

On the Effects of Persistent Catastrophic Growth Shocks on Equity Premiums

Shiba Suzuki

Abstract

This paper explores the effects of catastrophic growth shocks, such as natural disasters and wars, on equity premiums. Catastrophic growth shocks that we consider in this paper are infrequent but greatly reduce economic growth rates. Rietz (1988) and Barro (2006) demonstrated that if such catastrophic growth shocks are one-shot, representative agent asset pricing models with constant relative risk aversion utility generate large equity premiums. However, observed catastrophic growth shocks tended to persist in reducing economic growth rates for several years. This paper demonstrates that catastrophic growth shocks with empirically plausible degree of persistence can generate negative equity premiums. A major reason for the emergence of negative equity premiums is that if catastrophic growth shocks are persistent, equity prices rise on the occurrence of catastrophic growth shocks due to strong asset demand in preparation for possible repeated growth shocks. Then, an equity share yields capital gains during an aftermath, and is held as insurance against catastrophic growth shocks even in normal times. In fact, a sharp rise in equity prices during an aftermath was historically observed in countries invaded by Nazi Germany at the beginning of World War II. Then, our results are one of counter examples against Rietz-Barro results.