Disaster and Preference: A Unified Theory and Evidence from the Philippines and Japan

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Abstract

Recently, a number of studies have investigated the impact of disasters on individual preference parameters such as risk aversion coefficient and time discount rate. Yet, there are two remaining issues in the literature: First, the parameter under investigations is different depending on the study, generating largely mixed empirical results; and second, there is no theoretical underpinning to interpret these empirical findings. We aim to bridge these gaps and the "measurement without theory" problem in the existing literature on individual preferences and disasters by investigating the impact of a natural disaster on present bias, time discount, and risk aversion parameters, which are elicited in an integrated manner by a new experimental technique called the Convex Time Budget (CTB) experiments developed by Andreoni and Sprenger (2012) and Andreoni, Kuhn, and Sprenger (2013). Based on this approach, we employ unique experimental data collected from a village in the Philippines, which was hit by a strong flood, Habagat, in 2012 and from the March 11 earthquake and tsunami affected Iwanuma city in Japan to investigate the overall impact of the flood on individual preferences and decisions. The following four empirical results emerge. First, the CTB experiment offers reasonable levels of time discounting, moderate curvature and quasi-hyperbolic discounting in the whole sample. Second, we find that being hit by the flood makes individual significantly more present-biased than those who are unaffected by the flood. Third, a specification test of utility function reveals that the existence of canonical hyperbolic discounting as

well as quasi-hyperbolic discounting. Finally, out results are theoretically consistent based on Saito (2015), suggesting that the mixed empirical evidence in the existing studies are an artifact due to the lack of an integrated theoretical framework.