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Adverse effects of leverage and short-selling constraints in a financial market model with heterogeneous agents

Daan in 't Veld*

Abstract

This paper investigates the impact of leverage and short-selling constraints on financial market stability. Investors' demand is modelled in a well-known asset pricing model with heterogeneous beliefs. In particular, I generalise the heterogeneous agents model of Brock and Hommes (1998) and Anufriev and Tuinstra (2013) to allow for leverage constraints as well as a short-selling tax. I consider two examples of adaptive belief systems describing the coevolution of prices and investors' beliefs. First, if the market is inhabited by fundamentalist and chartist traders, demand constraints have potential adverse effects and may restrict the stabilising fundamentalist strategy such that mispricing and price volatility increase. Second, if the market is inhabited by fundamentalists, optimists and pessimists with fixed beliefs, demand constraints drive down price volatility, but mispricing remains. The results suggest the stabilising effects of demand constraints in financial markets are limited. Only if asset prices are too high compared to fundamentals, policy makers should consider constraining leverage ratios in order to deflate financial bubbles.

Keywords: asset pricing model, heterogeneous agents, financial stability, short-selling bans, leverage constraints
JEL classifications: G12; G18; C61

1. Introduction

Should policy makers intervene in financial markets, and if so, how effective are market regulations? During times of large financial distress, the potentially amplifying role of excessive investment positions to asset price bubbles and crashes is heavily debated. Leverage ratios have been found to be highly procyclical (Adrian and Shin, 2010) and at times increase

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