

All or Nothing:
Indivisible Goods, Relative Wealth Concerns,
and Attitudes to Risk
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Overview

▶ **Inequality has aggregate consequences**

- ▶ Economic growth: Distorts human capital allocation and aggregate demand (Galor & Zeira, 1993)
- ▶ Financial stability: Drives credit bubbles and financial instability (Rajan, 2010)
- ▶ Political stability: Shapes incentives over political reform (Acemoglu & Robinson, 2006)

▶ **Inequality is self-reinforcing**

- ▶ The opportunity channel: Wealth gaps → unequal access to education → persistent income gaps
- ▶ The financial channel: The savings glut → wealth concentration via interest flows
- ▶ The political channel: Economic power → lobbying → regressive policy shifts

▶ **Understanding the evolution of inequality is the key to effective intervention**

▶ **This paper: Allocation of indivisible goods reinforces inequality**

- ▶ Allocation of indivisible goods → relative wealth concerns → risk-taking → greater inequality

Model environment

Endowment

	<i>Divisible (C_i^e)</i>	<i>Indivisible (H_i^e)</i>
Rich	\$30	1 + 0.5
Poor	\$20	1 + 0.3
V.Poor	\$10	1 + 0.2



- ▶ **Endowment:** Each agent holds C_i^e and H_i^e
- ▶ **Monotonicity:** For all i and j , if $C_i^e > C_j^e$, then $H_i^e \geq H_j^e$.
- ▶ **Complementarity:** $u_i(C_i, \tilde{H}_i) = \log(C_i^\rho + \tilde{H}_i^\rho)^{1/\rho}$, $\rho < 0$
- ▶ **Indivisibility:** H_i cannot be consumed in fractions, $\tilde{H}_i = \text{floor}(H_i)$
 - ▶ The Rich must purchase from the Poor to consume an additional whole unit!

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Ascending Auction

	<i>Reservation Price</i>
Rich	q_R^s
Poor	q_P^s
V.Poor	q_{VP}^s

- ▶ **Allocation:** Prices are determined by an ascending price auction
 - ▶ q_i^s is the price at which agent i is indifferent between consuming s and $s + 1$ additional units of H
 - ▶ Reservation price is determined by (C_i^e, H_i^e) : $q_R^s > q_P^s > q_{VP}^s$
- ▶ Wealth rank determines access to the indivisible good
- ▶ Wealth level of the Poor determines the endogenous price

Relative wealth concerns and attitudes to risk

- ▶ **Relative wealth concerns: The poorer the poor, the happier the rich**
 - ▶ If the Poor agent has less, the auction price drops
 - ▶ Because the Rich agent is the buyer, their utility is indirectly linked to the Poor agent's poverty
- ▶ **Gambling preferences**: The Poor joins unfair bets
 - ▶ Indivisibility → Friedman-Savage convexity in indirect utility ▶ Utility
 - ▶ Poor agents with equal bargaining power accept negative expected return bets when the payoffs from gambles are positively skewed
 - ▶ Gambling preferences persist even with free access to credit market
 - ▶ Redistribution is ineffective in addressing inequality because gambling manufactures inequality
- ▶ **Risk capacity**: The Rich enjoys a natural hedge from acquiring indivisible goods
 - ▶ Aggregate risk → Poor holds \$10 instead of \$20 → $q_P^S \downarrow$ → the Rich acquires H via lower prices
 - ▶ The Rich is naturally hedged through lower q_P^S → greater risk capacity → higher risky asset share
 - ▶ The Poor is hit twice through losing \$10 and lower q_P^S → higher $Var(C_P)$ → lower risky asset share

Discussion

▶ **What do we know?**

- ▶ Allocation of scarce goods via auction generates relative wealth concerns (DeMarzo et al., 2004)
- ▶ Complementary indivisible goods → Friedman-Savage convexity in indirect utility (Ng, 1965)
- ▶ Price allocation of housing amplify wealth inequality via access to education (Fernandez and Rogerson, 1996)

▶ **What is new?** Two risk-taking channels arising from the allocation of indivisible goods

- ▶ Poorer agents rationally participating in negative expected-return gambles
- ▶ Relative wealth concerns provide natural hedge to the Rich and allow them to take more risks

▶ **My comments**

- ▶ Indivisible goods
- ▶ Alternative allocation mechanisms

Comment 1: Which indivisible goods generate relative wealth concerns?

▶ **Necessary conditions**

- ▶ Each agent holds claims on the tradable portion of an indivisible good
- ▶ Price of the indivisible good is determined by the endowment of the Poor
- ▶ An indivisible good with fixed and scarce supply, no quality differentiation

▶ **Examples of real-world indivisible goods provided in this paper**

- ▶ Housing: quality differentiation, prices can serve as signals for status
- ▶ Elite education: capacity constraints, no fractional claims, admission based on multiple criteria
- ▶ Medical treatment: publicly provided, prices regulated, access weakly tied to market-clearing prices

▶ **Suggestion:**

- ▶ Discuss real-world indivisible goods that satisfy the model's allocation rules
- ▶ Examples: land acquisition under minimal lot size requirement, organ trade

Comment 2: Alternative allocation mechanisms

- ▶ **Relative wealth concerns are generated by price and access to indivisible goods**
 - ▶ Agents care about the allocation of indivisible goods
 - ▶ Allocation of indivisible goods is tied to wealth distribution
- ▶ **Relative wealth concerns vanish under non-price allocation mechanisms, e.g., lotteries**
- ▶ **Suggestion:**
 - ▶ Policy implication: a warning against using price-clearing markets for essential, indivisible goods
 - ▶ Formalize welfare analysis, discuss alternative allocation mechanisms
 - ▶ Link to the literature on market design for the allocation of indivisible goods, e.g., Weitzman (1977), Che et al. (2013), Dworczak et al. (2021)

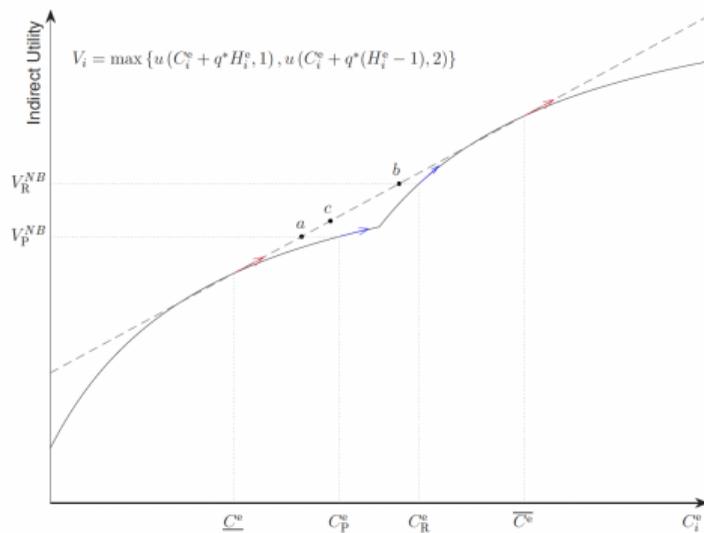
Other comments

- ▶ Relative wealth concerns = inequality concerns?
 - ▶ Inequality concerns as a preference: $W_R \uparrow \rightarrow V_P \downarrow$
 - ▶ Relative wealth concerns as an endogenous response: $W_P \uparrow \rightarrow V_R \downarrow$
- ▶ What are the microfoundations for gambling? What is the event?

Conclusion

- ▶ A new reinforcement mechanism in inequality via the allocation of indivisible goods
- ▶ Interesting household finance & policy implications
- ▶ Encourage everyone to read it!

Friedman-Savage convexity in indirect utility



- ▶ A Nash bargaining side bet: transforms (C_R^e, C_P^e) to the new bundle $(\underline{C^e}, \overline{C^e})$
- ▶ The Poor gambles for the identity shift required for indivisible good ownership