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# Assessing disaster capitalism in post-disaster processes in Chile: neoliberal reforms and the role of the corporate class

Assessing  
disaster  
capitalism

831

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## Abstract

**Purpose** – This paper examines disaster capitalism in Chile, that is, the relationships between disasters and neoliberalism. It looks at two post-disaster dimensions: disasters as windows of opportunity to introduce political reforms and disasters as occasions for the corporate class to capitalize on such disasters.

**Design/methodology/approach** – Two indices, disaster capitalism (DC) and post-disaster private involvement (PDPI), are proposed for cross-case analysis. They are based on legal records, institutional reports and economic data. The DC assesses the introduction of reforms following disasters, while PDPI evaluates the share of public-private funding used for recovery. Both indices are applied here to two disasters in Chile: the 2010 Maule earthquake, and the 2008 Chaitén volcanic eruption.

**Findings** – Results show that the highly neoliberal Chilean context leaves limited space for new neoliberal reforms. Although recovery is implemented predominantly through the private sector, the state still assumes greater responsibility for recovery costs. Results also detect poor levels of participation from the private sector in accounting their efforts and making them publicly available. Likewise, the research suggests that neoliberal reforms become more likely after disasters. However, the preexisting politico-economic context matters. Finally, there is clearly a need for data systematization in post-disaster recovery.

**Originality/value** – In the Chilean context, the indices proved beneficial as a strategy for data collection and a method for scrutinizing the implications of neoliberal policy implemented in the wake of disasters, as well as in evaluating the role of the corporate class during recovery.

**Keywords** Disaster capitalism, Neoliberalism, Post-disaster, Corporate class, Chile, Index, Policy change

**Paper type** Research paper

## A need for systemic examination of neoliberal practices in disasters

Naomi Klein proposed the concept of *disaster capitalism* in 2008 to describe what she identified as “orchestrated raids on the public sphere in the wake of catastrophic events, combined with the treatment of disasters as exciting market opportunities” (Klein, 2008, p. 6). The concept emerged as the global expansion of capitalism, and neoliberalism, in particular, became increasingly consolidated – a process which had been accelerating since the dismantling of the Soviet Union in the 1990s – and also as the frequency and severity of disasters worldwide increased. Since then, several scholars have embarked on research to explore different dimensions of post-disaster processes: disasters as *windows of opportunity* to introduce political reforms, and disasters as occasions for the corporate class to capitalize on such disaster.



Although the relationship between disasters and neoliberalism has received increasing attention in the last two decades, the need for a systematic account of neoliberal practices enacted during post-disaster processes remains; this would then serve as a more accurate assessment of the positive and negative effects of these practices. Therefore, this study adopts a methodological approach based on legal records, institutional reports and economic data. This approach seeks to enable cross-case analyses and comparison between different disaster processes, thus making it possible to observe and chart expansions and contractions in disaster capitalism over time and to compare different disasters in the context of Chile. It is worth noting that Chile is used here for two key reasons: firstly, because it has a favorable digital environment for accessing data. Secondly, because it experienced important neoliberal reforms after the *coup d'état* by the dictator Augusto Pinochet in 1973 which are still in place today: namely, privatization of key public services such as education, health, pension and housing (Solimano, 2012).

With this methodological approach in mind, the present paper proposes two indices: The disaster capitalism (DC) index, to assess the introduction of neoliberal reforms following disasters, and the post-disaster private involvement (PDPi) index, to assess the role of the corporate class in post-disaster phases. Both indicators will be explained in greater detail in the methodology section. Before going any further, the next section addresses the departure point and positionality of this research.

### **Disaster capitalism: where neoliberalism meets disaster**

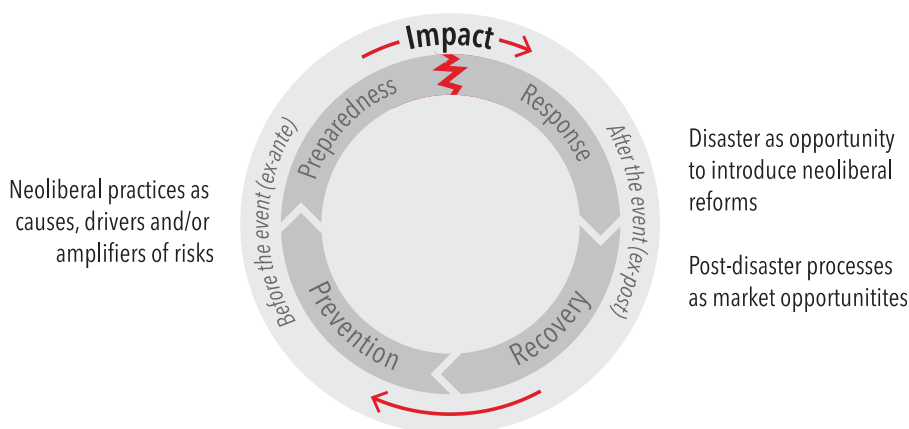
The departing theoretical framework is grounded in historical materialism to interpret how society's productive and technological capacity, along with the social relations of production, together fundamentally influences its social, economic and political organization and development (van Loon, 2019). From this perspective, neoliberalism is approached as the latest form of capitalism and is regarded as "a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills" (Harvey, 2005, p. 4). Thus, neoliberal reforms are those policies carried out by governments which aim to establish "an institutional framework characterized by strong private property rights, free markets and free trade" (Harvey, 2005, p. 2). The research also adopts a social constructionist approach to disaster and risk grounded in the pressure and release (PAR) model (Wisner *et al.*, 2004). In terms of structural paradigm, this means that disaster and risk are better understood as social constructs, socially produced by socio-economic, political and cultural factors (Perry and Quarantelli, 2005).

In examining disaster capitalism, two processes of global scale – otherwise appearing to progress quite independently of one another – more evidently intertwine: disaster and neoliberalism. Disasters caused by extreme weather/climate events have become more frequent and their impacts more severe (IPCC, 2012; Pelling, 2003; UNDRR, 2019), while neoliberal practices and reforms have expanded globally (Harvey, 2005). The increased impact of disasters and the expansion of neoliberalism have made it possible to observe how, in specific contexts, neoliberal practices have taken over post-disaster recovery processes. Boano (2009), Gunewardena and Schuller (2008) and Bristol (2010), for example, documented how reconstruction processes following the 2004 Indian Ocean tsunami were used as a pretext to end historic disputes between fishing communities and tourism operators. A large majority of recovery and reconstruction efforts were concentrated on the rehabilitation and expansion of large tourism interests, forcing relocation (without planning) of poor people and small businesses from the coastline. Similarly, Button and Oliver-Smith (2008) recount the displacement induced by Hurricane Katrina in 2005, and, in particular, the differential employment trends of diverse populations in the reconstruction process. The authors draw attention here to the negative distortion of labor markets and the exploitation of minority

groups. In Chile, researchers such as Saavedra and Marchezini (2020), González-Muzzio and Sandoval (2018), Gould *et al.* (2016), Imlan *et al.* (2015) and Pulgar Pinaud (2014) have observed disaster capitalism in relation to the reconstruction of homes and cities after the 2010 Maule earthquake and tsunami. For instance, Pulgar Pinaud (2014) reveals the political and economic relations between state, NGOs and the private sector during recovery. Gonzalez-Muzzio and Sandoval (2018) have exposed the privatization of disaster reconstruction, and Gould *et al.* (2016) have revealed that in spite of the political differences between the center-left and the right-wing administrations, all governments have tended to leverage top-down, rather than democratic, approaches to post-disaster recovery governance.

In conceptualizing disaster capitalism for the purposes of analysis, the phenomenon can be defined in terms of processes that go before (*ex ante*) and after (*ex post*) disasters. *Ex ante* disaster capitalism covers neoliberal practices that have caused or amplified disaster risks. *Ex post* disaster capitalism, by contrast, refers to where the occurrence of disasters has been used to introduce neoliberal-style adjustments and ultimately has been treated as a market opportunity (Figure 1). As this would suggest, disaster capitalism is an approach adopted mainly by the corporate class and governments to directly profit from disasters and/or to introduce neoliberal reforms. These reforms may, on the one hand, tend to amplify risks prior to the occurrence of a disaster or, on the other hand, be opportunistically introduced after a disaster.

The existing research on disaster capitalism has focused primarily on *ex post* neoliberal practices and their critique. Nevertheless, there are some cases in which attention has been paid to *ex ante* practices. Schuller (2008), for example, uses the case of Hurricane Katrina in 2005 to point out environmental deregulation as the root cause of wetlands destruction in the area. This, along with other activities such as oil production on the high seas and the construction of dykes and other infrastructures that support the production of crude oil, ultimately amplified the destructive effects of the hurricane (Schuller, 2008). Oliver-Smith (1994), meanwhile, undertook a deep historical analysis of an unsolved development problem in Peru that inevitably led to disaster following the 1970 Yungay earthquake. Looking at *ex ante* neoliberal practices as causes, amplifiers or risk drivers is therefore also important, as it reflects another, even deeper, facet of neoliberalism that links disasters to development



Source(s): Authors, 2020

**Figure 1.**  
Phases of disaster  
capitalism and areas of  
analysis

issues: neoliberalism as a cause of disaster risks. These examples furthermore offer some insight into why interactions between neoliberalism and disasters are highly challenging for governments and public institutions.

Recent disasters and post-disaster contexts have been examined fruitfully through the lens of interplay between socio-economic and political forces, especially in terms of how these events can be exploited to promote neoliberal reforms. Naomi Klein (2008), drawing on what she describes as Friedman's (1962) articulation of "contemporary capitalism's core tactical panacea," proposes the term *shock doctrine*, where crises such as disasters can provide a window of opportunity to introduce structural changes and to see to it that "the politically impossible becomes the politically inevitable." (Friedman, 1962, p. 7).

According to the shock doctrine, once disasters have occurred, these can also turn into "market opportunities for the corporate class" (Klein, 2008, p. 6). Here, it is fundamental to point out that the private sector is not an external, passive or less important actor in recovery and reconstruction. On the contrary, the private sector has maintained an important role in post-disaster phases for decades, particularly in reconstruction efforts. However, the role of the private sector, and corporativism in particular, in the generation and accumulation of risk, as well as in how development is approached and carried out, has not been thoroughly addressed in the academic literature. As Sarmiento *et al.* (2015) have noted, the co-responsibilities of the private sector and other actors in governance processes do not diminish the central and non-delegable responsibilities that government institutions have. But the fact that private investments can both be affected by disasters and create disaster risk (Sarmiento *et al.*, 2015) should not be underestimated. As Sandoval and González-Muzzio (2015) assert, the market should not be excluded neither from the equation when it comes to reducing disaster vulnerabilities nor from post-disaster processes.

The research concentrates on two dimensions of disaster capitalism: private gains from disastrous events and the introduction of reforms. Hence, the methodological proposal positions itself at the *ex post* of disaster capitalism, and it focuses on two distinctive disasters in Chile: the 2010 Maule earthquake and the 2008 Chaitén volcano eruption. These were selected due to data availability and because they recently occurred in a well-established neoliberal context (i.e. Chile).

The first case looks at the impacts and recovery costs of the 8.8M<sub>w</sub> earthquake that struck the Maule region (and 5 other regions) on February 27, 2010. According to the final government report (Gobierno de Chile, 2014), the disaster (known as 27F) affected more than 12 million people (75% of total population of the country) and caused about US\$30 billion in damages. The death-toll reached 521 people, with 56 missing. The second case focuses on the Chaitén volcano eruption that occurred on May 2, 2008, in Los Lagos region in southern Chile. Although this disaster did not cause any loss of life, it has relevance because it caused the forced displacement of more than 8,000 men and women, which resulted in 4,000 people becoming homeless, and US\$70 million in economic losses (Presidencia de la República de Chile and Narváez, 2009). Hence, the research analyzes two comparably distinctive and yet very different cases: one, a large-scale disaster (i.e. 27F) with massive negative consequences, and the other, small-scale (i.e. Chaitén). Through comparing two different cases, the research tests how a neoliberal context influences post-disaster processes, providing the opportunity for some cross-case observations on disaster capitalism. The following section explains the methodological approach.

### **Methodological approach: assessing neoliberal reforms and the role of the corporate class**

The purpose of this work is to advance the study of disaster capitalism by proposing a data collection strategy to assess both the introduction of neoliberal reforms after disasters and

the practice of capitalizing on disasters (i.e. the marketization of post-disaster recovery processes). This research adopts a methodological approach that enables cross-case analyses and comparison between the processes for two distinct disasters in the context of Chile.

The body of analyses on political reforms, including cross-country statistical assessments, is vast and profound within political science. Yet, analyses of political reforms triggered by disasters are still rare in the field of disaster research. One interesting attempt in this direction is found in the model of event-related policy change (Birkland, 2006). With this model, Birkland found that disasters do not tend to produce direct transformations in policy direction (i.e. neoliberal or not). Instead, policy change is more a function of contextualized experience. It should be noted, however, that Birkland's model deals more with policy learning after disasters rather than with the role and policy implications of the corporate class in post-disaster processes. Another attempt with more relevance for the present study is found in Edwards (2016). He analyzed how reformers often use the post-disaster policy space to articulate long-term development strategies based on market fundamentalism. He used two data sets to statistically correlate major disasters with neoliberal economic reforms. With countries as units of analysis, Edwards utilized the *Emergency Events Database (EM-DAT)* from the Centre for Research on the Epidemiology of Disasters at the University of Louvain (Belgium), and the *Index of Economic Freedom (EF)* – an annual joint publication by the Wall Street Journal and the Heritage Foundation. The *EM-DAT* provides the inputs for disasters, and the *EF* for the operationalization of neoliberal policy reforms.

Edwards' (2016) cross-country approach is useful to study these complex relationships between disasters and policy reforms, and to observe statistical correlations. But still there is no empirical instrument or tool that tracks – on a case-by-case basis and at the country level alone – changes to policy frameworks which are triggered by disasters. In other words, the present research takes Edwards' work as a reference point and deepens the analysis of the disaster/policy reform relationship through adopting a cross-case approach. Ultimately, this paper is also proposing a data collection strategy: a method through which each disaster case is scrutinized and tracked, firstly, in terms of its implications for the policy realm (of Chile), and, secondly, regarding the role of the corporate class during its recovery phase.

The work begins by proposing an indicator, the DC index, which represents the introduction of neoliberal reforms after disasters. As shown in Figure 2, the DC index is composed of two dimensions: (1) neoliberalization ( $N$ ), and (2) reform introduction (RI). So,  $DC = N + RI$ . This takes into account that some reforms could go in the direction opposite to neoliberalism. A case in point would be amendments that increase the state's role in post-disaster processes, such as an increase in or tightening of regulations for the private sector and private property, or less market freedom. To reflect this, the DC index ranges from  $-1$  to  $1$ . Negative values ( $0$  to  $-1$ ) mean higher incidence and intensity of state/public control, while higher positive values ( $0$ – $1$ ) represent neoliberal reforms. In the case of RI, a five-level Likert scale is used with balanced keying  $[-1, 1]$  to capture the above-mentioned state-private continuum.

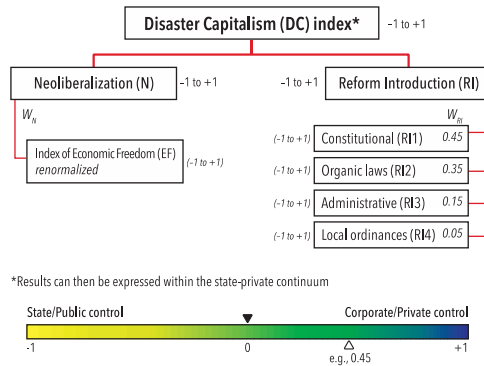
Calculation of the disaster capitalism (DC) index:

$$DC = N + RI$$

$$DC = (W_N \times EF_R) + (W_{RI1} \times v_{RI1} + W_{RI2} \times v_{RI2} + W_{RI3} \times v_{RI3} + W_{RI4} \times v_{RI4}) \quad (1)$$

DC is obtained through an arithmetic operation between neoliberalization  $N$  and reform introduction RI.  $W_N$  is the weight for  $N$ , and  $EF$  is the country value of Economic Freedom, renormalized ( $EF_R$ ). Then,  $v$  is the vector of weights  $W$  for each reform introduction (RI) value: RI1 is for constitutional changes; RI2 is for organic law changes; RI3 is for administrative changes; and RI4 is for local ordinance changes. Each of these variables and its calculation is explained with greater detail as follows.

**Figure 2.**  
Disaster capitalism  
(DC) index



Source(s): Authors, 2020

Calculation of neoliberalization (N):  $N = W_N \times EF_R$  (2)

Neoliberalization  $N$  provides the baseline on which the reform introduction  $RI$  will start affecting the DC. Then, the weight of  $N$  dimension,  $W_N$ , is equal to the country value of economic freedom  $EF$  for the year of the disaster.  $EF_R$  is the  $[-1, 1]$  renormalized economic freedom  $EF$  calculated as follows:

$$EF_R = 2 \times \frac{EF - EF_{\min}}{EF_{\max} - EF_{\min}} - 1 \quad (3)$$

$EF$  is a proxy to estimate the level of neoliberalization based on the *Index of Economic Freedom* by the Heritage Foundation (2019). Composed of specific measures of economic freedom,  $EF$  assigns a grade for each measure using a scale from 0 to 100, where 0 represents the lowest level of freedom  $EF_{\min}$ , and 100 the maximum  $EF_{\max}$ . Through arithmetic operation,  $EF$  is renormalized from  $-1$  to  $1$ , making  $EF_R$  compatible with DC.

According to the Heritage Foundation (2019), economic freedoms are grouped into four broad categories of economic freedom: rule of law (property rights, freedom from corruption), limited government (fiscal freedom, government spending), regulatory efficiency (business freedom, labor freedom, monetary freedom) and open markets (trade freedom, investment freedom, financial freedom). Each of the freedoms within these four broad categories is individually scored on a scale of 0–100.

Calculation of reform introduction (RI):

$$RI = W_{RI1} \times v_{RI1} + W_{RI2} \times v_{RI2} + W_{RI3} \times v_{RI3} + W_{RI4} \times v_{RI4} \quad (4)$$

The weight for each  $RI$  is  $W_{RI} = (1 - W_N)$ , where  $W_{RI} + W_N = 1$ .  $RI$  has 4 sub-indices for each reform type implemented. Sub-indices are weighted depending on the level of the reforms within the Kelsen's pyramid on the legal hierarchy of Chile (Cordero Quinzacara, 2009): reforms to the political constitution level ( $RI1 = 0.45$ ), at the level of organic and special laws ( $RI2 = 0.35$ ), at the level of national administrative rules and responsibilities ( $RI3 = 0.15$ ) and at the level of local ordinances ( $RI4 = 0.05$ ). The vector of weights (0.45, 0.35, 0.15 and 0.05) sums up to the dimensional weight  $W_{RI} = (1 - W_N)$ . Weights are allocated by the authors depending on the reform's level.

Additionally, each  $RI$  sub-index can take a value of the following vector  $v = (-1, -0.5, 0, 0.5, 1)$ . The elements of this vector can be positive or negative. Positive values mean that reforms effect a deepening of the level of neoliberalism, that is, they are in

the direction of privatization and/or deregulation. Negative values imply the opposite, that is, reforms move toward expropriation or market regulation. The values are related to the number of reforms implemented. A value of 1 indicates that two or more reforms were implemented. A value of 0.5 means that one reform was implemented. A value of 0 implies that no reform was implemented. Note that a value of 0 also can be the result of several reforms in opposite directions. In this case, 0 represents the cancelling out of reforms. Figure 3 illustrates how the values of the reform introduction’s sub-indices are assigned and weighted (i.e. RI1, RI2, RI3, RI4). The y axis represents legal framework categories, hierarchically distributed (weighted) from the national constitution to local or municipal ordinances. The x axis represents the state-private continuum, as described earlier.

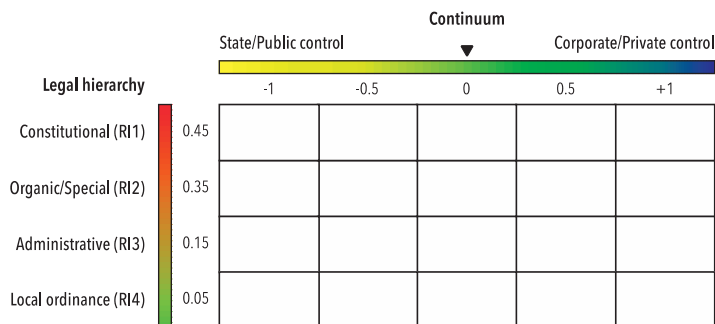
The search for reforms is based on keywords for each (disaster) case and on specific legal repositories, and is informed by post-disaster reports and media archives. In the case of Chile, there are some registries that gather all those legal inventories that make information on the legal framework available to users, for instance, the *Diario Oficial* (Official Gazette) produced by the Ministry of Interior and Public Security (Ministerio del Interior y Seguridad Pública, 2019), and the registry *LeyChile.cl* (BCN, 2019), a free database of the Congress Library that offers access to information, history and amendments over time on more than 250,000 legal instruments (i.e. the constitution, organic laws, rules and regulations).

This work also proposes a second indicator named PDPI, which examines the role of the corporate class during post-disaster recovery (see Figure 4). To examine private involvement, it is important to know the total disaster recovery costs, both public and private. Thus, the authors have considered public and private funds as the main dimensions in this indicator. Additionally, the authors have detected that in the case of Chile, the private sector may also receive direct allocations (the opposite of tendered resource allocations) from the state to conduct planning, development and rebuilding projects (e.g. PRES Constitución in Gonzalez-Muzzio and Sandoval, 2018). These direct allocations can be considered “transfers” from the public to the private. Therefore, the PDPI offers three dimensions: (1) public funds (P1), (2) private funds (P2) and (3) transferred funds (T). In a combined reading with the DC index, PDPI may work as a proxy for disaster capitalization by the corporate class.

Calculation of the post-disaster private involvement (PDPI) index:

$$PDPI = 2 \times \frac{T + P2}{P1 + P2 + T} - 1 \tag{5}$$

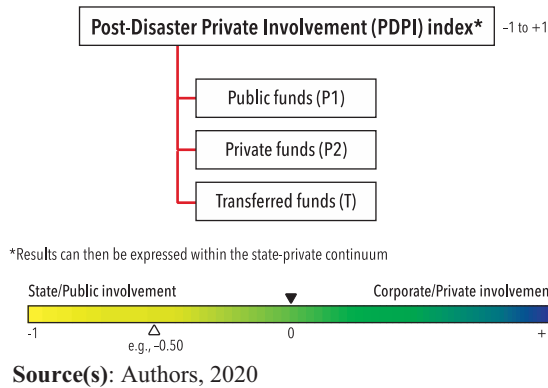
PDPI results from the arithmetic operation between the use of public funds  $P1$ , private funds  $P2$  and transferred funds  $T$ . These three variables represent the total costs of the recovery.  $P1$



Source(s): Authors, 2020

Figure 3. Reform introduction (RI) sub-indices matrix





**Figure 4.**  
Post-disaster private involvement (PDPI) index

represents the total amount of public funding used for recovery activities, and this includes not only reconstruction but also the costs of post-disaster mitigation and resilience measures. *P2* represents the total amount of private funding used for recovery, and this includes tax-exempted donations. *T* represents the total amount of state/public money transferred to private actors for recovery activities; this only includes direct allocations, not tender calls.

Private sector contributors to disaster recovery financing, including two types of actors: for-profit companies and private nonprofits, such as philanthropies and charities, which often raise money from business corporations and individuals for finance disaster recovery.

All values are in 2019 US dollars, using a single and official source of conversion, in this case the Central Bank of Chile. In alignment with the structure of the DC index, the final PDPI value can be positive or negative  $[-1, 1]$ . Higher positive values mean greater participation from private actors, and higher negative values imply the opposite: greater involvement of the state.

To estimate post-disaster costs and who pays for them, the PDPI assumes that costs are often collected and documented by governments and international organizations several months or years after disasters. For that reason, institutional reports and gray literature in general would be the principal source of evidence, collected through institutional and public search engines, and screened via documentary analysis methods. This methodology proposes looking at disaster databases such as the *EM-DAT* and *UNData*, and other organizations such as i-Rec (Information and Research for Reconstruction) and the International Recovery Platform (IRP), which do extraordinary work collecting cases studies and generating comprehensive reports for disasters around the world.

For the analysis timeframe, the proposed methodology considers the fact most governments tend to announce that recovery processes – including reconstructions – take about eight to ten years starting from the year the disaster occurs. Based on past experience in Chile, the present work estimates a time span for post-disaster recovery processes of eight years. Finally, this work underlines the limitations of a contextualized methodology for purposes of generalization and the need for continuing exploration of these and other variables of disaster capitalism.

### Results: factors that influence disaster capitalism

The DC index was applied to the two selected cases: the 2010 Maule earthquake and the 2008 Chaitén volcano eruption. The neoliberalization (*N*) value for Maule was 0.4158, and for Chaitén 0.4582. The values for each variable are detailed as follows:

(1) Neoliberalization:  $N = W_N \times EF_R$

The weight of the neoliberalization ( $N$ ) dimension  $W_N$  is equal to the country value of economic freedom (EF) for the year of the disaster:

For the case of Maule in 2010:  $EF = 0.77 = W_N$

For the case of Chaitén in 2008:  $EF = 0.79 = W_N$

$EF_R$  is the  $[-1, 1]$  renormalized economic freedom EF as follows:

For the case of Maule:  $EF_R = 2 \times \frac{0.77-0}{1-0} - 1 = 0.54$

For the case of Chaitén:  $EF_R = 2 \times \frac{0.79-0}{1-0} - 1 = 0.58$

The value for neoliberalization ( $N$ ) is in each case as follows:

For the case of Maule:  $N = 0.54 \times 0.77 = 0.4158$

For the case of Chaitén:  $N = 0.58 \times 0.79 = 0.4582$

(2) Reform introduction:  $RI = W_{RI1} \times v_{RI1} + W_{RI2} \times v_{RI2} + W_{RI3} \times v_{RI3} + W_{RI4} \times v_{RI4}$

The weight of the RI dimension is  $W_{RI} = (1 - W_N)$ , being  $W_{RI} + W_N = 1$

The weights of the sub-indices for Maule are:

$W_{RI1} = 1 - W_N - (1 - 0.45)(1 - W_N) = 0.104$

$W_{RI2} = 1 - W_N - (1 - 0.35)(1 - W_N) = 0.081$

$W_{RI3} = 1 - W_N - (1 - 0.15)(1 - W_N) = 0.035$

$W_{RI4} = 1 - W_N - (1 - 0.05)(1 - W_N) = 0.012$

The weights of the sub-indices for Chaitén are:

$W_{RI1} = 1 - W_N - (1 - 0.45)(1 - W_N) = 0.095$

$W_{RI2} = 1 - W_N - (1 - 0.35)(1 - W_N) = 0.074$

$W_{RI3} = 1 - W_N - (1 - 0.15)(1 - W_N) = 0.032$

$W_{RI4} = 1 - W_N - (1 - 0.05)(1 - W_N) = 0.011$

The vector  $v$  for RI sub-indices are:

For the case Maule:

$v_{RI1} = 0$

$v_{RI2} = 0$

$v_{RI3} = 0.5$

$v_{RI4} = -0.5$

For the case of Chaitén:

$$v_{RI1} = 0$$

$$v_{RI2} = -0.5$$

$$v_{RI3} = 0$$

$$v_{RI4} = 0$$

To identify changes in the Chilean legal framework triggered by each disaster, the authors consulted media and press release databases and the Congress Library Database (BCN, 2019) using keywords (in Spanish) such as *27F*, *Terremoto*, *Terremoto del Maule* and *Chaitén*, among others. In the case of 27F, 18 legal documents related to the disaster were found, published between February 2010 and December 2016. Many of them (13) did not have a distinguishable political orientation or could not be considered a consequence of 27F, and some (2) were related to other earthquakes, such as those that occurred in northern Chile in 2014. Nevertheless, three distinctive laws were promulgated for the reconstruction phase: Law 20444 for the Creation of the National Reconstruction Fund (in May, [Ministerio de Hacienda, 2010a](#)), Law 20455 on the Financing of Reconstruction (in July, [Ministerio de Hacienda, 2010b](#)) and Law 20469 on Mining-Specific Tax (in October, [Ministerio de Hacienda, 2010c](#)). The results do not consider transitory regulations and norms, just permanent changes – decrees, regulations and the like.

In the case of Chaitén, the research found eight legal documents related to the disaster, published between May 2008 and January 2015. Five were related to electoral rights and the relocation of government offices. Three relevant legal documents were related to some political orientation: Law 20385 (known as *Chaitén Law*, [Ministerio de Bienes Nacionales, 2009](#)), and two administrative rules – the 2008 inhabitability regulation, and the 2010 declaration of habitability. [Figure 5](#) summarizes in a matrix the values of the reform introduction's sub-indices (i.e. RI1, RI2, RI3, RI4) for each case.

The breakdown of the DC value is presented both using the DC equation and in graphic form (see [Figure 6](#)). For the 2010 27F disaster, this is as follows:

$$DC = (0.77 \times 0.54) + (0.104 \times 0 + 0.081 \times 0 + 0.035 \times 0.5 + 0.012 \times -0.5)$$

$$DC = 0.427$$

And for the 2008 Chaitén disaster:

$$DC = (0.79 \times 0.58) + (0.095 \times 0 + 0.074 \times -0.5 + 0.032 \times 0 + 0.011 \times 0)$$

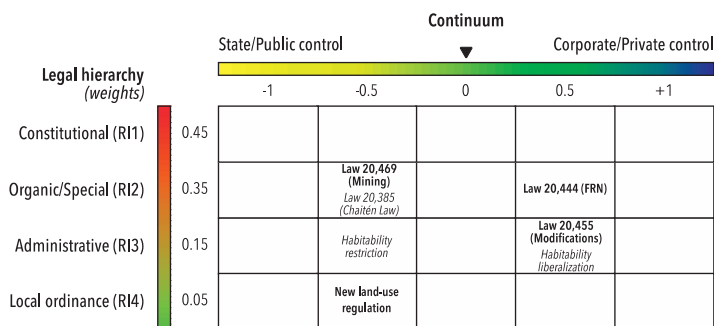
$$DC = 0.421$$

Subsequently, the PDPI index was applied to the Maule and Chaitén cases. To do so, an exhaustive document review of institutional reports and of other official sources was carried out to estimate the values of the PDPI sub-indices (i.e.  $P1$ ,  $P2$ ,  $T$ ). The results are summarized in [Table 1](#).

The breakdown of the PDPI value is presented using both the PDPI equation and graphic form (see [Figure 7](#)). For the 27F disaster in 2010, this is as follows:

$$PDPI = 2 \times \frac{12 + 4,230.73}{11,018.37 + 4,230.73 + 12} - 1$$

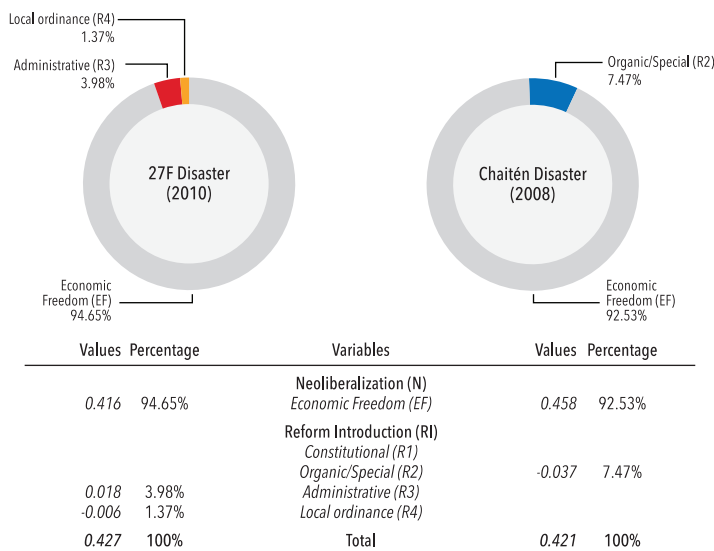
$$PDPI = -0.444$$



**Note(s):** Reforms related to the 2010 Maule earthquake are in **Bold**  
Reforms related to the 2008 Chaitén volcanic eruption are in *Italics*

**Source(s):** Authors, 2020

**Figure 5.** Reform introduction (RI) sub-indices for the 2010 Maule and 2008 Chaitén disasters



**Source(s):** Authors, 2020

**Figure 6.** Summary of the DC index for the 27F and Chaitén disasters

And for the 2008 Chaitén disaster:

$$PDPI = 2 \times \frac{0.32 + 0.21}{171.41 + 0.21 + 0.32} - 1$$

$$PDPI = -0.994$$

For the case of 27F, the present work estimates that DC = 0.427. This value indicates that 27F tended to slightly favor the neoliberal context in Chile rather than challenge it. 27F's political impact can be considered very limited, as it did not advance neoliberalization substantially. This observation is consistent with the patterns of neoliberal reforms and disasters between 1995 and 2012 described by Edwards (2016) for the case of Chile. Edwards (2016) found that

2010 Maule earthquake			2008 Chaitén volcano eruption		
Costs	US\$ M	Category	Costs	US\$ M	Category
Emergency towns	7.36	State/Public (P1)	Municipality of Chaitén	0.15	State/Public (P1)
Municipal Common Fund	15.00	State/Public (P1)	INDAP Chile	0.97	State/Public (P1)
Copper reserved law (FFAA)	1,207.45	State/Public (P1)	Reinforcement of riverside	0.37	State/Public (P1)
Other Copper reserved law	603.73	State/Public (P1)	Health	1.16	State/Public (P1)
Loans ( <i>Créditos productivos</i> )	411.44	State/Public (P1)	Housing unit investment	32.09	State/Public (P1)
Health	2,154.70	State/Public (P1)	Chaitén Law	67.49	State/Public (P1)
Housing	3,056.86	State/Public (P1)	Nueva Chaitén project (partial)	1.72	State/Public (P1)
Education	1,219.52	State/Public (P1)	MOP airport relocation	24.00	State/Public (P1)
Public works (infrastructure)	1,312.88	State/Public (P1)	Chaitén port	0.18	State/Public (P1)
PRES (other 5 outsourced)	1.86	State/Public (P1)	Route 5 re-establishment	0.05	State/Public (P1)
Other PRES and PRU initiatives	699.25	State/Public (P1)	Other costs during the 1st year*	43.23	State/Public (P1)
PRC (IPTs) and risk studies	2.27	State/Public (P1)	BID donation	0.20	Private/Donation (P2)
Heritage	216.02	State/Public (P1)	Private donations	0.01	Private/Donation (P2)
Economy/productive projects	60.60	State/Public (P1)	Consultancy Chaitén Plan	0.32	Transferred (T)
Firefighters	49.43	State/Public (P1)			
IFRC donation	16.18	Private/Donation (P2)			
'Chile Ayuda a Chile' campaign	68.38	Private/Donation (P2)			
Reconstruction Fund	69.41	Private/Donation (P2)			
Desafío Levantemos Chile	6.44	Private/Donation (P2)			
Other international donations	9.66	Private/Donation (P2)			
Housing insurance	1,263.80	Private/Donation (P2)			
Other insurances	2,795.25	Private/Donation (P2)			
PRES Constitución	1.61	Private/Donation (P2)			
Manos a la Obra' program	12.00	Transferred (T)			

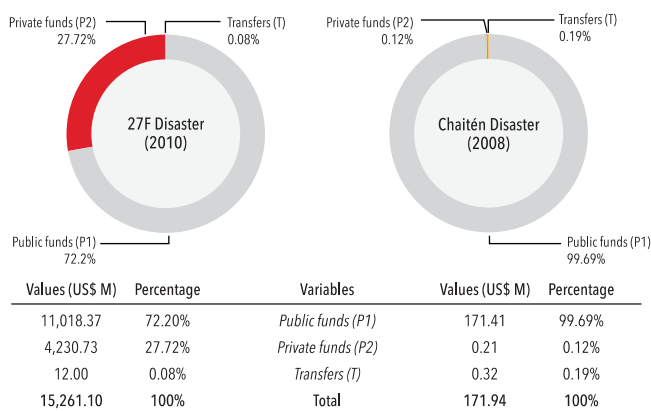
**Table 1.**  
Recovery costs of the  
27F and Chaitén  
disasters

**Source(s):** Authors, 2020

\* Based on Narváez's report (Presidencia de la República de Chile & Narváez, 2009)

measures of neoliberalism have moderately increased in Chile in the last two decades following disasters such as 27F. This is also aligned with the qualitative observations of Gould *et al.* (2016) on Chile. The authors point out that despite left-wing Bachelet and right-wing Piñera administrations, the 27F response, rehabilitation and reconstruction were dominated by a market-oriented, top-down – rather than democratic – approach to disaster recovery governance. The DC value can also be explained by the fact that the disaster took place in a high neoliberal context ( $EF = 0.77$ ), decreasing its potential to advance neoliberalism further. Ultimately, readers have to consider that the positive value of this DC implies that the 27F recovery was indeed neoliberal-oriented, in the sense that land and property rights were secured and maintained, and private companies continued their domination over key areas of social welfare, such as housing, education, health and pension.

This research also estimates that  $PDPI = -0.444$  for 27F. This value indicates that the direct involvement of the corporate class in the 27F post-disaster recovery was significant, but limited. In other words, the state assumed the large majority of the costs: US\$11.02 billion in public funds (72.2%), and US\$4.24 billion in private funds (27.8%). This does not mean,



Source(s): Authors, 2020

Figure 7. Summary of the PDPI index for the 27F and Chaitén disasters

however, that private companies did not benefit indirectly from public funds, as in the Chilean neoliberal context these funds were tendered (via contracts) to private companies to rebuild infrastructure and restore services.

### Discussion and conclusions: lessons from the Chilean cases

In a combined reading of the DC and PDPI values for 27F, the results show that the financial responsibility for the comprehensive recovery process was assumed by the state, although it is reasonable to infer that implementation occurred predominantly via the private sector, as the Chilean neoliberal context suggests (i.e.  $EF = 0.77$ ). Likewise, significant private investment could be noted where private interests and territory intersect, following patterns of a careful calculus of profit, positioning or visibility or a combination of all three, without following a strong pattern of public accountability. Private investment hardly competes with the coverage (i.e. geographically, and in the number and type of beneficiaries) of government investment, which is framed in the principles of social justice and common good. The situation becomes different when funding comes directly from the public through charities or public campaigns. The motives then align more closely with the state's principles, and the outcomes are subject to scrutiny and public accountability. This has been the case for charity campaigns following the 27F, such as *Chile ayuda a Chile* (Chile helps Chile).

In the case of Chaitén, the research determines that  $DC = 0.421$ . Like 27F, this disaster occurred in a neoliberal context, meaning that the room for maneuver to deepen neoliberalism was restricted. This DC value indicates that the post-disaster policies were probably in the opposite direction of state control: for instance, the Chaitén Law allowed the use of fiscal money to buy affected private properties in Chaitén as a compensatory measure to help citizens. Nevertheless, the DC value remains positive as the neoliberal context is still dominant (weighted neoliberalization variable  $W_N$ ), and therefore, the *rules of the game* did not change. On the other hand, the research estimates  $PDPI = -0.994$ . This value indicates that a minor proportion of the recovery costs was directly covered by private contributions: US\$171.4 million with public funds (99.7%), and US\$0.53 million with private funds (0.3%).

The present work aims to advance the understanding of disaster capitalism, that is, the relationships between disasters and neoliberalism. In doing so, this paper proposes a methodology for assessing political reforms triggered by disasters and the role of the corporate class within disaster recovery processes. This culminates in two indices (i.e. DC and PDPI) that seek to organize, in a coherent and comparative manner, these neoliberal policy

implications and the role of the corporate class. The disaster capitalism (DC) index is based on the introduction of neoliberal policies following disasters and weighted by the level of neoliberalization of the country, in this case Chile. The PDPI index is based on the share of public and private funding used for recovery.

In regard to the DC index, this study considers it to be the case that this proposal advances Edwards' (2016) work on estimating the relationship between disasters and the introduction of neoliberal reforms. This advance is achieved by developing a strategy to better capture the policy outcomes triggered by a given disaster and by drawing upon empirical case-specific data: recovery costs and type of reforms. Likewise, this research supports Edwards (2016) in suggesting that the theory of policy change is consistent with the view that neoliberal reforms are more likely after a disaster. But as this study has found in the case of Chile, preexisting contexts matter: a country with a high level of economic freedom (EF), such as Chile, has less space for new neoliberal changes, while the preexisting neoliberal policies can often be identified as root causes of disaster vulnerability. This can be observed in other cases in Latin America and the Caribbean (Saavedra and Marchezini, 2020; Lizarralde, 2015) and in other parts of the world (Birkland, 2006; Gotham and Cheek, 2017). In relation to the 2001 disaster in El Salvador, Wisner (2001) has pointed out that the lessons presented by Hurricane Mitch in 1998 were not learned by economic and political elites in the country, so actions to avoid the creation and intensification of risks and vulnerabilities were never taken. Likewise, Saavedra and Marchezini (2020) highlight the importance of always bringing to bear the consideration that disasters are social and historical processes that occur in the contexts of political regimes.

The methodological approach considers that in a hypothetical country with *zero* neoliberalism (based on its EF index), a neoliberal-oriented reform may imply a *change in the rules of the game*, that is, a radical change. This means that new deregulations, privatizations and other forms of withdrawal of the state will become effective from this stage onward. While in a *consolidated* neoliberal country (i.e. high EF value like Chile), neoliberal-oriented reforms may not necessarily imply radical changes, but rather indicate direct or indirect benefits for the current corporate class. This paper argues that these differences are well captured by the neoliberalization (*N*) variable as a dynamic weight to reform introduction (RI) values.

On the other hand, the PDPI index proposes looking at the involvement of the corporate class in a proportional distribution between public and private funding. There are detailed studies (Freeman, 2004) and reflections (Chandra *et al.*, 2016) on this. However, the authors have opted for a general account of this public-private participation in a way that enables a combined reading with the DC index.

Likewise, although the research aims to enhance an account of recovery costs through an exhaustive review of institutional reports and archival records, the authors acknowledge that a general overview of the costs will overlook geographical distributions of such costs that are also very important. To advance more accurately in this dimension, it would seem essential to incorporate private benefits and profits, specifically those directly linked to private recovery efforts.

In the course of collecting the data, the authors found that most disaster databases focus on disaster impacts such as economic losses, casualties and insurance, but few on verified recovery and reconstruction costs. There are, naturally, post-disaster case studies and institutional reports documenting these efforts, but there is no database or organization that comprehensively and systematically collects and organizes such data – in the way, for example, *EM-DAT* and *UNdata* do. There is clearly a need for data systematization in post-disaster recovery.

Another implication for researching disaster capitalism, based on the results, lies in the availability of data and accountability. Despite the positive values of the DC index in both the 27F and Chaitén cases (i.e. toward neoliberalism), the PDPI registers negative values (i.e. toward the state). These values imply not only low involvement of the private sector but also

poor levels of participation in accounting (financially) their efforts and making them publicly available. The documents that this study reviews offer more complete accounts for the use of public funding than they do private funding. Although this seems logical, as the use of public funding demands accountability, the research detects that most usage of private funding and donations was not reported. This draws attention to disaster risk governance. Effective governance processes in disaster risk management entail wide interaction and collaboration between various actors, such as government institutions, the private sector, NGOs, academia, community-based organizations and society in general. The wider the participation, collaboration and leverage these actors have, the greater the effectiveness and sustainability of the measures that follow. This requires a horizontal governance approach that allows each actor to be involved in key public policy and decision-making processes while also accepting duties and responsibilities that are inherent to such mechanisms.

Another relevant observation concerns the perspective of scale. The low PDPI values in Chaitén (PDPI =  $-0.994$ ) can be due to the magnitude of the recovery efforts themselves. The Chaitén disaster recovery was 88.7 times smaller than that of 27F. Moreover, the Chaitén disaster occurred in an isolated community in southern Chile, distant from economic and political centers, as well as from market interests. The *small scale* of reconstruction needs, in addition to the costs of reaching distant communities, may have conditioned the interest of private efforts.

One implication for practice and society is that the methodological approach may work to challenge the *status quo* of disaster risk creation in the context of Chile. The study provides a method to monitor neoliberal practices in relation to disasters, and therefore to create more accountable post-disaster contexts in the future. The studied cases can then provide a starting point to better understand disaster capitalism in Chile. Nevertheless, there is a long way to go in order to establish a generalizable evidence-based and cross-case relationship between disasters and neoliberal practices. In that sense, more variables relating to disaster capitalism could be considered in future research, while other methods for weighting, such as the analytic hierarchy process (AHP), could be explored for determining the relative importance of each variable among a larger collection of variables.

This paper highlights the necessity of further research that considers longitudinal observations and assessments of neoliberal practices before and after disasters, especially studies that bring and integrate qualitative and quantitative data. On the quantitative side, the proposed comparative approach is a challenge and perhaps the main study's limitation. The main reason is that neoliberalism can take on different forms in different political and economy contexts. Being a dynamic construct, neoliberalism can evolve, transform, navigate and adapt to different cultural and social peculiarities, taking different shapes and manifesting in different ways over time. The challenge for the proposed approach is to examine more disaster cases in Chile and explore the limits of this method and these metrics. Although the results here have proven useful for the purpose of this study, if the method is beneficial in a wider context, it will probably need to be adapted to each political and economic context.

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