 when respondents say that they trust most people.[14] The independent variables (controls) are sex, age, income and the level of education, each of which is coded and classified into groups. The number of damaged homes in the province is included as an independent variable that serves as a proxy for the magnitude of the needs of the population after the disaster. This latter variable is key to the analysis: measuring the impact of damage on interpersonal trust allows for an observation of the effect of the earthquake on social capital levels in the affected zones. The descriptive statistics of the data are presented in Annexe I.

The second component of the analysis involved accounting for possible differences in trust 'starting points'. These were calculated using another independent variable: the levels of trust prior to the earthquake in the respondents' area of residence, as provided by the 2009 National Social Stratification Survey. While the levels of trust are critical, these control figures should be used with caution since the data was derived from different questionnaires and a high level of aggregation was used to obtain reasonable error ranges.[15] As a result, Tables 3 and 4 present estimates of models that include and exclude this information.

As shown in Table 3, the model was estimated separately for Region VIII (models 1 and 2) and for the Metropolitan Region (models 3 and 4), as well as for the joint

Table 3 Results of probit regressions on trust, 2010 data

Variable		Marginal effects (standard errors in brackets)											
		Region VIII				Metropolitan Region				Both regions			
		Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Income† (reference: 0–250.000)	250,001–500,000	0.0799 (0.0298)	***	0.0742 (0.0328)	**	0.0255 (0.0132)	*	0.0245 (0.0136)	*	0.0583 (0.0251)	**	0.0552 (0.0257)	**
	500,001–1,000,000	0.1461 (0.0372)	***	0.1386 (0.0410)	***	0.1385 (0.0093)	***	0.1369 (0.0099)	***	0.1458 (0.0235)	***	0.1420 (0.0266)	***
	1,000,001–1,500,000	0.1540 (0.0669)	**	0.1494 (0.0652)	**	0.2219 (0.0063)	***	0.2190 (0.0092)	***	0.1827 (0.0474)	***	0.1809 (0.0468)	***
	1,500,001–2,000,000	0.1725 (0.0587)	***	0.1587 (0.0568)	***	0.1385 (0.0683)	**	0.1386 (0.0680)	**	0.1498 (0.0366)	***	0.1445 (0.0345)	***
	≥2,000,001	0.0744 (0.0710)		0.0616 (0.0651)		0.1278 (0.0696)	*	0.1249 (0.0691)	*	0.1223 (0.0654)	*	0.1207 (0.0662)	*
Women		0.0052 (0.0217)		0.0046 (0.0219)		-0.0373 (0.0218)	*	-0.0360 (0.0223)		-0.0102 (0.0160)		-0.0103 (0.0160)	
Age (reference: 18–24)	25–34	-0.1328 (0.0281)	***	-0.1282 (0.0317)	***	0.0105 (0.0027)	***	0.0105 (0.0028)	***	-0.0730 (0.0449)		-0.0707 (0.0448)	
	35–44	-0.1540 (0.0388)	***	-0.1537 (0.0378)	***	-0.0494 (0.0074)	***	-0.0503 (0.0085)	***	-0.1094 (0.0367)	***	-0.1099 (0.0366)	***
	45–54	-0.0544 (0.0459)		-0.0529 (0.0456)		0.0844 (0.0122)	***	0.0859 (0.0139)	***	-0.0021 (0.0469)		0.0020 (0.0473)	
	55–64	-0.0575 (0.0707)		-0.0592 (0.0672)		0.1142 (0.0169)	***	0.1159 (0.0156)	***	0.0062 (0.0703)		0.0043 (0.0697)	
	65–74	-0.1498 (0.0694)	**	-0.1514 (0.0698)	**	-0.0421 (0.0322)		-0.0410 (0.0322)		-0.1062 (0.0534)	**	-0.1070 (0.0554)	*
	≥75	-0.0315 (0.1270)		-0.0336 (0.1272)		0.3898 (0.1950)	**	0.4021 (0.1843)	**	0.1329 (0.1580)		0.1324 (0.1586)	
Education (reference: incomplete secondary education)	Full secondary education	0.0183 (0.0186)		0.0181 (0.0182)		0.1381 (0.0143)	***	0.1360 (0.0124)	***	0.0627 (0.0330)	*	0.0624 (0.0328)	*
	Incomplete university or technical	0.1164 (0.0544)	**	0.1099 (0.0569)	*	0.2136 (0.0172)	***	0.2122 (0.0156)	***	0.1549 (0.0421)	***	0.1492 (0.0437)	***
	Full technical education	-0.0102 (0.0053)	*	-0.0169 (0.0037)	***	0.1772 (0.0328)	***	0.1770 (0.0328)	***	0.0617 (0.0476)		0.0573 (0.0491)	
	Full university education	-0.0325 (0.0588)		-0.0424 (0.0642)		0.1044 (0.0654)		0.1024 (0.0633)		0.0054 (0.0382)		0.0028 (0.0413)	
Damaged homes in the province (%)		0.0068 (0.0027)	**	0.0079 (0.0047)	*	0.0003 (0.0031)		0.0191 (0.0075)	***	0.0052 (0.0017)	***	0.0048 (0.0022)	**
Pre-earthquake 'trust'		n/a		0.0136 (0.0121)		n/a		0.0287 (0.0088)	***	n/a		0.0108 (0.0105)	

Notes: *** p<0.01; ** p<0.05; * p<0.10.

† Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000 =$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

Source: authors.

sample (models 5 and 6).[16] Since the estimated coefficients of a probit model are difficult to interpret in the table, the marginal effects are provided instead. They can be read as follows:

- When variable X is binary, the marginal effects reported in the table show, other things being equal, how much the probability of being trustful changes if X is in a certain category rather than in the reference category. For example, the reported effect on the variable 'women' reveals how women are more (or less) trustful than men.
- When variable X is continuous, the marginal effects show, other things being equal, how much the probability of being trustful changes if variable X increases by one unit. For example, the reported marginal effect on the variable 'percentage of damaged homes in the province' ('damage') reveals how much the probability of being trustful increases when 'damage' increases by one point.

As shown in Table 3 for the lower-income categories, the probability of being trustful increases with income. Nevertheless, the tendency is reversed when income exceeds $2 million pesos (about $100,000 in 2011). The results can be observed in every model of the table. In turn, education levels follow a similar pattern, whereby individuals with intermediate education levels (incomplete university or technical school) show the highest levels of interpersonal trust. Sex does not seem to be a determinant variable.

Age also shows non-linear patterns of trust. In Region VIII (models 1 and 2) the most trustful group appears to be 18–24-year-olds; this group is the reference group, and belonging to any of the other age categories implies a negative—although not always significant—impact. In models 3 to 6 of the table, age effects on trust seem to follow less of a pattern.

The most interesting results of this exercise are those related to the effect of 'damage'. The provinces with higher damage rates show levels of trust that, other things being equal, are higher. For example, model 6, which includes all the data and all the variables, shows that an extra percentage point of 'damage' results in an increase in the probability of being trustful of 0.0048 (see Table 3). People from a zone with 17% 'damage' are 8 percentage points more likely to be trustful than people from places that did not sustain any damage.

This difference is likely to be the result of the differential impact of the disaster, since several standard controls were included and pre-earthquake trust differences were also accounted for. Although the effect is significant in Region VIII and in the Metropolitan Region, both the magnitude and significance are higher in the latter. On average, based on estimates for the full sample, every percentage point of increase in 'damage' produced by the earthquake is translated into between 0.5 and 0.8 percentage points of the probability of being trustful.

The fact that Region VIII and the Metropolitan Region display a different marginal effect of the 'damage' on the probability of being trustful suggests that post-disaster

increases in levels of trust are path-dependent. This means that any increases in levels of trust in the wake of a disaster are driven—at least in part—by pre-disaster levels of trust. Therefore, regions that exhibited higher levels of trust prior to a disaster—in this case, the Metropolitan Region—see greater increases in levels of trust after a disaster, while regions that were characterised by relatively low levels of trust—such as Region VIII—see smaller increases in levels of social trust. The coefficients on the 'damage' variable are consistent with this hypothesis.

This analysis can be complemented by an examination of the effects of pre-earthquake trust levels on current trust. The 'pre-earthquake trust' coefficient is small and not significant in Region VIII, which had lower pre-disaster trust levels (see Table 3, model 2). In contrast, the 'pre-earthquake trust' coefficient is highly significant in the Metropolitan Region (see Table 3, model 4). This might mean that higher trust levels are also more persistent. The Metropolitan Region not only has a larger, but also a *stronger* baseline, meaning that a 'trust begets trust' path is more probable there; if the behavioural model is stable, improvements can be expected to persist. Lower trust zones, as found in Region VIII, are not on that path and, over time, any improvements in trust due to the disaster might dissolve more readily.

These results can be interpreted as evidence that disasters promote the construction of social capital. In the case of Chile, this effect was observed particularly in areas that were moderately affected by the earthquake. Interpersonal trust does not appear to have grown in the most intensely affected areas, as evidenced by episodes of violence and looting in these areas. However, people in other areas affected by the earthquake seized the opportunity to interact in a constructive fashion, creating support networks that did not exist before. This growth in mutual support may have resulted in an increase in the prevailing levels of interpersonal trust in those areas. This study has also demonstrated that initial levels of trust are essential. The 'trust begets trust' dynamic only emerges in the wake of a disaster if the social capital baseline is sufficient.

The next step in the analysis was to assess whether the increase in trust in the most damaged sectors was transitory or permanent. The effects presented in Table 3 are either transitory—that is, they will decrease and eventually vanish—or they will persist over time. If the effects are persistent, the question emerges as to whether the entire effect was obtained in the short term, and was not to be exceeded, or whether a *trust-building process* was ushered in by the disaster. If the latter applies, then it may be possible to observe sustained increases in trust over time.

Although definitive answers to these questions remain elusive, largely because too little time has passed since the disaster, it is possible to determine whether the increase in trust was still observable almost two years after the earthquake. The data collected from December 2011 to January 2012 sheds some light in this issue. Like the 2010 data, it covers the Metropolitan Region, yet it only incorporates the main province of Region VIII.

Table 4 presents the results of the estimates of different models on the whole new sample.[17] The statistical specification chosen is the same as before: a probit model

where the dependent variable takes the value of 1 when respondents say that they trust most people. The table only shows the marginal effects that are relevant to this study, since the coefficients for the rest of the controls are similar to the ones shown in Table 3.

The analysis controls for previous trust at the province level. Models 1 through 4 in Table 4 only differ in how the baseline is taken into account. Model 1 does not include a control for previous trust levels, model 2 controls for 'pre-earthquake trust' only, model 3 controls for the 'post-earthquake 2010 trust' level (obtained from the 2010 survey), and model 4 controls for both. These different specifications are included to test the robustness of the results, especially since, as noted above, the baseline measures are not suitably detailed and must thus be used with caution. Models 5 and 6 are the same models 5 and 6 from Table 3, the only difference being that Table 4 estimates of these models use a restricted sample that only includes the areas that were subsequently measured in December 2011–January 2012. This was done so as to ensure comparability among all the six models of Table 4.

Table 4 reveals that the percentage of damaged homes in the province significantly predicts the trust level in it. The effects of 2012 are greater than those observed in 2010, just after the earthquake. For example, model 2 in the table indicates that a 1% increase in 'damage' resulted in a 1.13-point increase in the probability of being trustful. This means that someone from a zone where 'damage' reached 20% has a probability of being trustful that is roughly 23 percentage points higher than that of someone in a undamaged zone. Again, this difference is probably due to the differential impact of the disaster, since several standard controls were included and pre-earthquake trust differences were accounted for. This effect is much higher than what was observed in 2010, just after the earthquake. Model 6 in Table 4 shows that then, a 1% increase in 'damage' resulted in only a 0.26-point increase in the probability of being trustful. This means that in 2010 someone from a zone where 'damage' reached 20% had a probability of being trustful that was 5.2 percentage

Table 4 Results of probit regressions on trust, short- and medium-term effects

Variable	Marginal effects (standard errors in brackets)					
	Social Capital Survey 2012				Social Capital Survey 2010 (restricted to 2012 areas)	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Damaged homes in the province (%)	0.0054*** (0.0007)	0,0113*** (0.0026)	0.0117** (0.0046)	0.0051*** (0.0003)	0.0054*** (0.0002)	0.0026** (0.0013)
2010 post-earthquake 'trust' controls	No	No	Yes	Yes	No	No
2009 pre-earthquake 'trust' controls	No	Yes	No	Yes	No	Yes

Notes: *** p<0.01; ** p<0.05; * p<0.1. The controls are the same as appear in Table 3; coefficients are not reported.

Source: authors.

points higher than that of someone in an undamaged zone. Although still important, the latter effect is substantively smaller than the one estimated for December 2011–January 2012.

Therefore, the effects increase with time. These results are (qualitatively) robust to the choice of baseline controls. They are noteworthy in that they show that the trust-building effect of disasters—or at least of the Chilean 2010 earthquake—has a snowball effect: the networks of trust start strengthening and broadening their scope in the short term which, in turn, may engender a broader trust-building process.

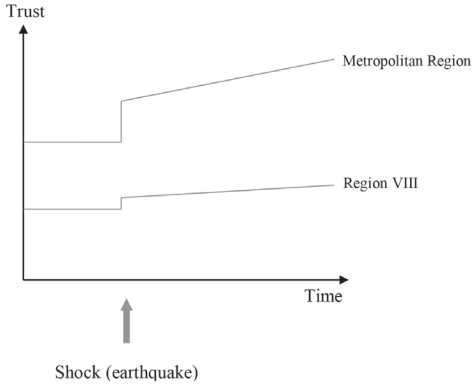
Conclusion

Chile is a country with low levels of social capital; however, these levels vary significantly across the country. The sector that sustained the most damage from the earthquake of February 2010 was Region VIII, which is among the regions with the least social capital. This combination of factors may explain why looting and violence, which rarely occur in such circumstances, emerged as the main problem in the region just after the earthquake. Although this study has not directly tested this hypothesis, it supplies evidence that the disaster brought about path-dependent processes related to social capital and trust. This means that places where initial social capital is low, such as Region VIII, are less likely to experience a trust-building process following an earthquake.

As suggested by Dynes (2002), under normal circumstances residents have few obligations and roles, and their expectations are not put to the test. Disasters bring to light unforeseen issues that put people's lives at risk while also providing the opportunity to further identify with the community.

In this sense, a disaster situation is an opportunity to strengthen the levels of interpersonal trust, which ultimately affect social capital. These processes do not appear to be transitory; instead, they persist until at least the medium term, as trust keeps increasing. The disaster engenders a trust-building process, which is more effective and stronger if the initial level of trust is high at the moment of the event. The low initial trust levels in Region VIII explain the weakness of the region's trust-building process. They also facilitated the unruly behaviour that occurred in that region in the days immediately after the disaster.

Figure 1 Stylised summary of observations



Source: authors.

Figure 1 is a stylised summary of the observations made in this paper. It shows two trajectories in time. The one with the lower trust levels represents Region VIII while the one with higher levels can be thought of as the Metropolitan Region. The disaster triggered a trust-building process in both regions. The initial increase in trust was higher in the

Metropolitan Region, as it had the more favourable baseline. The trust-building process unleashed by the disaster was thus stronger in the Metropolitan Region than in Region VIII. It is also worth mentioning that trust levels in Region VIII show almost no dependency on previous trust levels, meaning that the local trust-building process is not only less steep, but also less widespread than in the Metropolitan Region. This weakness indicates that the trust-building process in Region VIII may soon dissipate.

Annexe 1: descriptive statistics

Table A1 Social Capital Survey 2010: both regions

Variable		Both regions (Region VIII and Metropolitan Region)				
		N	Mean	Standard deviation	Min.	Max.
Trust		2,531	0.3777	0.4849	0	1
Income†	0–250,000	2,531	0.3279	0.4696	0	1
	250,001–500,000	2,531	0.4018	0.4904	0	1
	500,001–1,000,000	2,531	0.2130	0.4095	0	1
	1,000,001–1,500,000	2,531	0.0324	0.1771	0	1
	1,500,001–2,000,000	2,531	0.0170	0.1293	0	1
	≥2,000,001	2,531	0.0079	0.0886	0	1
Women		2,531	0.5132	0.4999	0	1
Age	18–24	2,531	0.2280	0.4196	0	1
	25–34	2,531	0.1908	0.3930	0	1
	35–44	2,531	0.1829	0.3867	0	1
	45–54	2,531	0.2007	0.4006	0	1
	55–64	2,531	0.1280	0.3342	0	1
	65–74	2,531	0.0553	0.2286	0	1
	≥75	2,531	0.0142	0.1184	0	1
Education	Incomplete secondary education	2,485	0.2612	0.4394	0	1
	Full secondary education	2,485	0.3304	0.4704	0	1
	Incomplete university or technical education	2,485	0.2028	0.4022	0	1
	Full technical education	2,485	0.1006	0.3009	0	1
	Full university education	2,485	0.1050	0.3067	0	1
Damaged homes in the province (%)		2,531	13.0697	7.4908	3.7	25.3

† Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000=$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

Table A2 Social Capital Survey 2010: Region VIII

Variable		Region VIII				
		N	Mean	Standard deviation	Min.	Max.
Trust		1,621	0.4016	0.4904	0	1
Income†	0–250,000	1,621	0.3510	0.4774	0	1
	250,001–500,000	1,621	0.3831	0.4863	0	1
	500,001–1,000,000	1,621	0.2141	0.4103	0	1
	1,000,001–1,500,000	1,621	0.0321	0.1763	0	1
	1,500,001–2,000,000	1,621	0.0142	0.1183	0	1
	≥2,000,001	1,621	0.0056	0.0743	0	1
Women		1,621	0.5083	0.5001	0	1
Age	18–24	1,621	0.1795	0.3839	0	1
	25–34	1,621	0.1795	0.3839	0	1
	35–44	1,621	0.1820	0.3860	0	1
	45–54	1,621	0.2091	0.4068	0	1
	55–64	1,621	0.1413	0.3484	0	1
	65–74	1,621	0.0531	0.2242	0	1
	≥75	1,621	0.0142	0.1183	0	1
Education	Incomplete secondary education	1,578	0.2706	0.4444	0	1
	Full secondary education	1,578	0.2915	0.4546	0	1
	Incomplete university or technical education	1,578	0.2205	0.4147	0	1
	Full technical education	1,578	0.0925	0.2899	0	1
	Full university education	1,578	0.1248	0.3306	0	1
Damaged homes in the province (%)		1,621	18.2112	3.7250	13.1	25.3

† Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000=$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

Table A3 Social Capital Survey 2010: Metropolitan Region

Variable		Metropolitan Region				
		N	Mean	Standard deviation	Min.	Max.
Trust		910	0.3352	0.4723	0	1
Income†	0–250,000	910	0.2868	0.4525	0	1
	250,001–500,000	910	0.4352	0.4961	0	1
	500,001–1,000,000	910	0.2110	0.4082	0	1
	1,000,001–1,500,000	910	0.0330	0.1786	0	1
	1,500,001–2,000,000	910	0.0220	0.1467	0	1
	≥2,000,001	910	0.0121	0.1093	0	1

Variable		Metropolitan Region				
		N	Mean	Standard deviation	Min.	Max.
Women		910	0.5220	0.4998	0	1
Age	18–24	910	0.2110	0.4082	0	1
	25–34	910	0.2110	0.4082	0	1
	35–44	910	0.1846	0.3882	0	1
	45–54	910	0.1857	0.3891	0	1
	55–64	910	0.1044	0.3059	0	1
	65–74	910	0.0593	0.2364	0	1
	≥75	910	0.0143	0.1187	0	1
Education	Incomplete secondary education	907	0.2448	0.4302	0	1
	Full secondary education	907	0.3980	0.4898	0	1
	Incomplete university or technical education	907	0.1720	0.3776	0	1
	Full technical education	907	0.1147	0.3188	0	1
	Full university education	907	0.0706	0.2562	0	1
Damaged homes in the province (%)		910	3.9112	0.5784	3.7	6.8

† Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000=$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

Table A4 Social Capital Survey 2012: both regions

Variable		Both regions (Region VIII and Metropolitan Region)				
		N	Mean	Standard deviation	Min.	Max.
Trust		1,899	0.3639	0.4812	0	1
Income†	0–250,000	1,790	0.1480	0.3552	0	1
	250,001–500,000	1,790	0.2972	0.4572	0	1
	500,001–1,000,000	1,790	0.3615	0.4806	0	1
	1,000,001–1,500,000	1,790	0.0967	0.2956	0	1
	1,500,001–2,000,000	1,790	0.0425	0.2017	0	1
	≥2,000,001	1,790	0.0542	0.2265	0	1
Women		1,899	0.5182	0.4998	0	1
Age	18–24	1,888	0.2728	0.4455	0	1
	25–34	1,888	0.2034	0.4026	0	1
	35–44	1,888	0.1631	0.3696	0	1
	45–54	1,888	0.1679	0.3739	0	1
	55–64	1,888	0.1075	0.3099	0	1
	65–74	1,888	0.0588	0.2352	0	1
	≥75	1,888	0.0265	0.1606	0	1

Variable		Both regions (Region VIII and Metropolitan Region)				
		N	Mean	Standard deviation	Min.	Max.
Education	Incomplete secondary education	1,877	0.1630	0.3695	0	0
	Full secondary education	1,877	0.2440	0.4296	0	1
	Incomplete university or technical education	1,877	0.3053	0.4607	0	1
	Full technical education	1,877	0.1396	0.3466	0	1
	Full university education	1,877	0.1481	0.3553	0	1
Damaged homes in the province (%)		1,899	10.9421	6.7839	3.7	17.5

† Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000=$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

Table A5 Social Capital Survey 2012: Region VIII

Variable		Region VIII				
		N	Mean	Standard deviation	Min.	Max.
Trust		979	0.4157	0.4931	0	1
Income†	0–250,000	870	0.0954	0.2939	0	1
	250,001–500,000	870	0.2575	0.4375	0	1
	500,001–1,000,000	870	0.4092	0.4920	0	1
	1,000,001–1,500,000	870	0.1264	0.3325	0	1
	1,500,001–2,000,000	870	0.0494	0.2169	0	1
	≥2,000,001	870	0.0621	0.2414	0	1
Women		979	0.5128	0.5001	0	1
Age	18–24	976	0.3842	0.4867	0	1
	25–34	976	0.2059	0.4046	0	1
	35–44	976	0.1404	0.3475	0	1
	45–54	976	0.1373	0.3443	0	1
	55–64	976	0.0820	0.2745	0	1
	65–74	976	0.0359	0.1860	0	1
	≥75	976	0.0143	0.1190	0	1
Education	Incomplete secondary education	973	0.0750	0.2636	0	1
	Full secondary education	973	0.1891	0.3918	0	1
	Incomplete university or technical education	973	0.4265	0.4948	0	1
	Full technical education	973	0.1213	0.3266	0	1
	Full university education	973	0.1881	0.3910	0	1
Damaged homes in the province (%)		979	17.5	0	17.5	17.5

† Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000=$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

Table A6 Social Capital Survey 2012: Metropolitan Region

Variable		Metropolitan Region				
		N	Mean	Standard deviation	Min.	Max.
Trust		920	0.3087	0.4622	0	1
Income[†]	0–250,000	920	0.1978	0.3986	0	1
	250,001–500,000	920	0.3348	0.4721	0	1
	500,001–1,000,000	920	0.3163	0.4653	0	1
	1,000,001–1,500,000	920	0.0685	0.2527	0	1
	1,500,001–2,000,000	920	0.0359	0.1861	0	1
	≥2,000,001	920	0.0467	0.2112	0	1
Women		920	0.5240	0.4997	0	1
Age	18–24	912	0.1535	0.3607	0	1
	25–34	912	0.2007	0.4007	0	1
	35–44	912	0.1875	0.3905	0	1
	45–54	912	0.2007	0.4007	0	1
	55–64	912	0.1349	0.3418	0	1
	65–74	912	0.0833	0.2766	0	1
	≥75	912	0.0395	0.1948	0	1
Education	Incomplete secondary education	904	0.2577	0.4376	0	1
	Full secondary education	904	0.3031	0.4599	0	1
	Incomplete university or technical education	904	0.1748	0.3800	0	1
	Full technical education	904	0.1593	0.3662	0	1
	Full university education	904	0.1051	0.3068	0	1
Damaged homes in the province (%)		920	3.9637	0.6950	3.7	6.8

[†] Income categories are provided in Chilean pesos. Using the average June 2010 exchange rate, 538 pesos=$1, such that 0–250,000 pesos=$0–$465; 250,001–500,000 pesos=$466–$929; 500,001–1,000,000=$930–$1,859; 1,000,001–1,500,000=$1,860–$2,788; 1,500,001–2,000,000=$2,789–$3,717; ≥2,000,001=≥$3,718.

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Endnotes

[1] Chile is divided into 15 political-administrative regions, which are divided into provinces. The provinces are made up of communes.

[2] Much of the telecommunications network was suspended due to the over-saturation of the systems and the earthquake's impact on the transmission plants. Several sectors of the road network were also cut off or significantly damaged, which consequently affected traffic flow (CEPAL, 2010).

[3] The Metropolitan Area of Concepción includes the municipal districts of Chiguayante, Concepción, Coronel, Hualpén, Hualqui, Lota, Penco, San Pedro de la Paz, Talcahuano and Tomé.

[4] About 250 robberies were reported in Miyagi in the ten days following the disaster; however, these were minor in scale and amounted to only about $120,000, or an average of $500 per theft (Allen, 2011).

[5] The World Values Survey is among the most complete databases on values available at present.

[6] The goal of social capital, as developed by Bourdieu (1986), Coleman (1988) and Putnam (1993), has to do with encouraging and strengthening relations between the three sectors of society, namely the state, enterprises and not-for-profit organisations—such as non-governmental organisations, foundations and family units—with the aim of attaining synergy and governability.

[7] See Bjørnskov (2006; 2007); Knack and Keefer (1997); Narayan (1995); Oguzhan and Uslaner (2010); Woolcock and Narayan (2000); Zak and Knack (2001).

[8] On the Modified Mercalli Intensity Scale, a VII indicates that damage was 'negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable [. . .] in poorly built or badly designed structures' (USGS, n.d.).

[9] Among others, Arrow (2000), Fine (2001) and Fine and Lapavitsas (2004) point out that social capital is not comparable to that of capital as it lacks its central characteristics. However, if individuals, groups and communities can be said to manage intangible resources—which are 'capital' in that they are assets whose 'use' allows the attainment of better results than their absence (Coleman, 1990)—or to constitute the competence to create other forms of competence, then 'human capital' is perfectly comparable to 'capital'.

[10] In addition to being hit by the earthquake itself, Region VIII witnessed daily aftershocks for about three months and subsequent aftershocks for almost eight months.

[11] Region VIII has four provinces while the Metropolitan Region has six.

[12] For this study, several analyses were performed using different model specifications (linear continuous, ordinal and binary), with similar results. This is in line with Hou and Wu (2009), who model trust as ordinal, categorical and binary and show that the difference between the models is almost nil. For this study, probit results are reported since they provide a more intuitive interpretation. Estimates using alternative models are available from the authors upon request.

[13] See, for example, Long (1997).

[14] The variable was constructed based on the question: 'On a scale from 1 to 5, where 5 corresponds to "I trust most people" and 1 to "I trust nobody", how much do you trust people?' A value of 1 was assigned to respondents who responded with a 4 or a 5. This approach is standard in the trust literature; see, for example, the seminal papers from Alesina and La Ferrara (2000; 2002).

[15] The baseline data is aggregated into two large groups by region: the Province of Santiago and 'the rest of the Metropolitan Region' and the Province of Concepción and 'the rest of Region VIII'.

[16] Odd-numbered models do not control for pre-earthquake trust levels while even-numbered models do.

[17] It is not possible to analyse Region VIII independently since the main variables are at the province level and there is only one province in the sample. Although the whole sample analysis can be done for the Metropolitan Region, it would not shed any additional light on the issues under study. Nevertheless, such analyses are available from the authors on request.

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