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Humboldt Project

**Economic Crises from the Bottom-up: An Agent-based Simulation of
Economic Crises and Mitigation through Quantitative Easing**

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Degree programme:	BA Sociology, Politics & Economics
Semester:	Spring Semester 2020
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Handed in by:	July 31 th , 2020

Abstract:

This project is a replication study of a paper from 2010 by Delli Gatti et al. titled “The financial accelerator in an evolving credit network”. The original model is an agent-based simulation of evolving credit networks between firms and banks. Credit-based expansion induces vulnerability for bankruptcy cascades and thus the start of a recession as a consequence of a small shock to a single firm. In addition to the replication, this paper discusses the monetary policy of Quantitative Easing in the context of economic crises within the original model from Delli Gatti et al.’s paper. Results from the original paper show a successful modelling of endogenous business cycle fluctuations and the emergence of bankruptcy avalanches matched with several stylized empirical facts. Due to several errors in the original model that were found during replication, it was not possible to reproduce the results. Despite its limited external validity, the original model still provides a relevant description of the mechanisms behind the emergence of economic crises.

JEL Classification: C63, E51,

Keywords: Financial Crises, Quantitative Easing, Agent-based Macroeconomics