Tobin Tax in Minority Game Market Models

Josephine Mielke, Felix Patzelt, and Klaus Pawelzik
Institute for Theoretical Physics, Department Neurophysics
University of Bremen, Bremen, Germany

Talk at: DPG Spring Meeting 2011

Abstract

The introduction of the Tobin Tax is discussed as a financial tool to reduce speculation and short-term trading at foreign exchange (FX) markets, to reduce large fluctuations and thereby to protect national currency stability.

Minority Games serve as minimal models of financial markets. In particular, they reproduce the power-law distributed return fluctuations (stylized facts) by operating close to a phase transition.

In order to include the Tobin Tax we propose to extend a Minority Game market model to include a trading mechanism, fundamentalists and speculators (‘chartists’). When chartists are endowed with limited resources and subjected to the tax we observe, that FX rate fluctuations decrease. A reduced number of speculators remain in the market exploiting the increased predictability. Fundamentalists with unlimited resources are not affected by the tax as they function as liquidity suppliers. They correspond to investment banks at real FX markets which do not participate in short-term trades. We find an intermediate tax which maximizes tax revenue and noticeably reduces market fluctuations.