



The long-run impact of a traumatic experience on risk aversion[☆]



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ABSTRACT

We examine the long-run impact of exposure to a traumatic event on risk attitudes. We estimate risk aversion of those who experienced the Korean War at different ages to identify a sensitive period for risk attitude formation. This major war broke out suddenly, and the impact of the war on civilians was substantial but limited to a brief period of time. The results reveal that individuals who were 4–8 years old during the peak of the war are more risk averse about five decades later. Furthermore, within the affected cohorts, those who resided in more severely damaged provinces are more risk averse.

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1. Introduction

Psychologists and sociologists have long studied why personality, attitudes, and beliefs vary across individuals and how they are shaped or learned in the first place (Hoffman, 1977; Parke and Ahser, 1983). Traditionally, economists have focused on choice or behavior, rather than the preferences that determine the outcomes. Not until recently have economists examined preference heterogeneity and the origins of such heterogeneity.¹

There is abundant evidence indicating that risk preferences differ significantly across individuals. Risk aversion differs by individual characteristics such as gender, age, education, income, and parental background (Eckel and Grossman, 2002; Hryshko et al., 2011; Dohmen et al., 2011). Such differences may be biologically, environmentally or socially driven. For

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¹ For example, economists have become interested in gender differences in preferences, joining late the so-called “nature versus nurture” debate. Refer to Croson and Gneezy (2009) for a review of the literature.

example, many neurological studies (Figner et al., 2010; Leijenhorst et al., 2010; Schonberg et al., 2012) find that risk-related behavior is correlated with prefrontal activity. On the other hand, Booth and Nolen (2012) find that girls randomly assigned to single-sex environments exhibit more risk-seeking behaviors than their coed counterparts, suggesting that risk preferences are formed when personality is established and children learn to embody social norms and establish a lifestyle.

In this study, we examine how civil war exposure at different ages affects risk preferences in the long run. Our study is related mainly to two strands of the literature. The first is the growing body of literature that shows that early life conditions have a significant impact on subsequent economic outcomes (Conti et al., 2012; Black et al., 2007; Alderman et al., 2006; Almond et al., 2005). More directly related to our study, a number of studies that focus on the impact of childhood exposure to a major civil war also show that the exposure has long-lasting effects on socioeconomic outcomes such as health and education (Akbulut-Yuksel, 2014; Parlow, 2012; Kesternich et al., 2014; Akresh et al., 2011). One possible mechanism for such long-term effects is that childhood conditions play significant roles in the formation of preferences. Our study attempts to shed light on the long-term impact of early life experiences on risk preferences.

Second, a number of recent studies have found that risk preferences of adults are altered after traumatic experiences such as natural disasters (Cassar et al., 2011b; Eckel et al., 2009; Li et al., 2011; Sacco et al., 2003) and economic distress. Studies of the long-term impact of traumatic events on risk attitudes show that recollection of fear from violence from up to three decades ago (and possibly the more recent past) and adverse financial experiences in early life increase risk aversion (Malmendier and Nigel, 2011; Callen et al., 2014). Our study contributes to this line of literature linking past experiences to risk aversion later in life in that we try to identify a specific age range that is critical for the formation of risk attitudes. Using a developmental psychology term on which we elaborate in Section 2, we aim to identify the “sensitive period” for risk preferences.

In this paper, we examine if childhood exposure to the Korean War has changed the risk preferences of the adult South Korean population by using hypothetical lottery questions from a national survey of approximately 8000 individuals. The Korean War lasted for 3 years in the Korean peninsula between South Korea—supported by 16 allied countries led by the United States—and North Korea, which was supported by China and the Soviet Union. Approximately one million soldiers from either side participated in the war. By the time the war ended in 1953, resulting in the division of Korea into North and South Korea, almost two million civilians had been wounded or killed. As the population of Korea (North and South, combined) was approximately 30 million in 1950, the war was a devastating experience for Koreans at the time.² The Korean War provides a unique opportunity for us to study our question in the following aspects. The war occurred between 1950 and 1953, and the civilian damage was heavily concentrated in the year 1950, while the survey was conducted in 2004. The timing of the war and of the survey enables us to estimate the long-term impacts for a wide range of birth cohorts. In other words, different birth cohorts experienced (or did not experience) the war at different ages.

The Korean War is a natural experiment with some desirable features for studying the causal impact of exposure to a major civil war. First, the breakout of the Korean War was unanticipated. Second, the war proceeded at a rather rapid pace. Third, there were very few war refugees to foreign countries, as South Korea is a peninsula that shares its border only with North Korea. Lastly, the intensity of the war varied substantially across regions. More importantly, the intensity seems to have been haphazard across regions. The variations in war intensity seem exogenous, as it appears to have been the result of the battle strategy of either side rather than of any factor related to individual preference. This permits us to exploit within-cohort variation in treatment intensity. Thus, we can exclude any cohort effects.

To summarize our main finding, the empirically identified treatment group is more risk averse than the control group more than five decades after the war. Our treatment group consists of individuals aged 4–8 years in 1950 when the impact of the Korean War on civilians was at its peak. Our control group consists of individuals who experienced the war at either younger or older ages, or were born after the war ended. The finding that the war’s impact is only significant for the specific age range suggests that there exists a sensitive period for risk preference formation. Further, utilizing the geographic variation in war intensity, we find a significant increase in risk aversion only among those who lived in risky provinces where civilian damage was substantial. As long as the geographic variation in war intensity is exogenous as we argue, the effect should be causal. The result is robust in both reduced-form and structural estimation, and the effect’s magnitude is not trivial, as it is comparable to the size of the gender gap in risk aversion.

The remainder of the paper is organized as follows. Section 2 provides a brief review of related studies in economics as well as psychology, and we discuss our paper’s contribution to the literature. In Section 3, we introduce our data and empirical strategy. We also discuss the validity of key assumptions for causal inference. Section 4 presents estimation results. Section 5 concludes.

2. Literature review

A number of studies in psychology and economics have examined the determinants of risk attitudes. Risk attitudes are determined by individual factors such as personality (Zeleskiewicz, 2001; Trimpop et al., 1999), cognitive abilities (Benjamin

² According to Kim (1996), during the war, over 120,000 guns were lost, over 100 tons of grains were lost, and over 250,000 South Korean students were brought to the war. With regard to the civilian damage, approximately 22,000 km or 63% of landline communication system was destroyed, approximately 1.2 million war refugees had to temporarily leave home in South Korea, and more than 4000 schools were completely destroyed.

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