

Voting on Public Goods: Citizens vs. Shareholders

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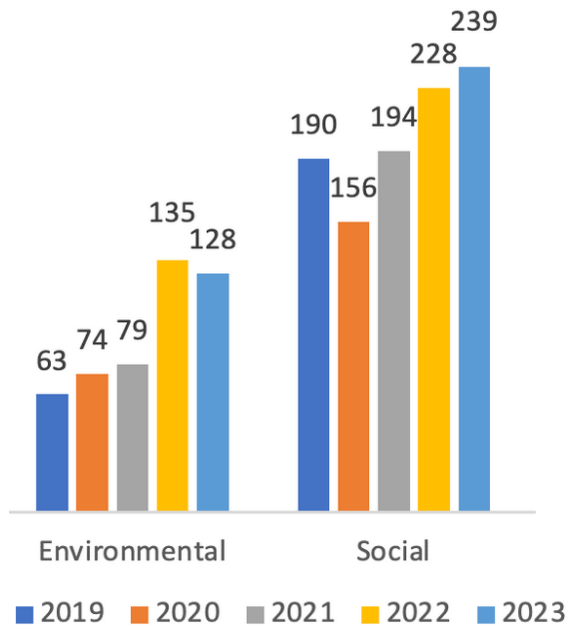
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Shareholder democracy

- Shareholders' engagement on E&S issues

Shareholder proposals
submitted to Russell 3000 firms



Source: ISS

More Investors Vote Against Corporate Directors Over Climate Change

Directors at businesses seen as behind the curve on climate change are getting less shareholder support. In some cases, changes have followed.

 **UK investor coalition
pushes for climate votes at
FTSE100 companies**

11.09.2024

Debate: What role should shareholders play in shaping societal outcomes?

Shareholder democracy and political democracy

- Shareholders' engagement on **E&S issues** → **externalities**
- But externalities typically a domain of **regulation** (shaped by **political processes**)



37 states introduced anti-ESG bills;
22 states adopted some form of anti-ESG legislation

Shareholder democracy

This paper

Political democracy

Regulation

More Investors Vote Against Corporate Directors Over Climate Change

Directors at businesses seen as behind the curve on climate change are getting less shareholder support. In some cases, changes have followed.

This paper

- Model of corporate public good provision (e.g., green investments, abatement)
- Public policy determined through **political elections**
- Public good investments made by firms
 - **shareholder democracy**
 - profit maximization ~ Friedman doctrine

Key mechanism

Shareholder democracy ↑ public good provision ...

... but political system responds: ↓ policy incentivizing public goods

+ More public good with **less deadweight loss** due to policy intervention

– Preference **representation** due to “1 share – 1 vote” → **ESG backlash**

Implications about the role of

- wealth inequality
- investor diversification
- delegation to funds

& additional insights with

- green-brown firm investor sorting
- political influence of the wealthy
- lobbying

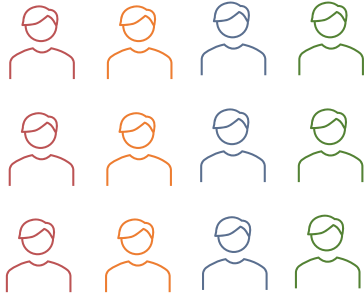
Setup

Model overview

Heterogeneous (k types)

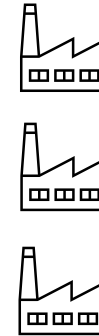
- wealth $\sim$ stake size α_{ij}
- marginal utility from public good γ_i

n households



own shares

m firms



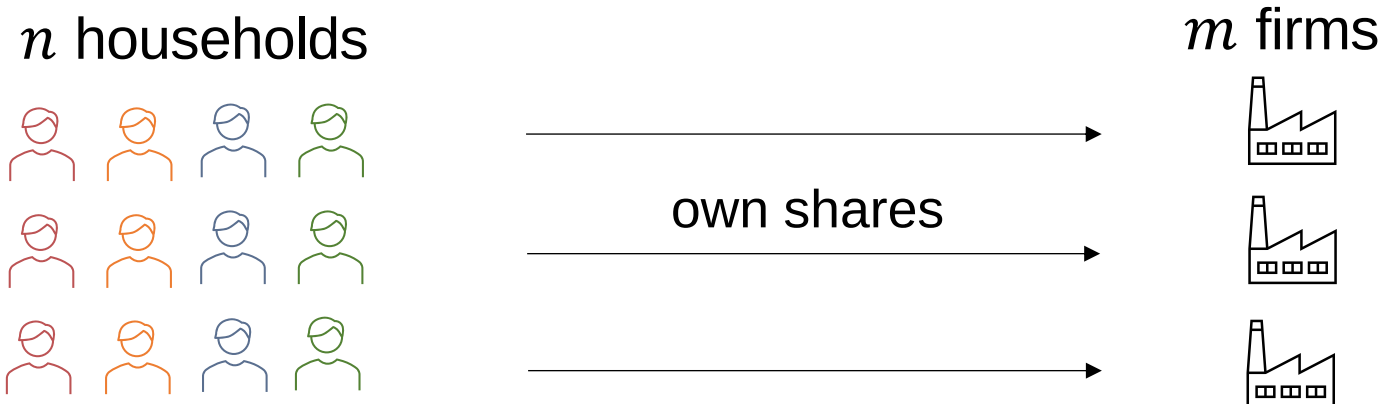
Model overview

Stage 1: Households **vote** in **political elections**

- Determine subsidy for public good
- 1 person – 1 vote: **median** voter matters

Stage 2: Households **vote** as **shareholders**

- Determine firm investments in public good
- 1 share – 1 vote: **wealth-weighted median** matters



Heterogeneous (k types)

- wealth $\sim$ stake size α_{ij}
- marginal utility from public good γ_i

Frictions in public policy

Subsidy funded by wealth taxes
→ no fiscal redistribution

Firms receive a Pigouvian subsidy σ for investing in public good...

... but regulation is imperfect:

subsidy cannot discriminate between valuable public goods & wasteful spending
 $= x$ $= y$

⇒ firm receives a **total subsidy** of $\sigma(x + y)$

Firm's production costs:

$$\frac{\phi}{2} x^2$$

$$\frac{\phi}{2\delta} y^2$$



- **Deadweight** costs of public policy
- Frictionless benchmark: $\delta = 0$

Analysis

Second stage: Firms' investments

Profit maximization: $x^p = \frac{1}{\phi} \sigma$ $y^p = \frac{1}{\phi} \delta \sigma$

Subsidy σ encourages wasteful spending

$\sigma \uparrow \Rightarrow$ deadweight costs $\uparrow$

Second stage: Firms' investments

Profit maximization: $x^p = \frac{1}{\phi} \sigma$ $y^p = \frac{1}{\phi} \delta \sigma$

Shareholder democracy: shareholder i 's preferred policies are

$$x^s = \frac{1}{\phi} \left(G_i^s + \sigma \left(1 - \frac{1}{m} \right) \right) \quad y^s = \frac{1}{\phi} \delta \sigma \left(1 - \frac{1}{m} \right)$$


Financial incentive from subsidy

Second stage: Firms' investments

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Effective pro-socialness of shareholder i

$$G_i^s = \frac{\gamma_i}{\alpha_{ij}}$$

- preferences (γ_i) ~ benefits from public good for i
- stake size (α_{ij}) ~ share of the costs paid by i

Second stage: Firms' investments

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- Shareholders' **pro-socialness** and **subsidy** are **substitutes** in public good provision
- But, subsidy encourages wasteful spending $\Rightarrow$ **imperfect substitutes**

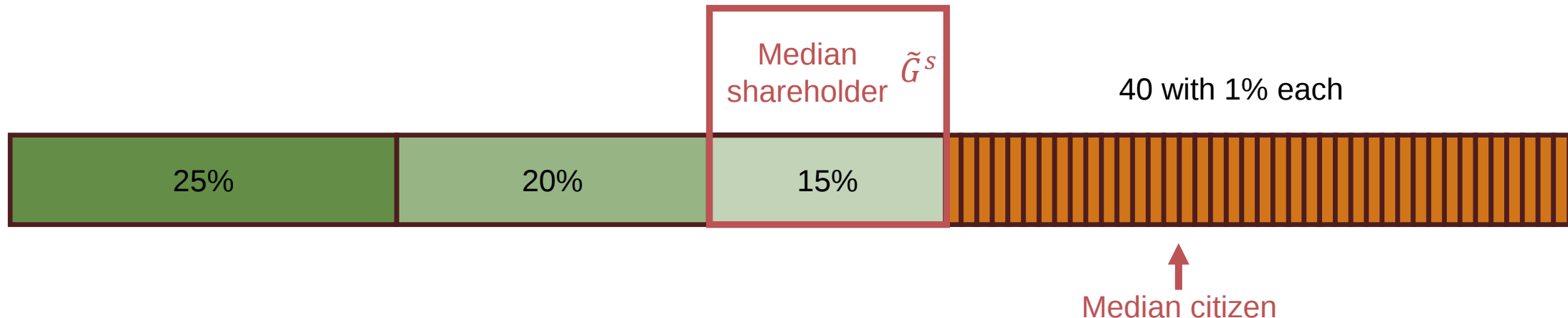
Second stage: Firms' investments

Profit maximization: $x^p = \frac{1}{\phi} \sigma$ $y^p = \frac{1}{\phi} \delta \sigma$

Shareholder democracy:

implements policy preferred by the wealth-weighted median shareholder

$$x^s = \frac{1}{\phi} \left(\tilde{G}^s + \sigma \left(1 - \frac{1}{m} \right) \right) \quad y^s = \frac{1}{\phi} \delta \sigma \left(1 - \frac{1}{m} \right)$$



First stage: Political elections

$$\text{median of } G_i^c = \frac{\gamma_i}{\alpha_i}$$

- Citizens **preferred subsidy** solves: $\max_{\sigma} U_i$ (anticipate firm's choices)
- Vote $\Rightarrow$ equilibrium subsidy reflects **median citizen's** pro-socialness $\tilde{G}^c$

Under profit maximization:

$$\sigma^p = \frac{\tilde{G}^c}{(1 + \delta)}$$

Under shareholder democracy:

$$\sigma^s = \frac{\tilde{G}^c - \tilde{G}^s}{(1 + \delta) \left(1 - \frac{1}{m}\right)}$$

Citizens **offset** shareholders' pro-socialness with a lower subsidy $\left(\frac{\partial \sigma}{\partial \tilde{G}^s} < 0\right)$

$\rightarrow$ ESG backlash: If $\tilde{G}^s$ large, policy disincentivizes public good: $\sigma^s < 0$

Equilibrium public good investment

Under profit maximization:

$$x^p = \frac{\tilde{G}^c}{(1 + \delta)\phi}$$

Under shareholder democracy:

$$x^s = \frac{\tilde{G}^c + \delta \tilde{G}^s}{(1 + \delta)\phi}$$

Without frictions ($\delta = 0$), shareholder democracy is fully undone by political response

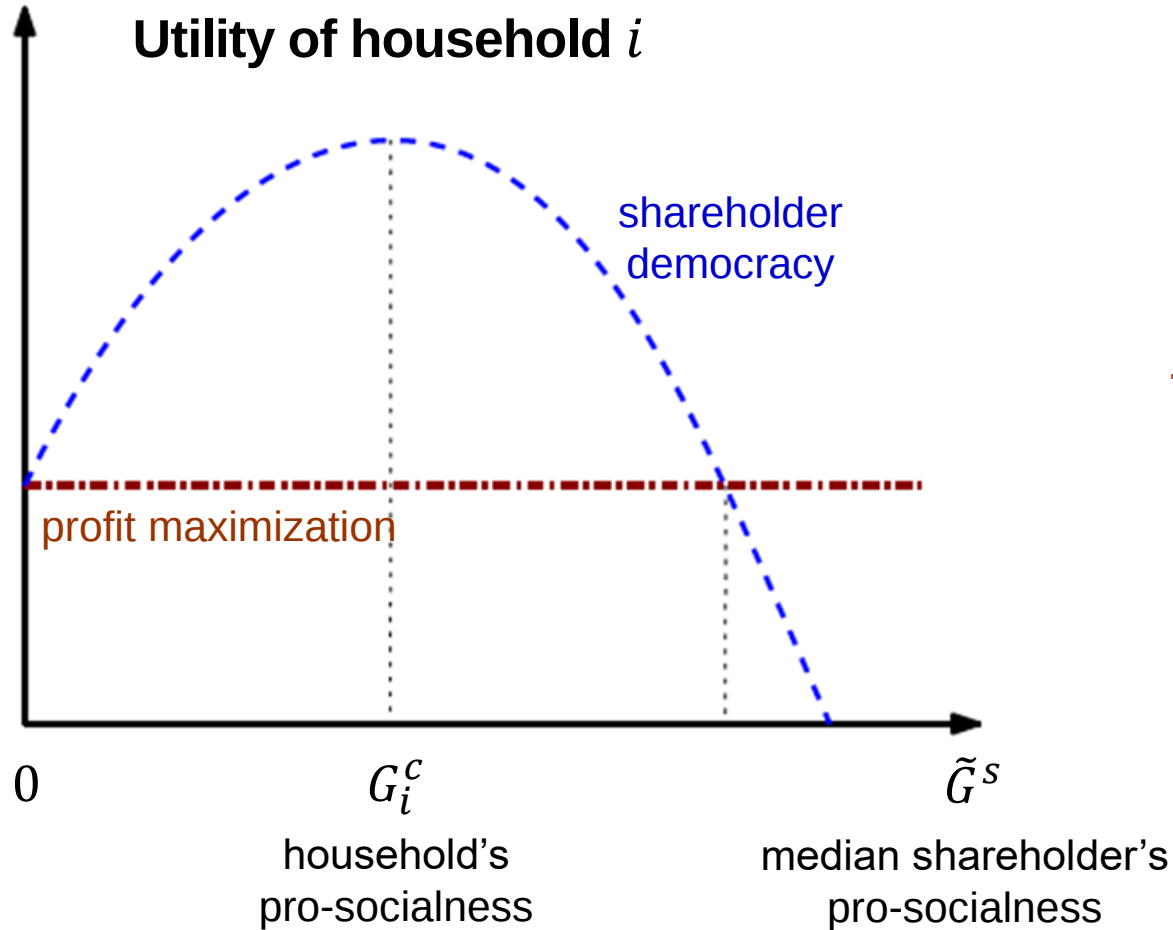
- Governance mandate is **irrelevant**
- Equilibrium X reflects median citizen's preferences only

With frictions ($\delta > 0$), shareholder democracy $\neq$ profit maximization

- **Intuition:** pro-social preferences of shareholders & subsidy are imperfect substitutes
- Equilibrium X reflects preferences of median citizen & median shareholder

↑
shaped by
wealthier households

Costs and benefits of shareholder democracy

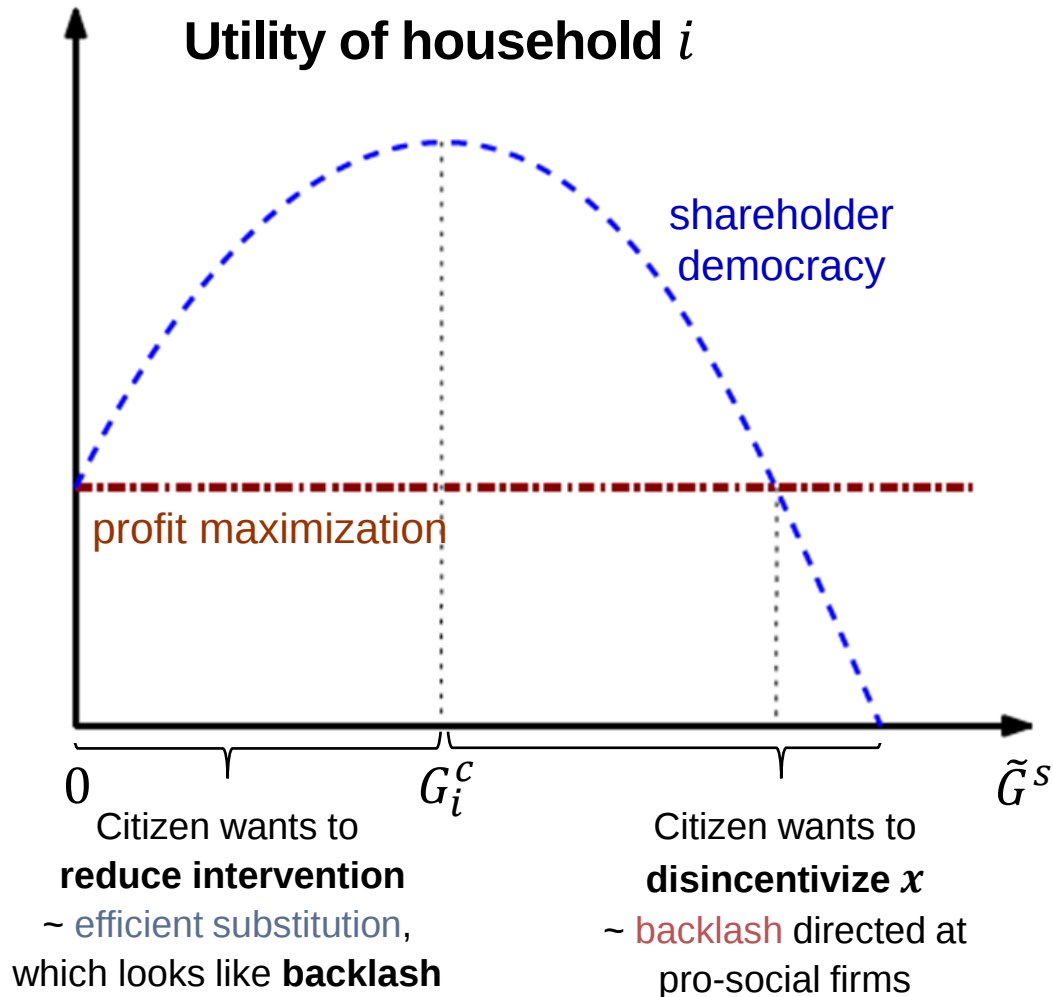


+ More public good with less deadweight loss

$$\tilde{G}^s \nearrow \Rightarrow \sigma^* \searrow \Rightarrow \text{deadweight loss} \searrow$$

- Pro-social shareholders **fill the void** of a dysfunctional **regulatory** system
- Too much public good if $G_i^c < MC(x)$
 - **Preference representation problem** if shareholders are too pro-social

Costs and benefits of shareholder democracy

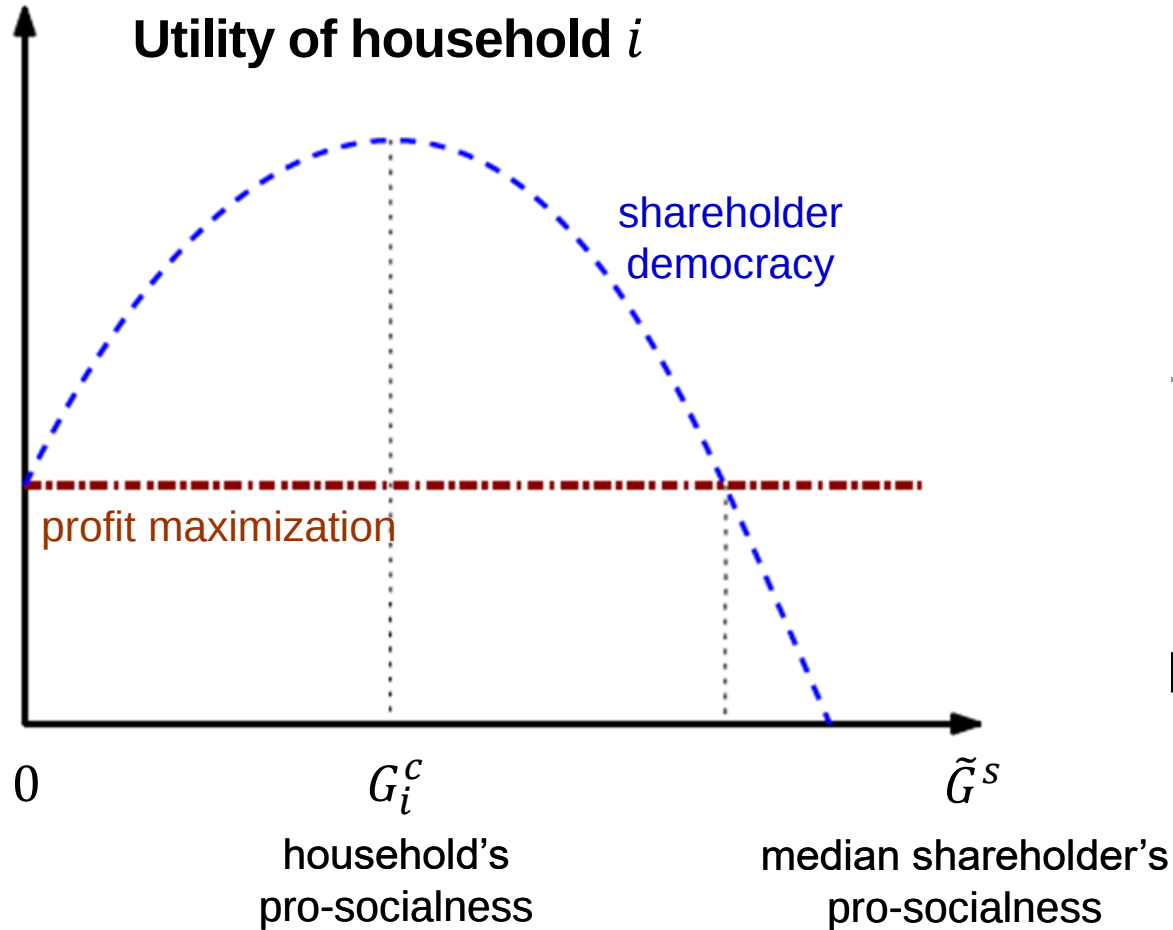


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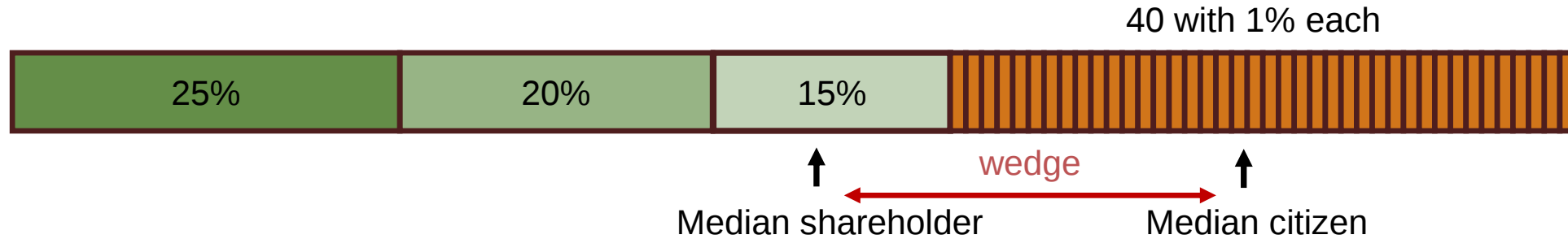
Extensions:

- Greenwashed shareholders (view y as **good**)
- “Ethical” shareholders (**distaste** for y)

Implications

The role of wealth inequality

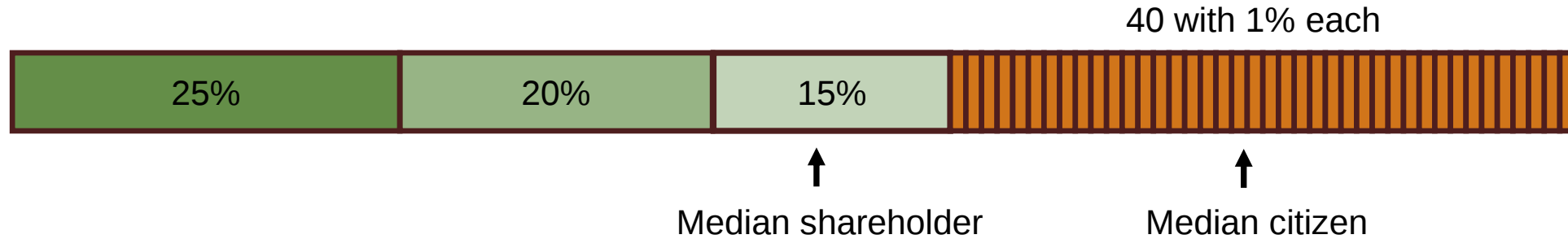
Wealth inequality $\Rightarrow$ **representation problem** (because of 1 share = 1 vote)



- Stronger if
 - low stock market participation
 - low voter turnout
 - dual-class share structures

The role of wealth inequality

Wealth inequality $\Rightarrow$ representation problem (because of 1 share = 1 vote)



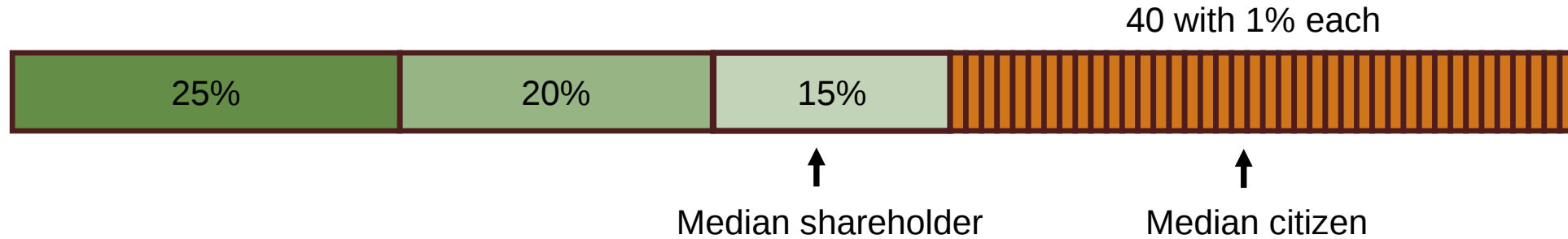
Representation problem only if wealthy are more pro-social (higher γ_i)

- e.g., if wealthy less exposed to negative GE effects
- ... or if ESG is a “luxury good”

$$G_i^s = \frac{\gamma_i}{\alpha_{ij}}$$

The role of wealth inequality

Wealth inequality $\Rightarrow$ **representation problem** (because of 1 share = 1 vote)



Representation problem only if wealthy are more pro-social (higher γ_i, g_i)

- e.g., if wealthy less exposed to negative GE effects
- ... or if ESG is a “luxury good”

$$G_i^s = \frac{\gamma_i}{\alpha_{ij}}$$

Counteracting force: large stake $\Rightarrow$ internalize costs more $\Rightarrow$ lower pro-socialness

As investor diversification increases...

- Households hold smaller stakes in each firm

⇒ Shareholder's pro-social preferences ↗

$$G_i^s = \frac{\gamma_i}{\alpha_{ij}}$$

Intuition: smaller stakes ⇒ shareholders internalize less of the costs in each firm

- Households' average stake in all firms remains unchanged

⇒ Citizen's pro-social preferences are unaffected by diversification

$$G_i^c = \frac{\gamma_i}{\bar{\alpha}_i}$$

Intuition: citizens internalize the costs for all firms in their portfolios

As investor diversification increases...

- Households hold **smaller stakes** in each firm

⇒ Shareholder's pro-social preferences ↗

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$$G_i^s = \frac{\gamma_i}{\alpha_{ij}}$$

- Households' **average stake** in all firms **remains unchanged**

⇒ Citizen's pro-social preferences are **unaffected by diversification**

Intuition: **citizens** internalize the costs for all firms in their portfolios

$$G_i^c = \frac{\gamma_i}{\bar{\alpha}_i}$$



- + More public good provision and less wasteful spending
- But can exacerbate representation problem & ESG backlash



Delegation vs. Pass-through voting

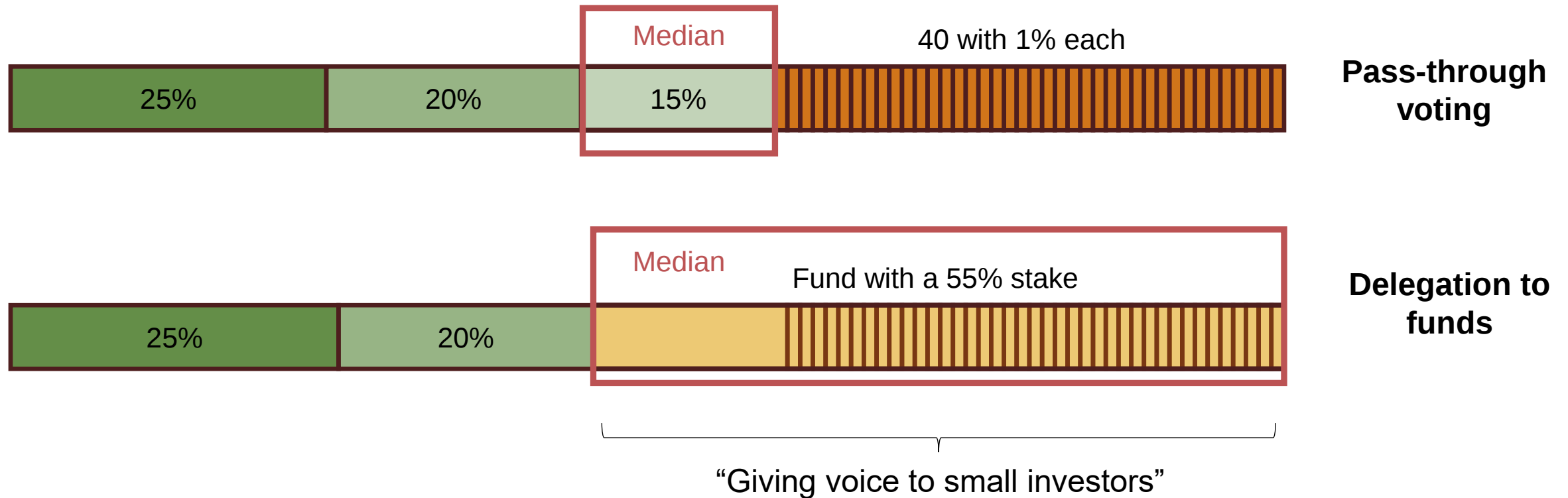
- Baseline model = households vote shares directly
- **But:** in reality, votes typically delegated to fund managers
- Concern that funds do not represent investors $\Rightarrow$ move to pass-through voting

Does pass-through voting reduce the representation problem?

- **Yes**, if fund managers put **large weight** on their **own pro-social preferences**
- **Counteracting effect:** delegation to funds increases small investors' power

Delegation vs. Pass-through voting

Delegation to funds can increase small investors' power:



Other implications

Investors sorting into firms

- “Green” firms get disproportionately more subsidies 
⇒ ↗ support for subsidies by green investors + ↘ support by brown investors
- Distributive motive for higher public good subsidies

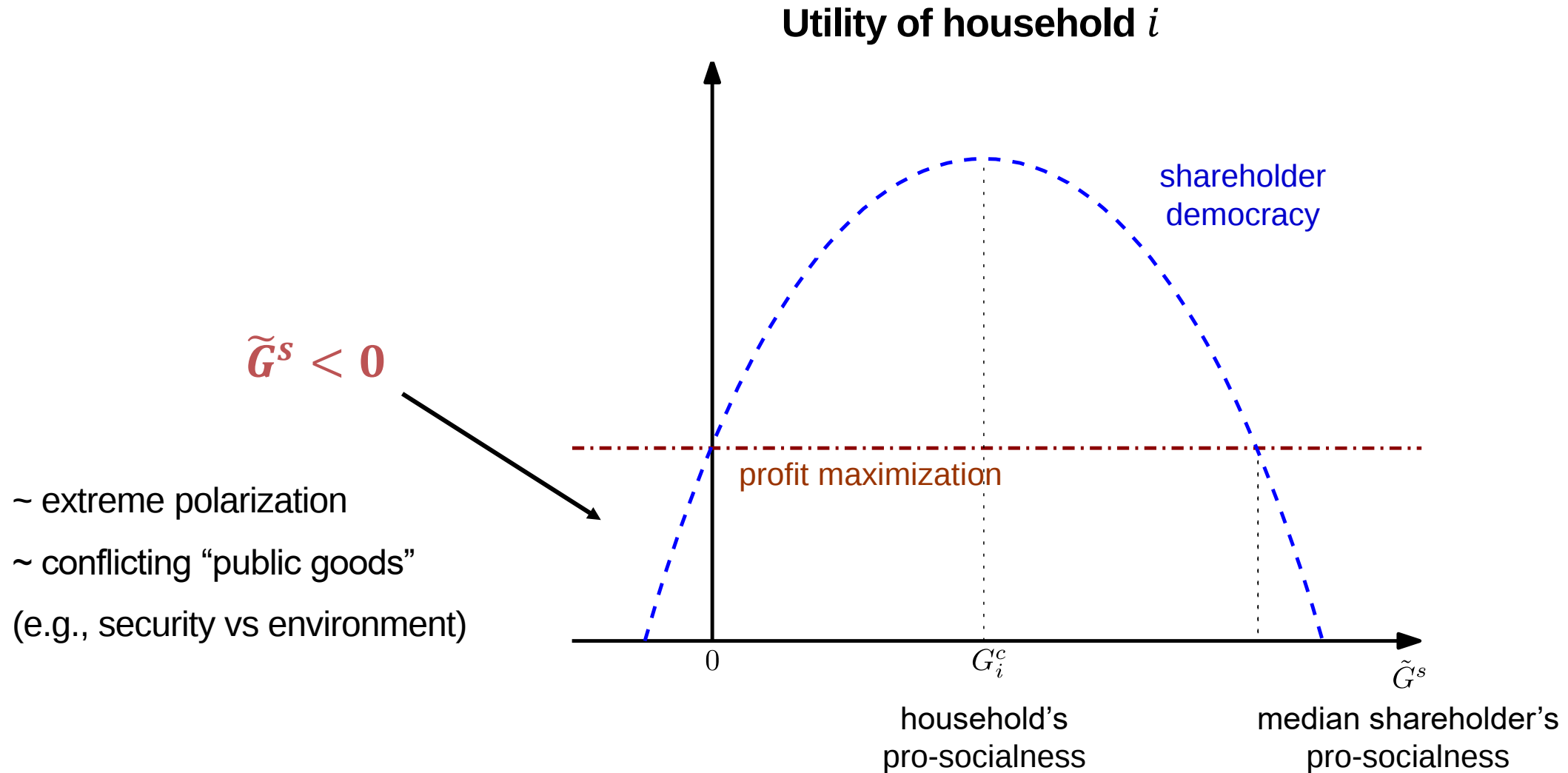
Distortions in the political process

- Political influence of the wealthy (“1 dollar-1 vote”)
⇒ worsens representation problem under both regimes
- Lobbying for special treatment ⇒ ↘ costly lobbying under shareholder democracy

Conclusion

- Interaction between **shareholder democracy** and **political democracy**
- Political system **responds** to shareholder democracy
 - lower costs of regulation (~ efficient substitution of imperfect policy)
 - but wealthy **overrepresented** (~ can trigger **ESG backlash**)
- This political response can shape the implications of shareholder democracy
 - wealth inequality
 - ownership structures
 - political frictions

Negative effective pro-socialness

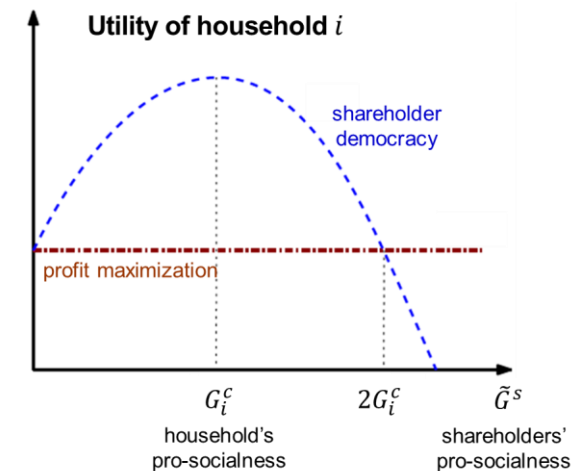


Analysis

Political influence of the wealthy

Suppose public policy implements **wealth-weighted median citizen's** preference

- e.g., campaign contributions $\Rightarrow$ 1-dollar-1-vote
- Public policy **responds less** to shareholder democracy:
 - $\rightarrow$ typical citizen would like to offset its effects, **but cannot**
- Worsens representation of less-wealthy (under both corporate governance regimes)
- Trade-offs of shareholder democracy relative to profit-maximization are the same (levels change)



Lobbying for special treatment

After subsidy σ is set, firms can lobby (at a cost) for a **higher firm-specific subsidy**

- Firms lobby more when government intervention is more aggressive (higher σ)
- Public policy responds with lower σ , but distortion persists $\Rightarrow$ lower profits & welfare
- Less lobbying under shareholder democracy than profit maximization
 - shareholders (esp. diversified) internalize tax burden

$\Rightarrow$ **Higher benefits of shareholder democracy** if firms can lobby

Shareholder and political elections

- Shareholder i maximizes

$$\max_{x_j, y_j} U_i = \sum_{j=1}^m \gamma_i x_j - \tau_i T + \sum_{j=1}^m [\Pi(x_j, y_j) + g_i x_j] \alpha_{ij}$$

$$\Phi'(x_j) \alpha_{ij} = \gamma_i + g_i \alpha_{ij} + \sigma(\alpha_{ij} - \tau_i)$$

$$\Rightarrow \Psi'(y_j) \alpha_{ij} = \sigma(\alpha_{ij} - \tau_i)$$

- Subsidy preferred by citizen i solves

$$\max_{\sigma} U_i = \sum_{j=1}^m \gamma_i x_j - \tau_i T + \sum_{j=1}^m [\Pi(x_j, y_j) + g_i x_j] \alpha_{ij}$$

Political elections and irrelevance

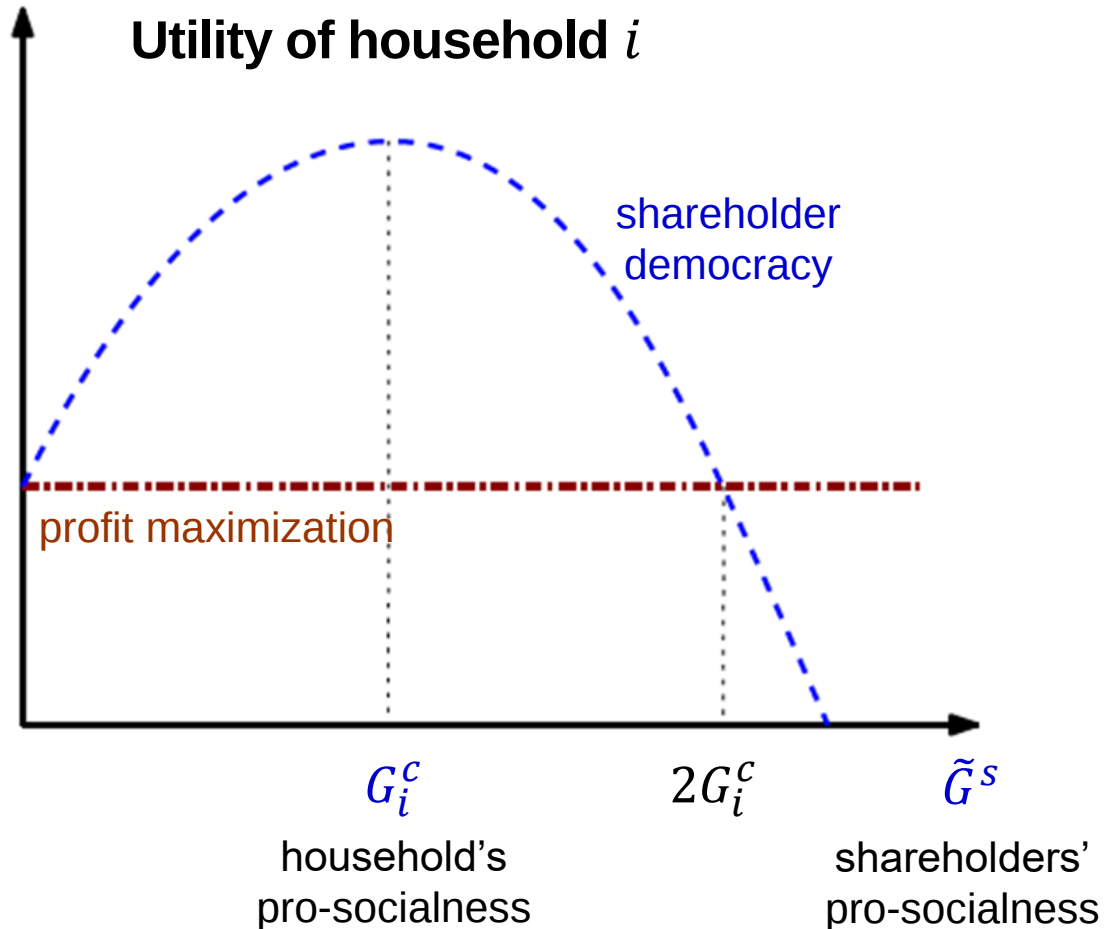
Subsidy preferred by citizen i solves $\max_{\sigma} U_i$ given firms' response $x(\sigma)$ and $y(\sigma)$

$$\underbrace{[m\gamma_i + \omega_i g_i - \omega_i \Phi'(x)]}_{\text{Net benefit of public good}} \frac{\partial x(\sigma)}{\partial \sigma} - \underbrace{[\omega_i \Psi'(y)]}_{\text{Cost of wasteful spending}} \frac{\partial y(\sigma)}{\partial \sigma} = 0$$

$$[G_i^c - \Phi'(x)] \frac{\partial x(\sigma)}{\partial \sigma} - [\Psi'(y)] \frac{\partial y(\sigma)}{\partial \sigma} = 0$$

$$[G_i^c - \phi x] \frac{\partial x(\sigma)}{\partial \sigma} - \left[\frac{\phi}{\delta} y \right] \frac{\partial y(\sigma)}{\partial \sigma} = 0$$

Costs and benefits of shareholder democracy



$$\sigma^p = \frac{\tilde{G}^c}{1+\delta}$$

$$\sigma^s = \frac{\tilde{G}^c - \tilde{G}^s}{(1+\delta)(1-\mu)}$$

$$x^p = \frac{\tilde{G}^c}{(1+\delta)\phi}$$

$$x^s = \frac{\tilde{G}^c + \delta\tilde{G}^s}{(1+\delta)\phi}$$

$$y^p = \frac{\delta\tilde{G}^c}{(1+\delta)\phi}$$

$$y^s = \frac{\delta(\tilde{G}^c - \tilde{G}^s)}{(1+\delta)\phi}$$

Equilibrium

Profit maximization

$$\sigma^p = \frac{\tilde{G}^c}{1 + \delta}$$

$$x^p = \frac{\tilde{G}^c}{(1 + \delta)\phi}$$

$$y^p = \frac{\delta \tilde{G}^c}{(1 + \delta)\phi}$$

Shareholder democracy

$$\sigma^s = \frac{\tilde{G}^c - \tilde{G}^s}{(1 + \delta)(1 - \mu)}$$

$$x^s = \frac{\tilde{G}^c + \delta \tilde{G}^s}{(1 + \delta)\phi}$$

$$y^s = \frac{\delta(\tilde{G}^c - \tilde{G}^s)}{(1 + \delta)\phi}$$

$$G_i^s = \frac{\gamma_i}{\omega_i/\mu m} + g_i$$

$$G_i^c = \frac{\gamma_i}{\omega_i/m} + g_i$$

ESG backlash and welfare

ESG backlash

$$\sigma^p - \sigma^s = \frac{\tilde{G}^c - \mu \tilde{G}^s}{(1 + \delta)(1 - \mu)}$$

$$G_i^s = \frac{\gamma_i}{\omega_i / \mu m} + g_i$$

$$G_i^c = \frac{\gamma_i}{\omega_i / m} + g_i$$

Utility of household i

$$U_i^{SD} - U_i^P = \frac{\delta \tilde{G}^s}{(1 + \delta)\phi} \left(G_i^c - \frac{1}{2} \tilde{G}^s \right)$$

Utilitarian social welfare

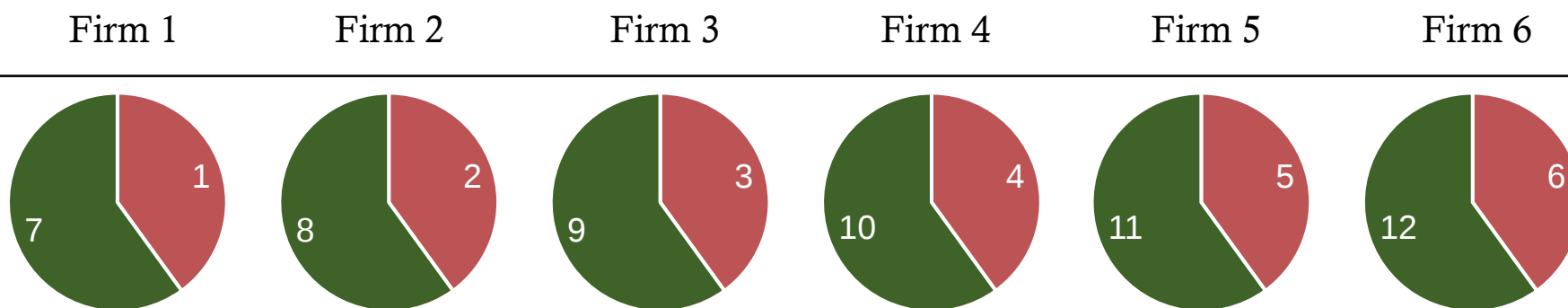
$$W^{SD} - W^P = \frac{m\delta \tilde{G}^s}{(1 + \delta)\phi} \left(\bar{\gamma} + \bar{g} - \frac{1}{2} \tilde{G}^s \right)$$

Ownership structures

6 firms, 12 households, 2 types: $\omega_i = 0.4$ and 0.6

1. Wealth inequality

Different wealth $\omega_i \Rightarrow$ heterogeneous ownership stakes



Ownership structures

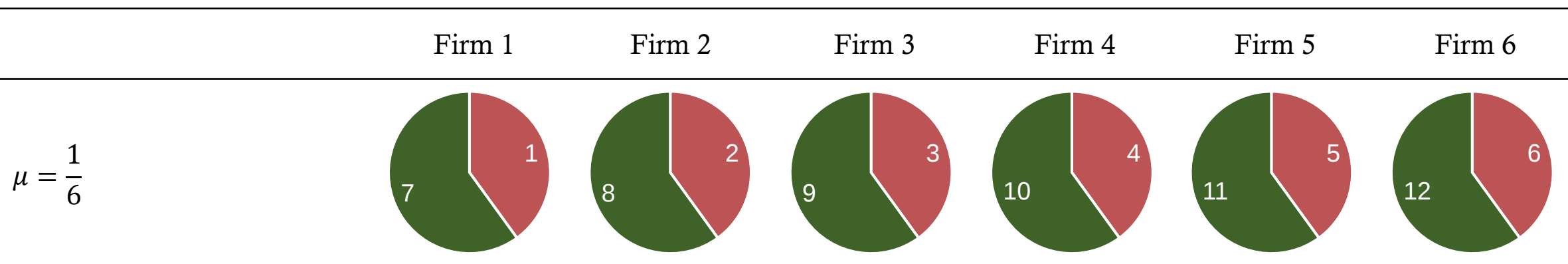
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2. Investor diversification

Each household's portfolio contains fraction μ of firms



Ownership structures

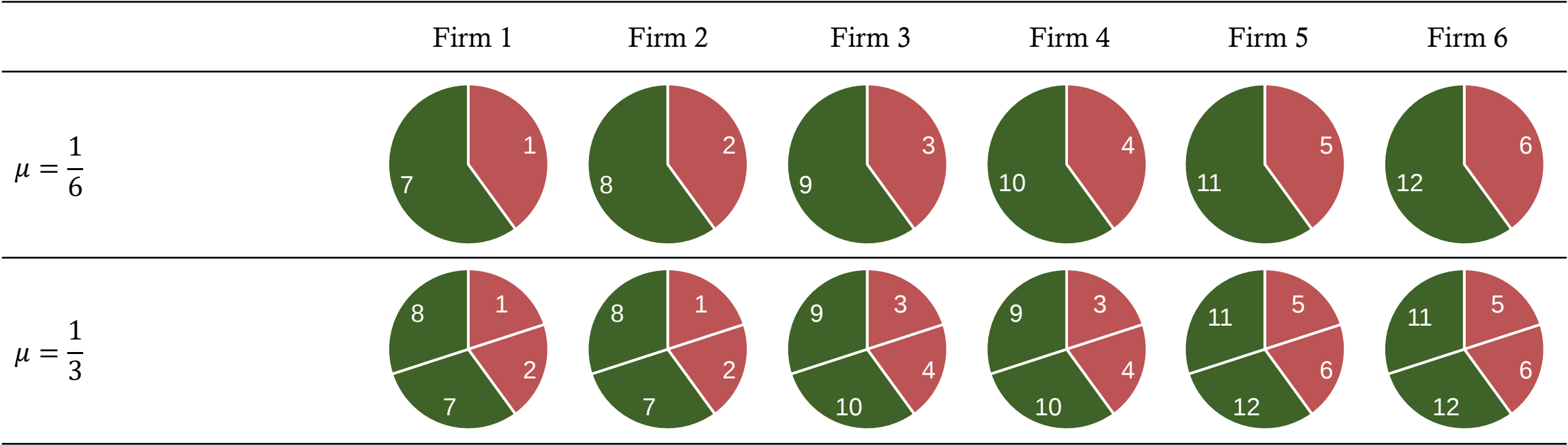
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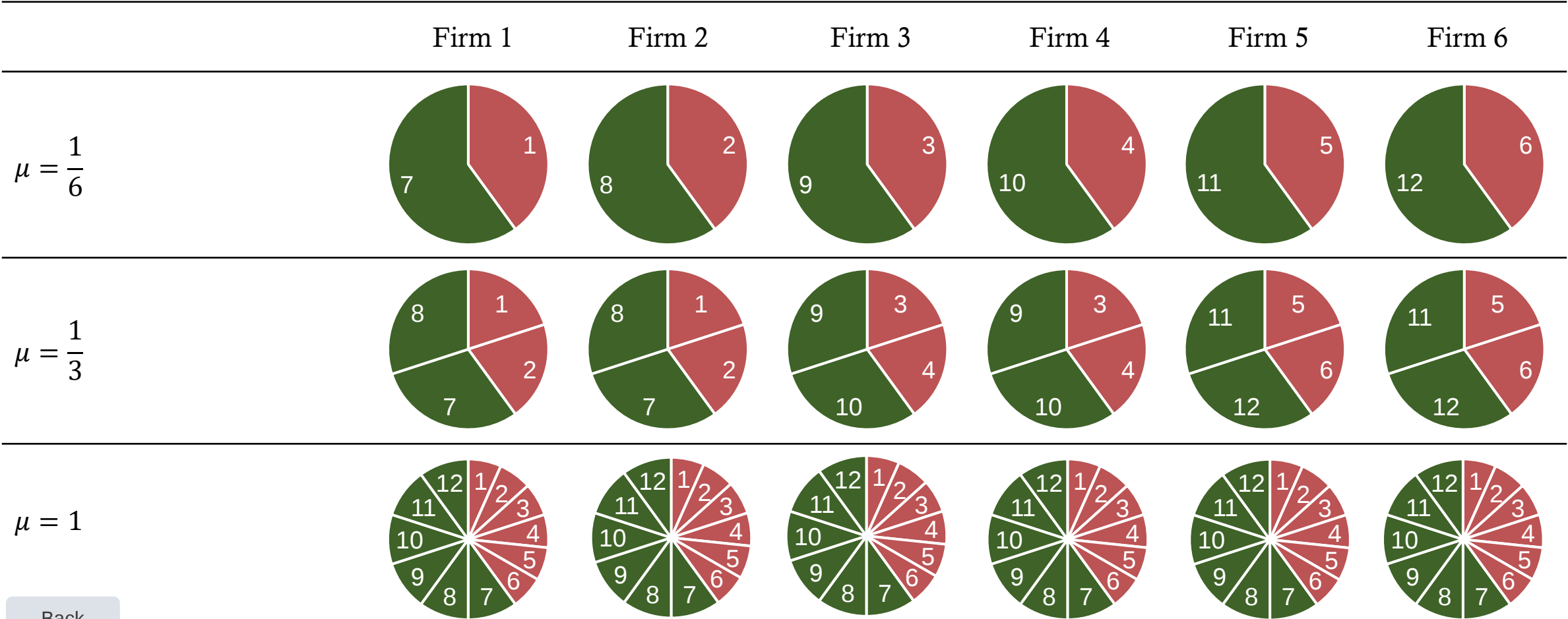
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Redistributive taxation

Non-redistributive taxes $\Rightarrow$ preferences over subsidy driven by its effects on (x, y)

- $\tau_i = \bar{\alpha}_i = \frac{\omega_i}{m} \Rightarrow$ share of taxes paid = share of subsidies received

Redistributive taxes $\Rightarrow$ also concerns about redistribution

- household supports higher subsidies if $\tau_i < \bar{\alpha}_i$
- e.g., **regressive**: τ_i increases less than one-for-one with wealth
 - $\Rightarrow$ **wealthy** face $\tau_i < \bar{\alpha}_i = \frac{\omega_i}{m} \Rightarrow$ support **higher** subsidies
 - $\Rightarrow$ **less wealthy** face $\tau_i > \bar{\alpha}_i = \frac{\omega_i}{m} \Rightarrow$ support **lower** subsidies

Stock market participation

Some households hold no shares

- $\omega_i = \bar{\alpha}_i = 0$
- **not represented** in shareholder voting
- Preferences for subsidies are shaped by:
 1. Don't internalize the costs through ownership $\Rightarrow$ want higher X and subsidies
 2. May internalize the costs through taxes
 - $\Rightarrow$ prefer low σ (and low X) if **taxes are regressive**

Universal owners

Limit case: each citizen holds every (including private) firm in the economy ($\mu = 1$)

- Shareholders fully internalize the tax burden and do not react to subsidies
- Citizens cannot undo the effects of shareholder democracy

$$x = \frac{\tilde{G}^s}{\phi}; \quad y = 0$$

- Higher public good provision and no wasteful spending
- Potentially stronger representation problem, which requires other tools to counteract (e.g., quantity-based regulations; restrictions on universal owners' voting power)

First-best in equilibrium

Social planner: $\Phi'(x^{FB}) = \sum_{i=1}^n \gamma_i + \sum_{i=1}^n \alpha_{ij} g_i = n\bar{\gamma} + \bar{g} \equiv \tilde{G}^{SP}$

First-best is achieved:

Profit maximization

- Only if $\delta = 0$; requires $\tilde{G}^c = \tilde{G}^{SP}$

Shareholder democracy

1. If $\delta = 0$, $\mu < 1$ and $\tilde{G}^c = \tilde{G}^{SP}$
2. For **any** δ if $\tilde{G}^s = \tilde{G}^{SP}$ and either (1) $\mu = 1$ or (2) $\tilde{G}^c = \tilde{G}^s$

Other extensions

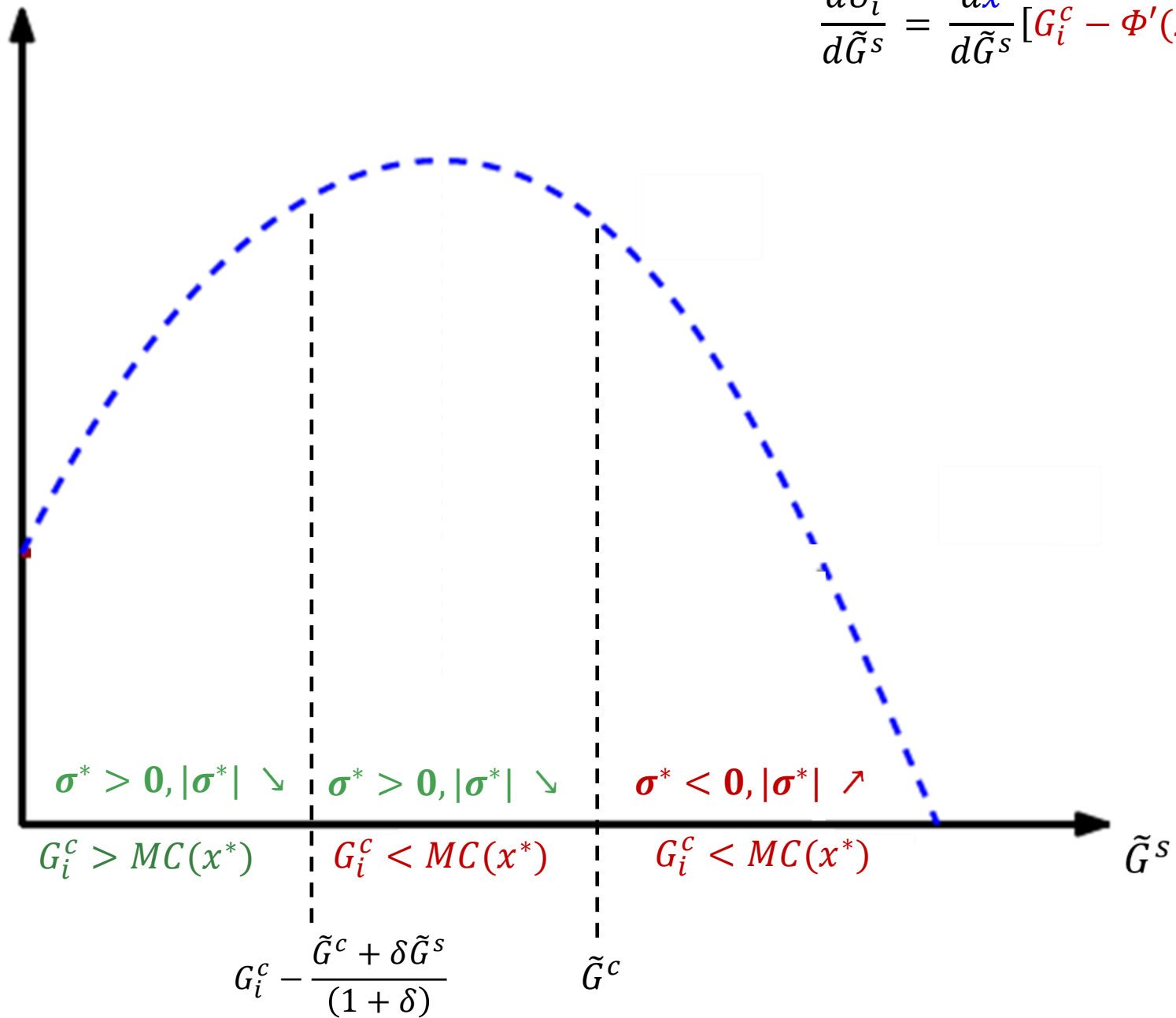
Partially internalized warm glow

- shareholder democracy is more likely to hurt a typical citizen

Limit cases

- In the limit of $m \rightarrow \infty$, $G_i^S = \frac{\gamma_i}{\omega_i/m\mu} + g_i$ becomes infinitely large
 - Marginal benefit γ_i stays constant; marginal cost $\rightarrow 0$
- Suppose, instead, the economy has constant size:
 - all households and firms have mass $\frac{1}{m} \Rightarrow X = \frac{1}{m} \sum_{j=1}^m x_j \Rightarrow G_i^S = \mu \frac{\gamma_i}{\omega_i} + g_i$
 - e.g., undiversified, $\mu = \frac{1}{m} \rightarrow 0 \Rightarrow$ strong free-rider problem, $G_i^S = g_i$

$$\frac{dU_i}{d\tilde{G}^s} = \frac{dx}{d\tilde{G}^s} [G_i^c - \Phi'(x)] \omega_i - \frac{dy}{d\tilde{G}^s} \Psi'(y) \omega_i$$



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