Report Type
	End of Award Report
Full Name
	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
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

My main theory paper can be summarized as follows: I develop 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. As a result, prices keep going up for some periods and then start to fall. My model also allows for gradual investor inflows greatly amplifying predicted price movements. Numerical simulations show the model can produce various bubble-like events. I have presented this paper at various conferences and schools, now it is r&r at Journal of Economic Theory.

I also explored the source of mis-valuation from the angle of firm fundamentals. Prof. Lambrecht and I have been studying the interaction between managerial compensation and payout policy under asymmetric information and its implications on the efficiency of valuation and stock price. Now we are finalizing the results and writing up the paper.

Dissemination

The main paper is r&r at Journal of Economic Theory. In the past two year, I also gave talks on this paper at different places, including Rutgers and NYU Stern in the

U.S., HKUST in Asia, and North American Econometric Society Summer Meeting in Philadelphia.

For the second paper with Prof. Lambrecht, we will also submit to conferences and journals for publication.

Outputs

Title: Noisy rational bubbles

Abstract: This paper develops a theory of asset price dynamics during bubble-like market episodes. In the model, noise trading breaks the winner's curse and leads to systematic overpricing. Over time, investors gradually learn and asset prices tend to fall toward the fundamentals. Importantly, however, investors also update their expectations regarding the average precision of new information. This mechanism works to drive prices farther away from the intrinsic value. Finally, the model also allows for gradual endogenous investor inflows that greatly amplify predicted price movements. Numerical simulations show that the model can produce various price episodes.

Web link: https://sites.google.com/site/pengqiusha2010/research

Presentations: North American Summer Meeting of Econometrics Society (2016), Rutgers, HKUST, NYU (2017), AEA (poster, 2017)

Major Difficulties and Any Other Issues

Our school has subscribed commonly-used datasets in the WRDS database. It would be great if it can cover some extra ones such as OptionMetrics (for options data) and TAQ (intraday trading for big data analysis), since it is too expensive for individual license.

Web Links

More information can be found at
https://sites.google.com/site/pengqiusha2010/research

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