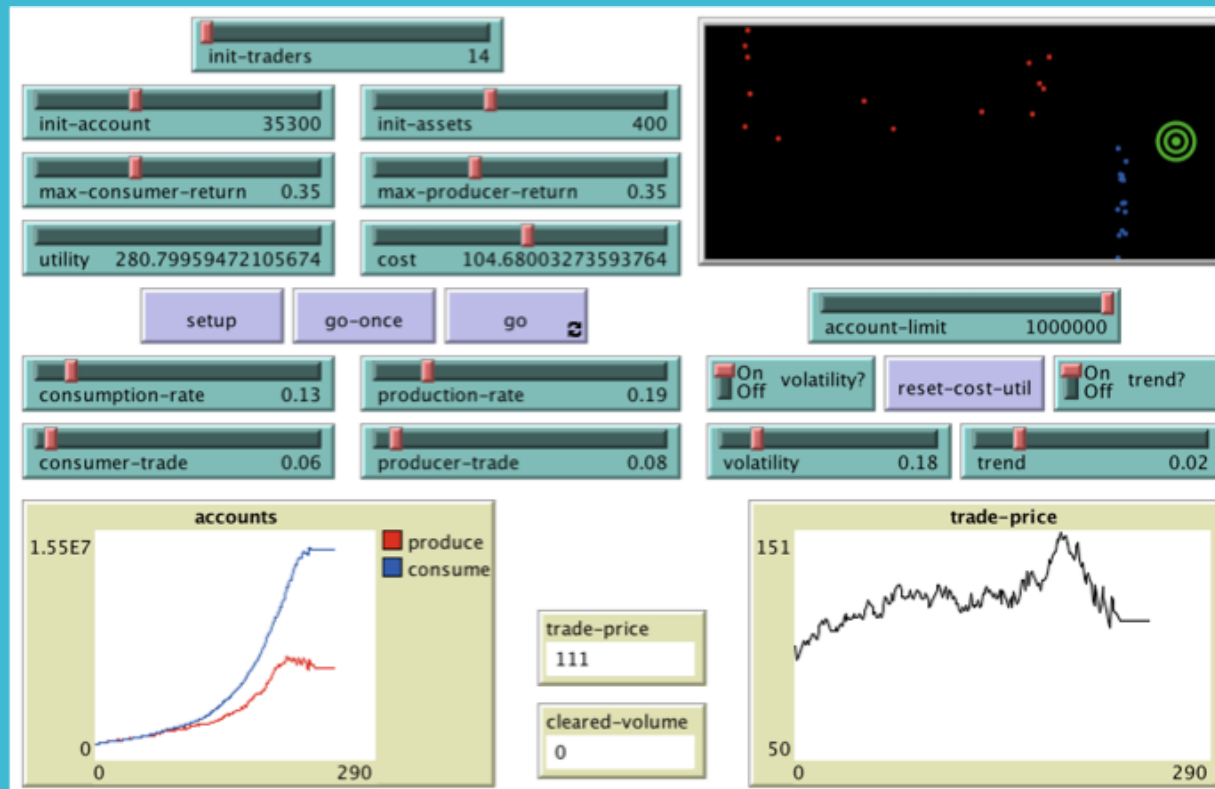


# Auction Mechanisms

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## Agent-Based Modeling of Trading Markets



Model:

Zero-Intelligence Traders

Modified from *Gode and Sunder, 1993*

- Demonstrates the behavior of converging to an optimal price given agent price, without knowledge of an equilibrium supply and demand.

# Auction Extension

written in Scala

- Discrete-time
- Double-sided market
- Optimize price where supply meets demand.
- Manages accounting properties of all trading agents.
- Reports last trade price and volume info.

## ZI Traders - How it works

- Traders are grouped into two categories. Producers – build asset (- cost) and sell. Consumers – buy asset and expend it. (+ utility)
- During creation, agents are given a price to trade within a range, which remains the same throughout the rest of the simulation.
- Agents (each turn):
  1. I will trade a proportional quantity per turn at the price
  2. I will perform economic functions to produce or consume
- Emergent characteristics:
  1. Describes the growth of a market by accumulating total value in a greater than zero-sum game
  2. Demonstrates convergence to equilibrium prices with unintelligent individual pricing decision