Universal Growth in Production Economies

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Abstract

We study a simple variant of the von Neumann model of an expanding economy, in which multiple producers make goods according to their endowed production function. The players trade their goods at the market and then use the bundles acquired as inputs for the production in the next round. The decision that players have to make is how to invest their money (i.e. bids) in each round.

We show that a simple decentralized dynamic, where players update their bids proportionally to how useful the investments were in the past round, leads to *growth* of the economy in the long term (whenever growth is possible) but also creates unbounded *inequality*, i.e. very rich and very poor players emerge. We analyze several other phenomena, such as how the relation of a player with others influences its development and the Gini index of the system. [1]

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[1]The full version of the paper is available at https://arxiv.org/abs/1802.07385.

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