What Drives Commodity Price to Rise Sharply at Turning Points?

To understand the main drivers behind sharp rise in commodity prices with respect to resource availability, we introduce an agent-based model in which agents set their prices to maximize profit. At steady state, the market self-organizes into three groups: excess producers, consumers, and balanced agents. When resources are scarce, prices rise sharply at a turning point due to the disappearance of excess producers. By introducing an elasticity parameter, noises in market data of commodities are significantly reduced and provide evidence of turning points for essential commodities, as well as a yield point for non-essential ones.