



University of  
Zurich <sup>UZH</sup>

# **Agent-based Financial Economics**

## **Lesson 10: Leverage**

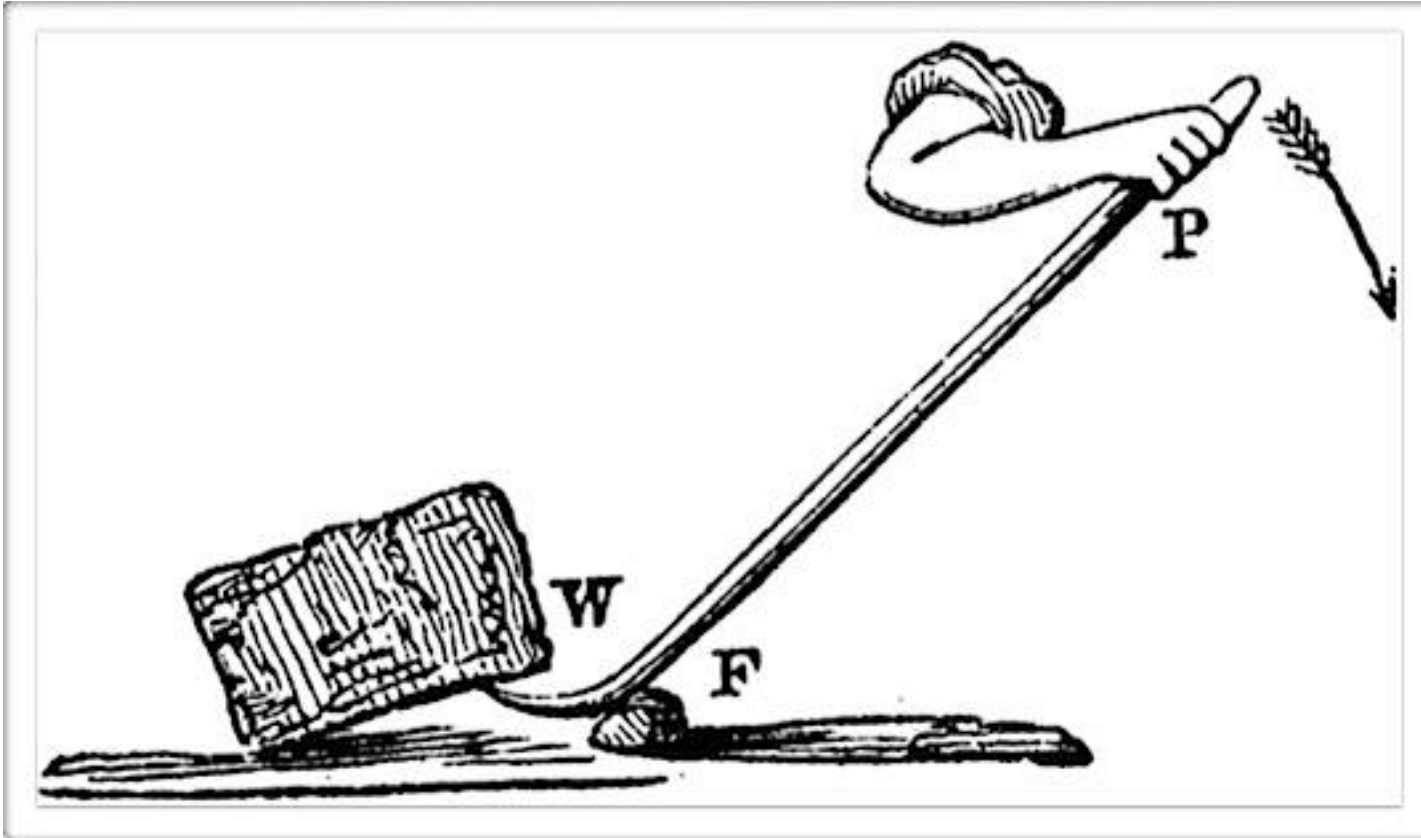
Luzius Meisser, Prof. Thorsten Hens

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“What I cannot create, I do not understand.”

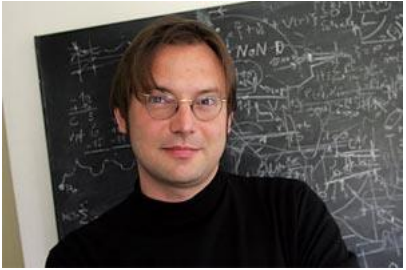
- Richard Feynman

# Today



- Discussion of leverage paper by Farmer et al.
- Diving into the code, discussing ideas for your agents

# Leverage: single slide overview



Stefan Thurner



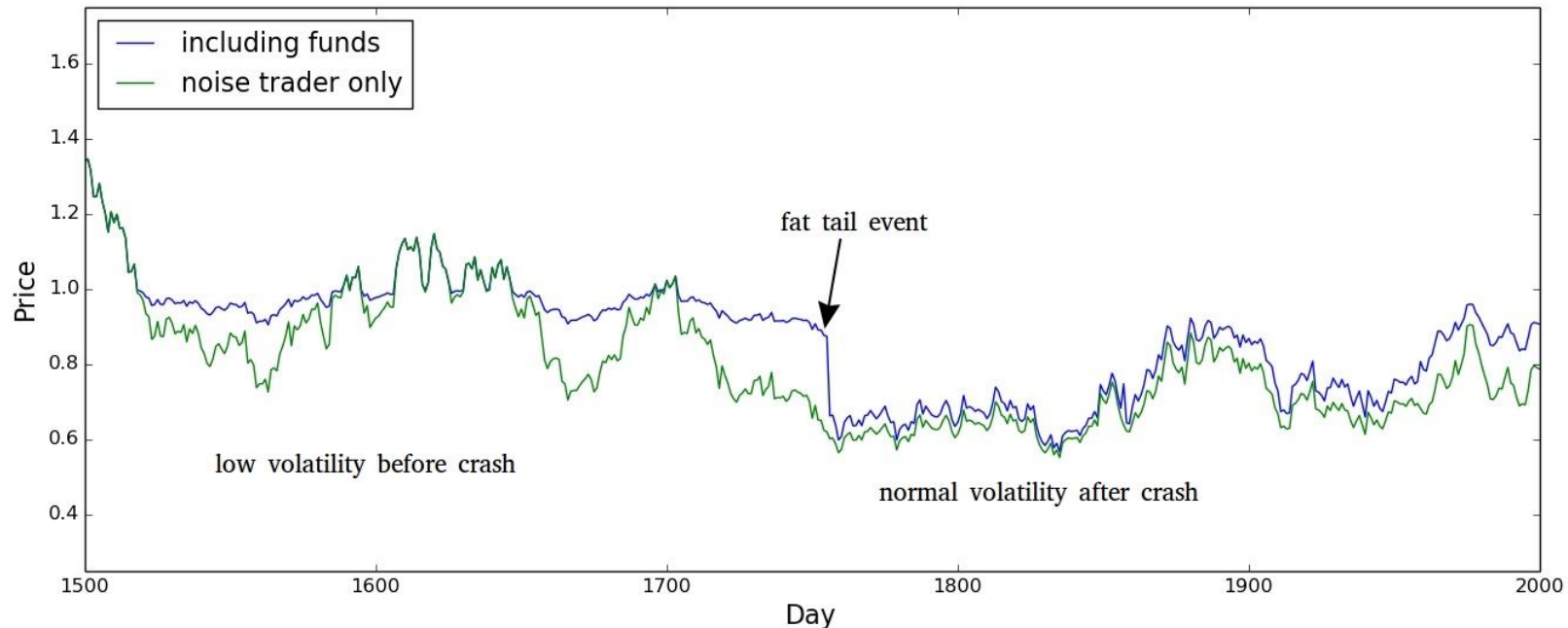
Doyne Farmer



John Geanakoplos

*“The market can stay irrational longer than you can stay solvent.” - Keynes*

- Leverage can cause fat tail events through cascade of margin calls.
- Two active types of investors:
  - Noise traders
  - Leveraged, fundamentalist funds

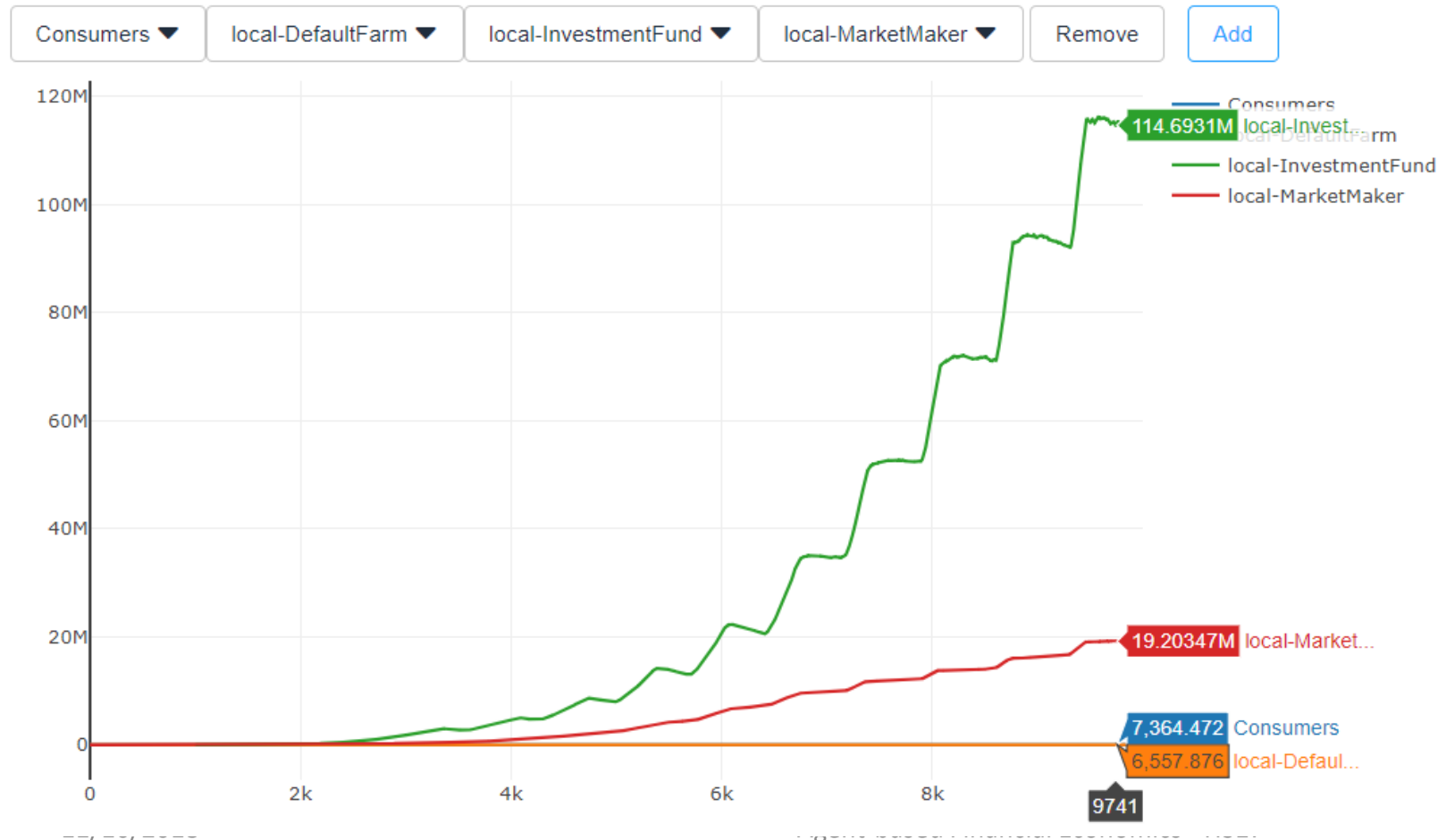


See separate presentation for further information.

# Simulation: inflated prices

Metric: wealth ▾ Download

Net worth at market prices. Related: cash statistics.

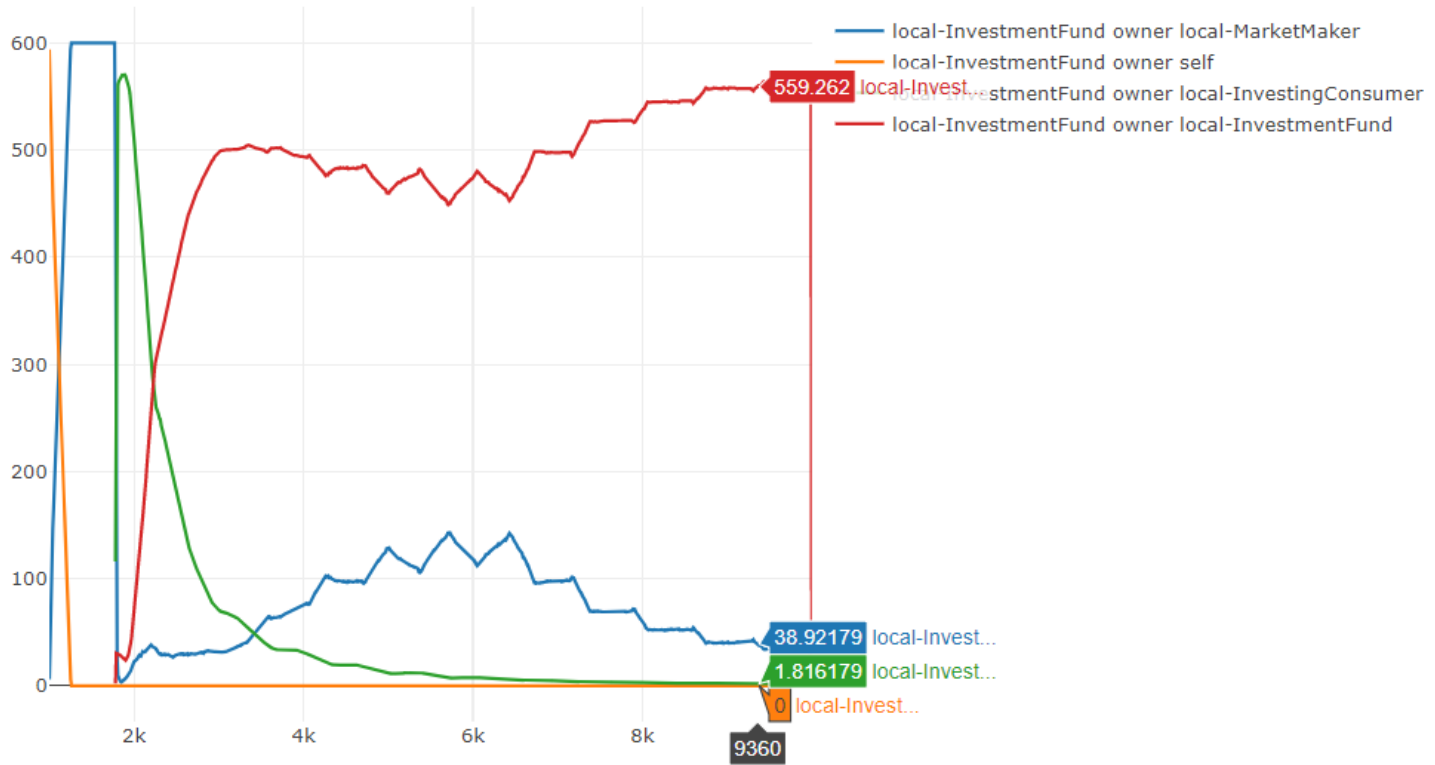


# Simulation: inflated prices

Metric: ownership ▾ Download

Some general statistics on firm ownership.

local-InvestmentFund owner local-MarketMaker ▾ local-InvestmentFund owner self ▾  
local-InvestmentFund owner local-InvestingConsumer ▾ local-InvestmentFund owner local-InvestmentFund ▾ Remove Add



Funds seem very successful but basically just own each other at inflated valuations...

# Code dive...