Report Type
> Mid Term Award Report

Full Name
> Dr. Qiusha Peng

Your E-Mail Address
> q.peng@jbs.cam.ac.uk

Faculty/Department
> CERF

Project Title
> Noisy Rational Bubbles

Project Start Date
> Sep 01, 2015

Project End Date
> Aug 31, 2017

Amount Awarded
> 30,000 Pounds per year

Project Abstract
> This project explores the implications of asymmetric information and investor flows on asset prices. Through history, asset prices occasionally rose spectacularly and then fell sharply and often dramatically. Existing literature on speculative bubbles usually attributes such extreme price behavior to speculation by investors. However, while exiting models focus on specific aspects of these episodes, nearly all of them leave the description of dynamics of asset prices incomplete. Another notable phenomenon accompanying "bubble-like" episodes, that has been largely ignored in the literature, is a massive inflow of new investors. This research project seeks to fill these two gaps in the existing literature. I develop a theory to show how speculation by rational, but imperfectly informed investors, together with an endogenous influx of new investors, can lead to a period of rapid run-up in asset prices that is then followed by either a crash or a prolonged downturn. After this, I further explore various implications. One novel element in my theory is uncertainty about the average precision of information. This can be applied to discuss earnings manipulation and firm valuation. Another direction I am working toward is to use the data on options to empirically test the model.

Activities and Achievement
> This theory has several layers, first how bubbles arise in the equilibrium, then how prices rise and fall and also what is the role played by each element in the model. The main results can be summarized as follows. My paper develops a theory of asset price dynamics during bubble-like episodes. In the model, noise trading breaks the winner's curse and leads to overpricing. Over time, investors gradually learn and asset prices tend to fall toward the fundamentals. Importantly, however, investors also update their expectation about the average precision of new information. This mechanism works to drive prices farther away from the intrinsic value. Finally, my model also allows for gradual investor inflows greatly amplifying predicted price movements. Numerical simulations show the model can produce various bubble-like events.
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> Now the paper is under revision for the second-round review at Journal of Economic Theory. The paper was selected into the poster session of the 2017 annual meeting by American Economic Association this January. I also gave seminar talks on this paper at different places, like New York University Stern School of Business in the U.S. and Hong Kong University of Science and Technology in Asia. Now I am working on its application on payout policy and firm valuation.

Dissemination

I am now revising the paper for the second-round review at Journal of Economic Theory. The paper was selected into the poster session of the 2017 annual meeting by American Economic Association this January. I also gave seminar talks on this paper at different places, like New York University Stern School of Business in the U.S. and Hong Kong University of Science and Technology in Asia.

Outputs

Major Difficulties and Any Other Issues

One task that is very time-consuming is to write the theory well in a clear way. For the new paper on its application to corporate finance theory, I need to link the theory more closely with empirical studies.

Web Links

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2663561

Additional Information

Declaration

Details of relevant outputs of this award have been submitted to the CERF Database and details of any ensuing outputs will be submitted in due course.

Signature - Main Award Holder

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