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Catastrophe bonds and financial risk: Securing capital and rule through contingency

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ABSTRACT

This paper uses the example of catastrophe bonds to investigate how exposures to geophysical, biological, and meteorological catastrophic events are constituted as securitizable and exchangeable financial risks in the insurance-linked securities (ILS) market. It discusses the techniques of catastrophe modeling as a pivotal mobile methodology for the calculation and creation of contingent assets out of the fabric of insured environmental and financial vulnerabilities. Catastrophe models are shown to enable economic exchange of contingent futures belonging to ontologically and geographically disparate orders. Pension funds are then introduced to illustrate how biological lives and retirement savings have become deeply entangled in the creation and extension of the ILS market. Pension funds are both major institutional investors in catastrophe bonds and also the principal sellers of "longevity risk" posed by pensioners. The extent to which labor both profits from and embodies securitized insurance risks illustrates the growing importance and ambivalence of contingency as a modality of accumulation and rule.

"Man first thought of insuring his shipping against the risks of navigation. Then he insured his houses, his harvests, and his goods of all kinds against risk of fire. Then as the idea of capital…gradually emerged in a clear form out of the confused notions that previously obscured them, man understood that he himself was a capital which death could prematurely destroy…He then devised life insurance…against the premature destruction of human capital. Next he realized that if human capital can be destroyed, it can also be condemned to disuse through illness, infirmity and old age, and so he devised accident, sickness and pension insurance. [This] is the true popular form of insurance."

-Chauffon (1884), *Les Assurances, leur passé, leur present, leur avenir*[1]

"Why have the Guardians of New Zealand Superannuation invested in catastrophe bonds?… [Because] they are a strong diversification play and offer attractive risk-adjusted returns…[funds] will mostly be invested in securities that cover US hurricanes and earthquakes, with some products covering European wind storms and Japanese earthquakes."

-Guardians of the New Zealand Superannuation Fund (2010), in a fact sheet for pensioners of the state

1. Introduction

This contribution positions the "natures of risk" (Baldwin and Stanley, 2012) in the context of a global insurance industry that is increasingly interdigitated with capital markets. In the past decade, trading has grown rapidly in the alternative asset class of insurance-linked securities (ILS), typically bonds, swaps, and futures whose rate of return depends on whether or not a pre-specified insurance loss trigger occurs within a certain time period. Of these products, catastrophe bonds are the most well known. As hedge funds and institutional investors search for profitable investment vehicles with low correlation with the rest of the market, they are increasingly turning to these risks issued by property- and life-insurers. This paper examines how phenomena as diverse as earthquakes, hurricanes and influenza pandemics are epistemologically constituted as risks forming part of the same asset class, the characteristics of which trouble typical conceptual dichotomies between assets and liabilities, and in between geophysical nature and human life. After considering the methods by which these more-than-human phenomena are produced as risks – that is to say, how their contingencies are calculated, abstracted, and put into circulation as financial instruments – the paper turns to their entwinement with the techniques and institutions governing everyday life. This process is most visible in public pension funds' investment in catastrophe bonds and private sector pension plans' sale of longevity risk through insurance-linked securitization. This opposition demonstrates how the same mobile methodologies used to commodify these myriad risks are both binding labor to financialized physical landscapes and revaluing labor through the lens of contingency.

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[1] P. 228, in Ewald (1991), pp. 204–205.

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1.1. Insurance technology

The institution of insurance, hailed as one of the principle indicators and results of modernity's triumph over pre-modern notions of fate (Bernstein, 1998), is also championed by economists and historians as a necessary condition for industrialization, urbanization, and economic development (cf. Wasow and Hill, 1986; Pearson, 2004). It is a technology whose genealogy is intimately bound with those of probability, risk calculation, and the constitution of the population as an object of liberal governance (Hacking, 1990; Ewald, 1991; Rose, 1999). Many scholars have conceptualized insurance with reference to Foucault's analytic of governmentality; that is to say, as a component part of the "ensemble formed by the institutions, procedures, analysis and reflections, the calculations and tactics that allow the exercise of [governmental] power, which has as its target population, as its principal form of knowledge political economy, and its essential technical means apparatuses of security" (Foucault, 1991, p. 102). Governmentality has thus been deployed to analyze the development of life, health, worker's compensation, and pension insurance – the "true popular forms" of insurance, as Chauffon calls them in the epigraph – as technologies which mobilized the statistical regularities of populations and sentiments of liberal solidarity to provide financial indemnification and security (Simon, 1987; Defert, 1991; O'Malley, 2002). Economic sociologists and historians have shown how the institutions of life insurance constantly negotiate and reflect changing social norms concerning morality, ownership, and responsibility (Zelizer, 1979; Knights and Vurdubakis, 1993; Clark, 1999; Quinn, 2008). It follows that the neoliberal eclipse of the welfare state has reworked many insurance technologies quite dramatically, as individual subjects are increasingly charged with their own self-care through private market mechanisms. Recent work has traced how the logic of neoliberal financialization has reshaped the terrain of life insurance and annuity markets and the subjectivity of financial consumers themselves (Martin, 2002; Langley, 2008; French and Kneale, 2009, forthcoming).

In comparison, the institution of property insurance has remained relatively unexamined (the primary exceptions being sociological treatments by Bougen (2003) and Ericson et al., (2003); not coincidentally, both texts were written in the aftermath of 9/11). Although natural hazards researchers investigating settlement patterns, environmental vulnerability, and post-disaster recovery have shown significant interest in the impacts of property insurance (Burton et al., 1993; Palm, 1995; Wisner et al., 2004), there has been relatively little critical consideration of the property insurance industry in terms of either the political economies of its operation or the governmental rationalities it employs (but see Ericson and Doyle, 2004; Johnson, 2010; Sturm and Oh, 2010). In the field of critical security studies, Lobo-Guerrero (2011) has performed perhaps the most historically wide-ranging analysis of both life and property insurance as a technology of risk. He insists that "whereas insurance against natural or man-made catastrophic events is usually presented as a form of reparation of damage on buildings and infrastructure", its real significance is as a form of *biopolitics* – which, following Foucault, he understands as the exercise of power for "the protection and promotion of forms of life" (p. 5). Given these silences and provocations, this paper takes the capital-market-driven intermingling of the life and property insurance sectors in the form of catastrophe bonds as an entrée to consider the hybrid techniques of capital accumulation and rule they make visible.

I examine how the concept of "financial risk" is being mapped onto phenomena as ontologically disparate as epidemics, seismicity, demographic aging, and meteorological extremes, explicitly for the purpose of commensuration and exchange in the market. I suggest that the ILS market demonstrates that these "natures of risk" are *produced* and made equivalent through mobile technologies of assessment and simulation – they do not preexist a very particular neoliberal mode of assembling and ordering social, political, and environmental contingencies. This ordering has required discursive work to stabilize the concept of "financial risk" and transform ideas of responsibility, liability, and acceptable sources of profit (de Goede, 2005). Meanwhile, it has necessitated the enrollment of new expert actors such as seismologists, meteorologists, and epidemiologists to authorize the commensurability of different regimes of contingency within the domain of financial exchange. The resulting entanglements bring new problems to light that might inflect ongoing discussions of the commodification of nature on the one hand, and the financialization of biopolitical rule on the other.

Throughout the work I attempt to bring ideas from Foucault's later lectures (2008) on biopolitics and the development of neoliberal governmental rationalities into generative conversation with broadly Marxian analysis of nature, capital, and labor in the tradition of historical–geographical materialism (Harvey, 1982, 1996; Smith, 2008 [1984]). In this attempt, I find that Lemke's (2001) perceptive reading of Foucault's "Birth of Biopolitics" lectures opens up new terrain. Lemke suggests that governmentality's analytical strength "consists of the fact that it construes neo-liberalism not just as ideological rhetoric or as a political-economic reality, but above all as a political project that endeavors to create a social reality that it suggests already exists" (p. 203). In the same vein, Brown points out that the extension of neoliberalism is a deeply normative, "constructivist project: it does not presume the ontological givenness of a thoroughgoing economic rationality for all domains of society but rather takes as its task the development, dissemination, and institutionalization of such a rationality" (2005, pp. 40–41). Such normative projects are also often *performative* endeavors, as Mitchell (2007) has shown with respect to neoliberal development economists' "natural experiments" establishing private property regimes. The relevant question here is then, *how and with what tools* are empirical social relations coaxed to more closely resemble idealized normative ones? The discursive and material constitution of abstract "financial risk" out of entangled social, biological, and physical relations allows us to observe this process in action, and to question its self-apparent logic.

1.2. Risk as register or mechanics?

The register of "risk" has become something of a master narrative through which the contemporary moment is articulated, pervading academic discussions of the economy, finance, and everyday life. Among many other theoretical incarnations, risk has been recently conceptualized as a new *form* of money (LiPuma and Lee, 2004), a *method* of differentiation and capital accumulation (Martin, 2006), a *mode* of rule (O'Malley, 2004) and a *device* for biopolitical securitization (Dillon, 2008). This is of course to say nothing of its proliferation in discussions of ecology, health, climate change, and terrorism. If the single concept of "risk" can accomplish all of these tasks for authors working within broadly similar theoretical frameworks, it seems fair to ask whether invoking "risk" as a sort of register has contributed to the loss of its meaning and analytical purchase. Conceptual flexibility of application seems to come at the expense of precision about the social and material relations that configure specific risks as such – their actually existing mechanics. Many discussions of the role risk plays in mediating relationships between individuals, capital accumulation, and rule seem to resort to either high abstraction or anecdotalism.

It is in relation to these tendencies that this research endeavors to keep the scales, geographies, and precarities of insurance risks within our analytical field of vision. This requires methodological attention to the sites, institutions, and discourses that mediate these risks. Research for this paper – part of a larger study of