

INVESTIGATING GENDER DIFFERENCE IN FINANCIAL RISK TAKING

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Abstract: Risk taking is central to financial decision and there are sizeable findings suggest that men are more risk-prone than are women. Can this gender effect be shaped by the biological differences? The biological differences between women and men involve hormone testosterone. In recent literature, digit ratio (2D:4D) is found to be negatively correlated with prenatal exposure to testosterone, while face width-to-height ratio (fWHR) is positively correlated with pubertal exposure. They are considered as the proxies of testosterone exposure. And also, time pressure is common in many financial decision. However, little is known about the effects of time pressure, and their interactions with biological differences of two genders on risk taking behaviours.

Therefore, we designed an experiment of Hey and Orme (1994) risk elicitation tasks with under time pressure sessions: without time constraint, 8 seconds and 4 seconds constraints. The photographs of participants' face were taken and their right hands were scanned as measurements of 2D:4D and fWHR. Their risk attitudes are estimated under both Expected Utility and Rank-Dependent Expected Utility. Our structural models assume power CRRA utility function, Lattimore (1992) two parameter probability weighting function and Wilcox (2008) stochastic errors, which equipped us with more explanatory power to reveal participants' risk attitudes.

After introducing the testosterone markers to the structural models estimation and correlating with risk attitudes, we found that: (1) there is no overall gender effect on risk attitudes in our sample; (2) male subjects with more testosterone exposure are more likely to make riskier decisions; (3) under more extreme time pressure, subjects have more risk-averse attitudes, more cognitive insensitivity of probability and more optimistic views of the extreme outcomes; (4) subjects with more testosterone exposure have more risk seeking behaviours under time pressure, compared to those with lower exposure. Our results suggest the biological determinants of gender differences in financial risk preferences.

Keywords: Risk attitudes · Testosterone · Gender difference