Wealth Inequality and the Political Economy of Financial and Labour Regulations

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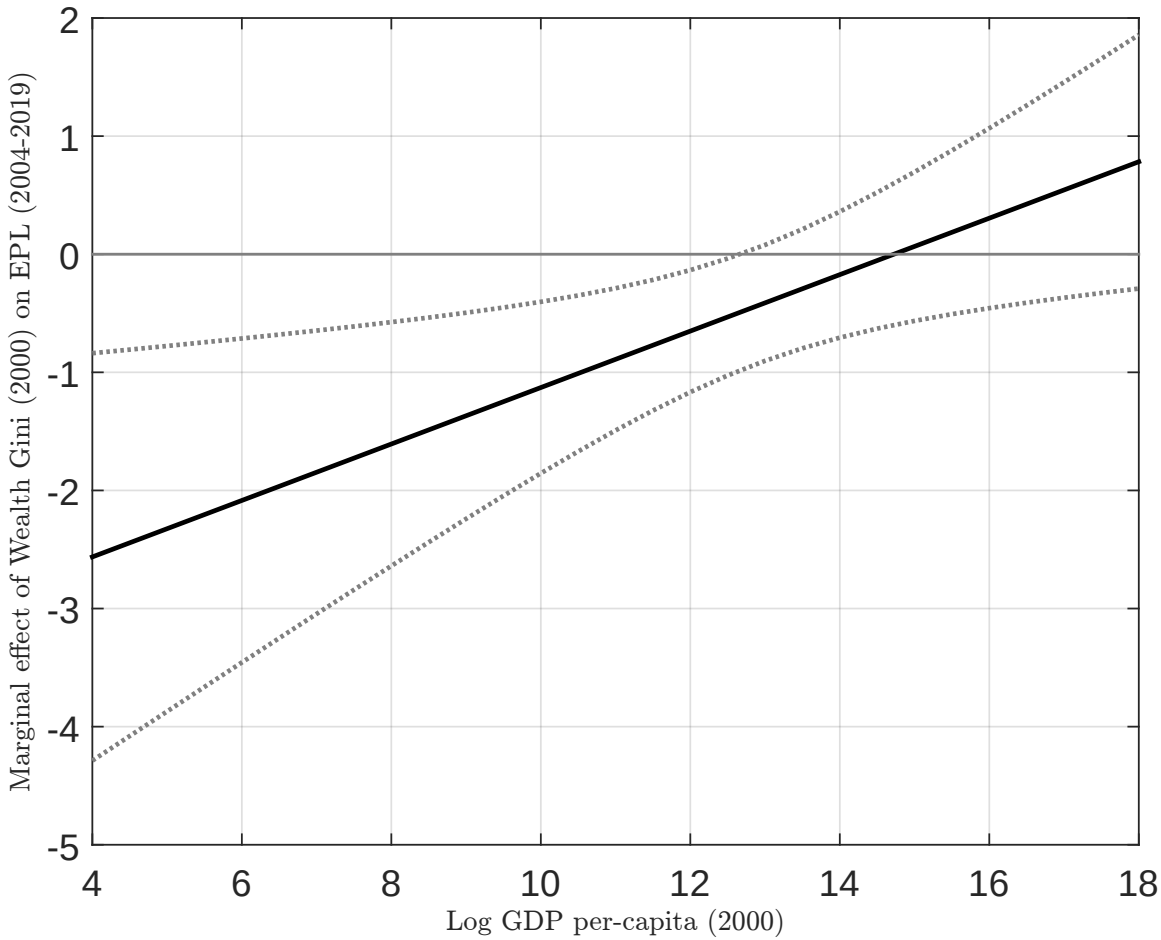
     This paper:

   - Theory of the interplay of wealth inequality and financial and labor regulations.

Conditional Correlation between Inequality and Regulations

$$EPL_{2004-2019} = \alpha_0 + \alpha_1 Gini_{2000} + \alpha_2 Gini_{2000} \times \log(GDP_{2000}) + \alpha_3 X + \varepsilon$$

Table



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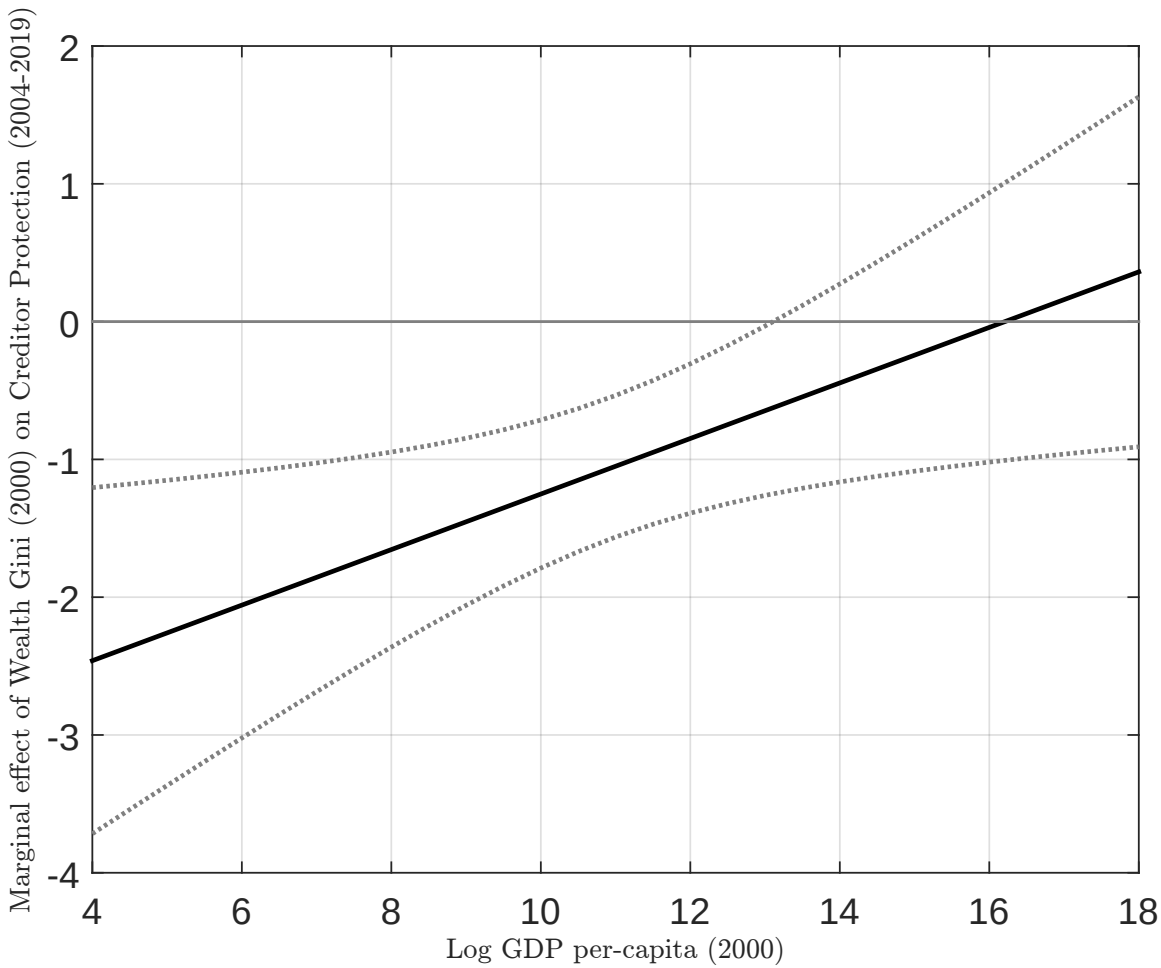
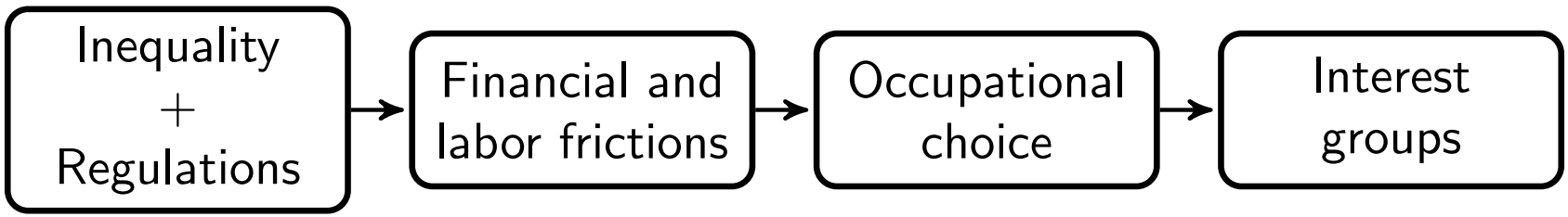


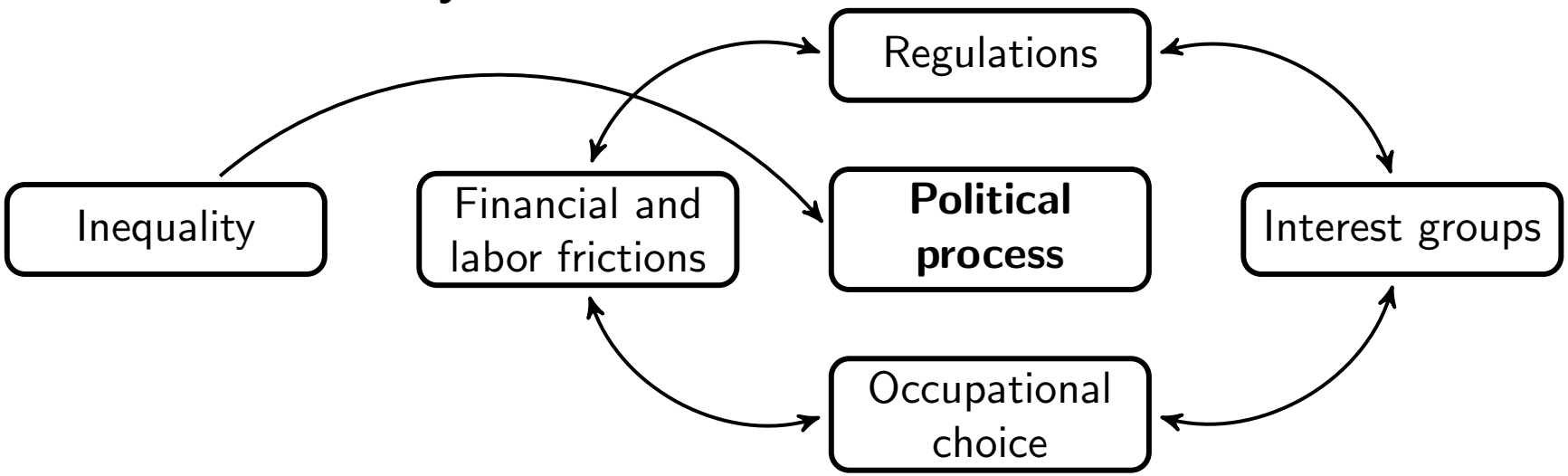
Overview

1. The Background Model



Overview

2. Political Economy Model



Laws result from the political process, however, which in turn responds to economic interests. Legal rules and economic outcomes are **jointly** *determined, politics being the link between them.* (Pagano and Volpin, AER, 2005).

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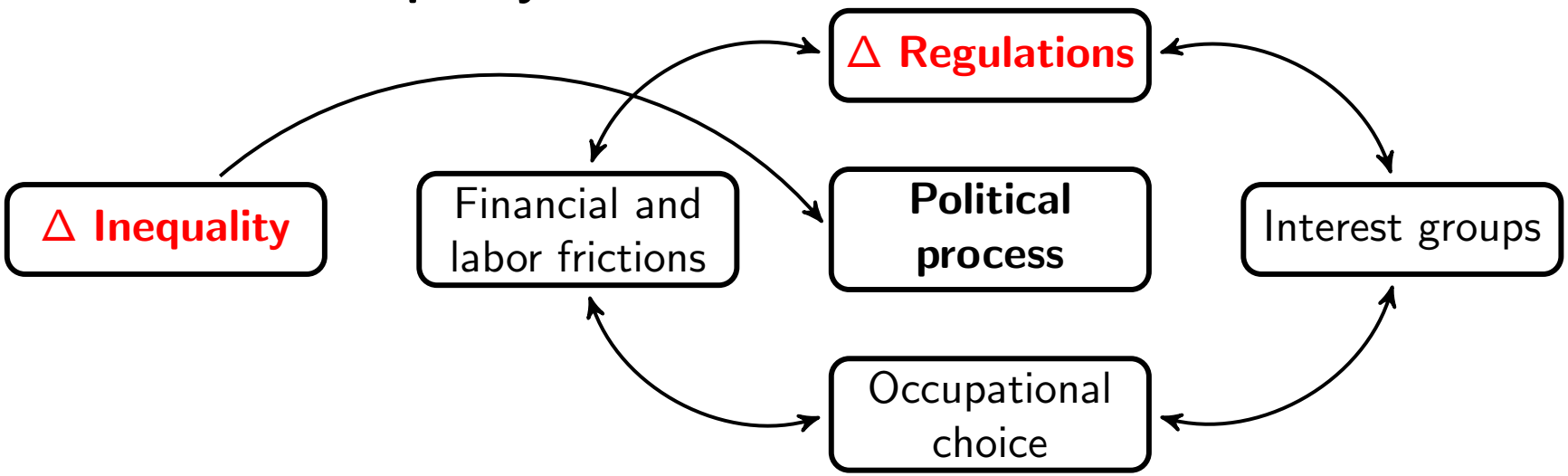
3. Increase of Inequality



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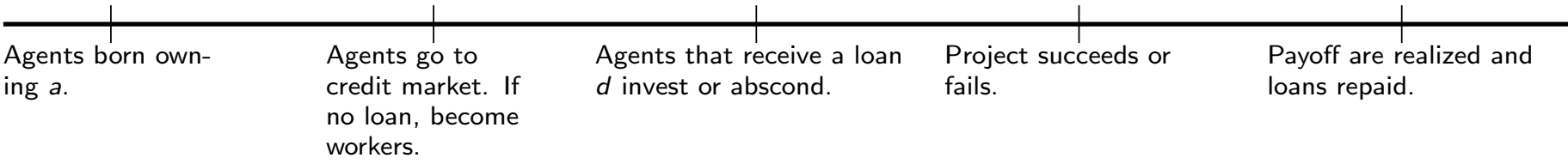
The Model

- One good with production function $f(k, l) = k^{\alpha} l^{\beta}, \alpha + \beta < 1$.
- Agents born with wealth $a \sim G(a)$ and 'an idea', 'a project'.
- Continuous density $g(a)$ with $\operatorname{supp} g(a) = \mathbb{R}_+$.
- Policy variables:
  - Creditor protection: $1 - \phi \in [0, 1]$.
  - Employment protection: $\theta \in [0, 1]$.

Figure: Time line.



The Model

- Agents will endogenously classify into:

  1. Workers

  $U^w = (1+\rho)a + pwl^s + (1-p)\theta wl^s - \varsigma(l)$

  where: $\varsigma' > 0, \varsigma'' > 0, \varsigma''' \geq 0$ with $\varsigma(0) = 0, \varsigma(+\infty) = \infty$

  2. Entrepreneurs

$$\max_{d,l}\{U^e \equiv p[f(\underbrace{(a+d)}_{\equiv k}, l) - (1+r)d - wl - F]\}$$

$$\text{s.t.} \quad U^e \geq \phi k \quad \text{(IC)}$$

$$U^e \geq U^w \quad \text{(PC)}$$

- Exogenous competitive **banking system**:

  $U^b = p(1+r)d + \max\{(1-p)(\eta k - \theta wl), 0\} - (1+\rho)d,$

Equilibrium

Banks' decisions: debt contracts

1. Interest rates: $(1+r) = \frac{1+\rho}{p} - \frac{1}{pd}(1-p)[\eta k - \theta w l]$. Then:

$$U^e = pf(k,l) + (1-p)\eta k - (1+\rho)d - (p+(1-p)\theta)wl - F$$

Efficient scale:

$$pf_k(k^*, l^*) = 1 + \rho - (1-p)\eta$$
$$pf_l(k^*, l^*) = (p+(1-p)\theta)w$$

2. Minimum wealth to get a loan ($\underline{a}$):

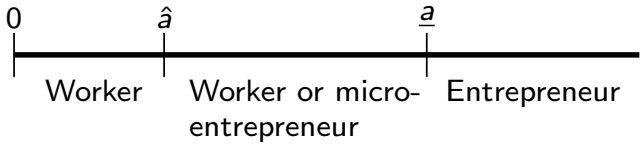
$$\min_{a\geq 0}\max_{d\geq 0} \Psi(a,d,l) \geq 0 \Leftrightarrow \begin{cases} \Psi(\underline{a},\underline{d},\underline{l}) & = 0, \\ \Psi_d(\underline{a},\underline{d},\underline{l}) & = 0, \\ \partial U^e(\underline{a},\underline{d},\underline{l})/\partial l & = 0. \end{cases}$$

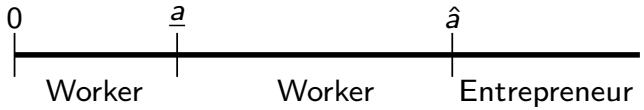
where $\Psi \equiv U^e - \phi k$. Graph

3. Minimum wealth $\bar{a}$ to reach a loan to attain k^*: $\Psi(\bar{a}, k^* - \bar{a}, l^*) = 0$.
4. Maximum allowable loan d: $\Psi(a, d, l(a+d)) = 0$. Graph

Occupational choice and equilibrium wage

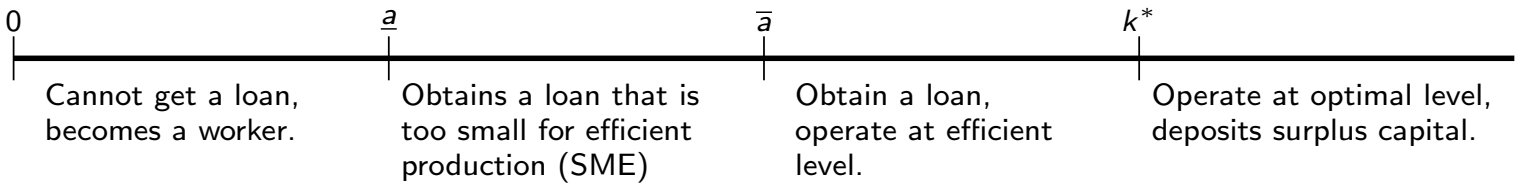
- The first agent that prefers to form a firm instead of becoming a worker ($\hat{a}$) is: $\hat{a} = \inf_{\{a\}}\{U^e(a, d(a), l(a)) - U^w(a) \geq 0\}$





- Worker's decision (l^s): $(p + (1-p)\theta)w = \varsigma'(l^s)$

Figure: Occupational choice.



- Labor market equilibrium:

$$l^s \cdot G(\underline{a}) = \int_{\underline{a}}^{\overline{a}} l \partial G(a) + l^*(1 - G(\overline{a}))$$

Some Micro and Macro predictions

Micro

1. SMEs are more financially constrained than large firms (Beck and Demirguc-Kunt, 2006).
2. The return to capital of SMEs is higher than in larger firms (Beck and Demirgüç-Kunt, 2008).
3. Small firms' employment is more variable than in larger firms when facing general and idiosyncratic shocks (Brock and Evans, 1989).
4. Smallest firms are the ones that benefit the most from financial development (Beck et al., 2005).

Macro

1. Financial development increases total output, GDP, investment, credit penetration and financial inclusion (Djankov et al., 2007).
2. Higher inequality in poor countries leads to higher output and debt, while this effect is the opposite in rich countries (Fischer et al., 2019; Brueckner and Lederman, 2018; Galor and Zeira, 1993).

Interest Groups

Table: Political preferences

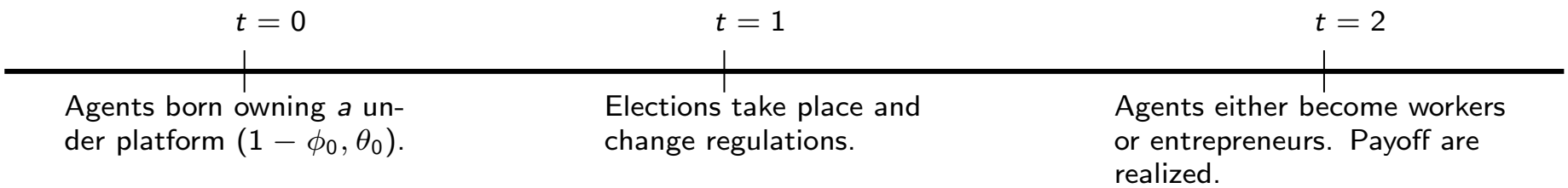
Type of agent	Effect of $1-\phi$ on utility	Effect of θ on utility
Workers (W); $a \in [0, \underline{a})$	+	+
Small entrepreneurs (S): $a \in [\underline{a}, a_\phi)$	+	-
Medium-Large entrepreneurs (L); $a \geq a_\phi$	-	-

- Theories for opposition to improvements in finance regulation: Rajan and Zingales (2003); La Porta et al. (2000).
- Labor regulation responds to the pressure of labor unions: Botero et al. (2004).
- This paper: the factor channel for the differing interests among groups is through the interaction of labor and financial frictions.

Political Economy with Endogenous Interest Groups

- The base political framework comes from Persson and Tabellini (2000).
  - Two parties A (right-wing) and B (left-wing) propose a policy platform $q_i \equiv (1-\phi, \theta) \in [1-\overline{\phi}, 1-\underline{\phi}] \times [\underline{\theta}, \overline{\theta}], i = \{A, B\}$.
  - They act simultaneously and are rent-seeking.
  - Probabilistic and proportional voting.
  - Uncertainty about voters' preferences (to avoid cycling problems).
- Additional features:
  - Endogenous interest groups (ranges and demographic weights).
  - Within-groups heterogeneity.

Figure: Time line.



The Setup

- There is a continuum of agents (a, ν), with ν the idiosyncratic political preference.
- Voter (a, ν) votes for A if:

$$U^j(a, q_A) > U^j(a, q_B) + \tilde{\delta} + \sigma^j_\nu(a), j \in \{W, S, L\}$$

where:

  - $\tilde{\delta} \sim U[-1/2\varphi, 1/2\varphi]$ reflects the general popularity of party B.
  - $\sigma^j_\nu(a) = \bar{\sigma}^j + \tilde{\epsilon}^j_\nu(a)$ represents the ideological preference for party B of a voter (a, ν), with $\tilde{\epsilon}^j_\nu(a) \sim U[-1/2\chi, 1/2\chi]$. Assume:

$$\bar{\sigma}^L = -\bar{\sigma} < \bar{\sigma}^S = 0 < \bar{\sigma}^W = \bar{\sigma}.$$

- The voter $\nu = V$ who is indifferent between the two parties is ('swing voter'):

$$\tilde{\epsilon}^j_V(a) = U^j(a, q_B) - U^j(a, q_A) - \tilde{\delta} - \bar{\sigma}^j.$$

The Political Equilibrium

- The fraction of agents in group j with a and vote for party A is:

$$\tilde{p}_A^j(a) = Prob\left[\epsilon \leq \tilde{\epsilon}_V^j(a)\right] = \chi[U^j(a, q_B) - U^j(a, q_A) - \tilde{\delta} - \bar{\sigma}^j] + \frac{1}{2}.$$

- The probability that party A wins the election is:

$$p_A = \text{Prob}\left[\int_0^{\underline{a}} \tilde{p}_A^W(a)\partial G(a) + \int_{\underline{a}}^{a_\phi} \tilde{p}_A^S(a)\partial G(a) + \int_{a_\phi}^{\overline{a}} \tilde{p}_A^L(a)\partial G(a) + \int_{\overline{a}}^{+\infty} \tilde{p}_A^L(a)\partial G(a) \geq \frac{1}{2}\right],$$

- Maximizing $p_A \Leftrightarrow$ maximizing the politically weighed surplus:

$$\max_{q_A=(\phi,\theta)} \overline{U}(q_A) \equiv \int_0^{\underline{a}} U^w(a, q_A)\partial G(a) + \int_{\underline{a}}^{a_\phi} U^e(a, q_A)\partial G(a) + \int_{a_\phi}^{\overline{a}} U^e(a, q_A)\partial G(a) + \int_{\overline{a}}^{+\infty} U^e(a, q_A)\partial G(a).$$

$$s.t \quad \phi, \theta \in [1 - \overline{\phi}, 1 - \underline{\phi}] \times [\underline{\theta}, \overline{\theta}]$$

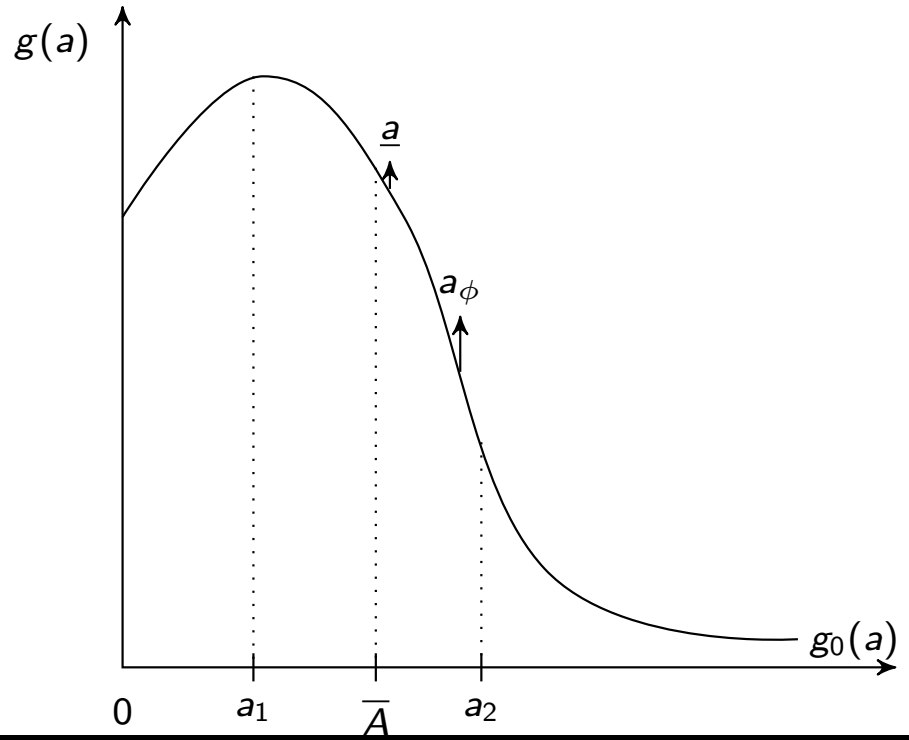
Lemma

If $\overline{\phi} < \frac{(1+r^*)(1-\alpha-\beta)}{\alpha\left(2+\frac{1}{\beta}\right)+\frac{2(1-\beta)}{\min\{1,\beta(1+r^*)\}}}$, *there exists a political equilibrium* $(1-\phi, \theta)$.

Wealth Inequality and the Political Equilibrium

Proposition

Consider a country 1 with an initial wealth distribution with mean $\overline{A}$. Assume we perturb the distribution by an MPS, and call it country 2.
i) If $\underline{a} > \overline{A}$, then $1 - \phi_1 \geq 1 - \phi_2$ and $\theta_1 \geq \theta_2$, ii) If $\overline{a} < \overline{A}$, the equilibrium platform shifts in the opposite direction.



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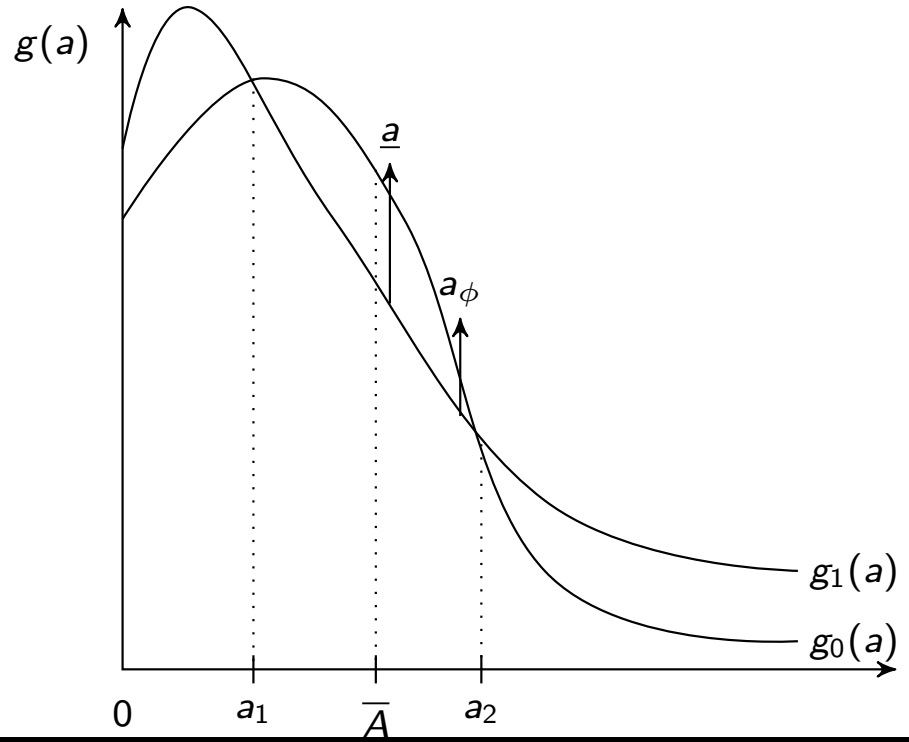

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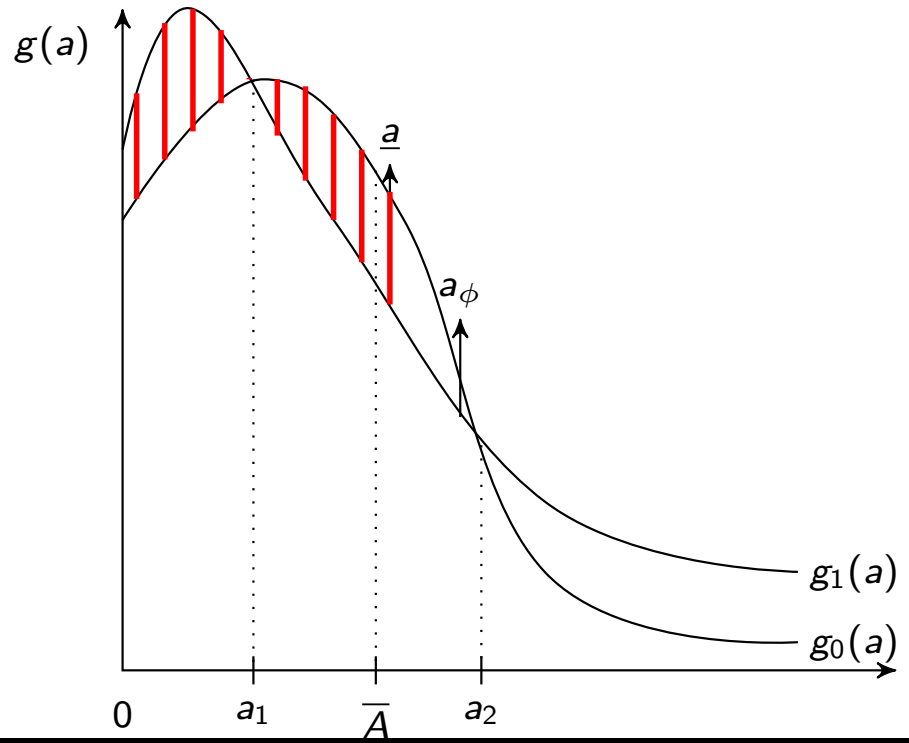

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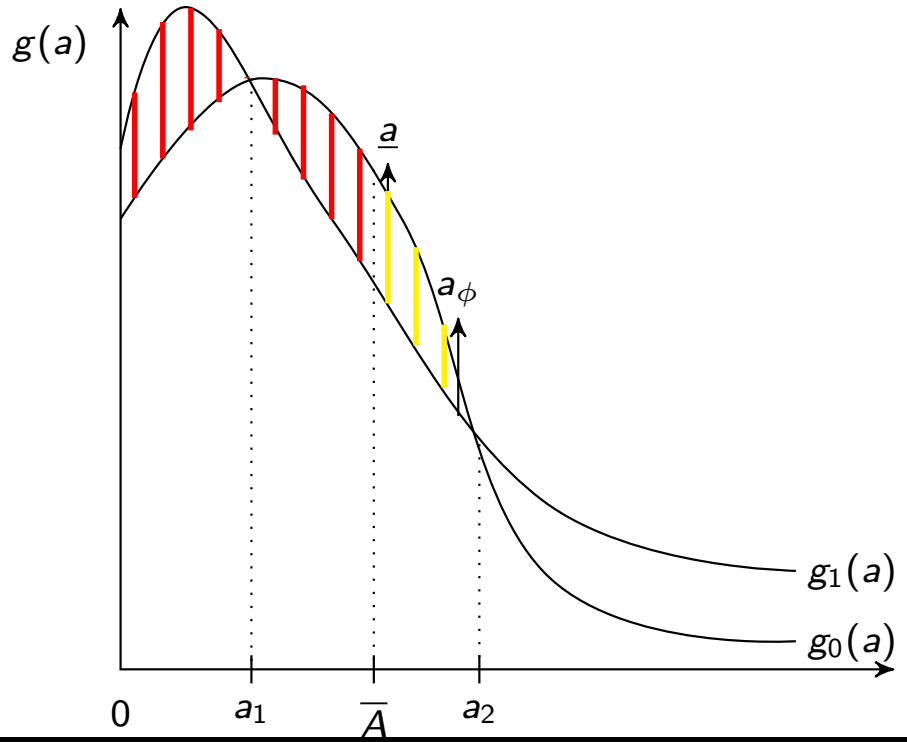

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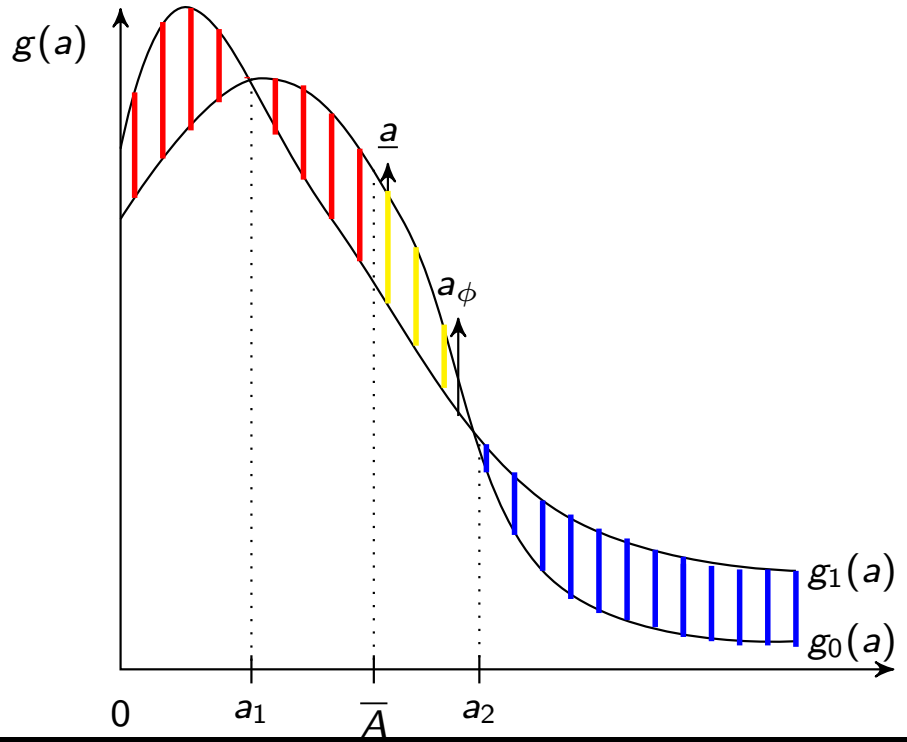

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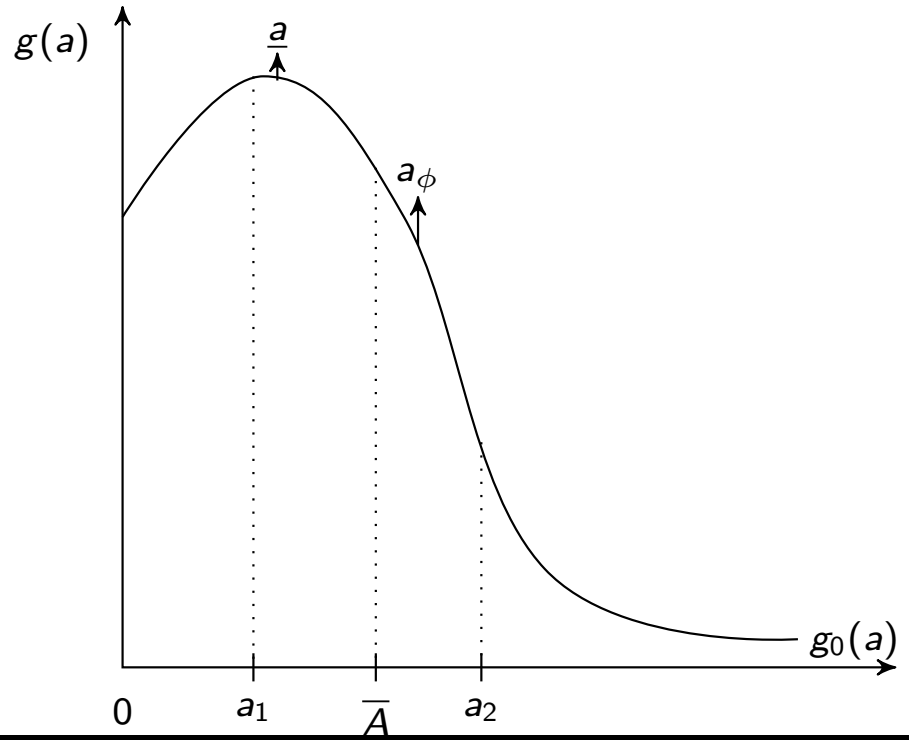

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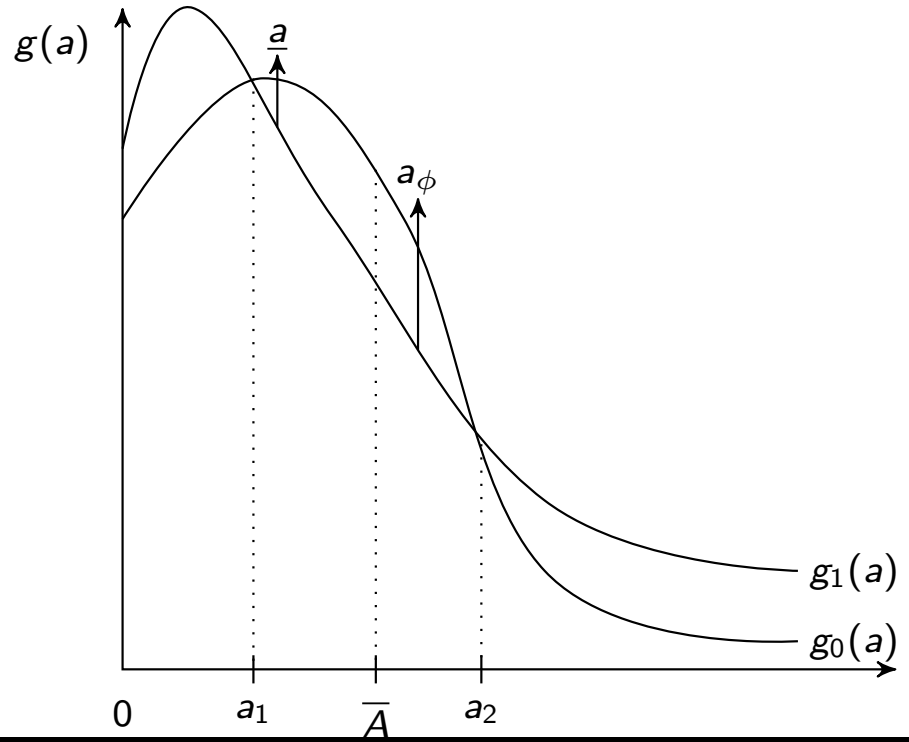

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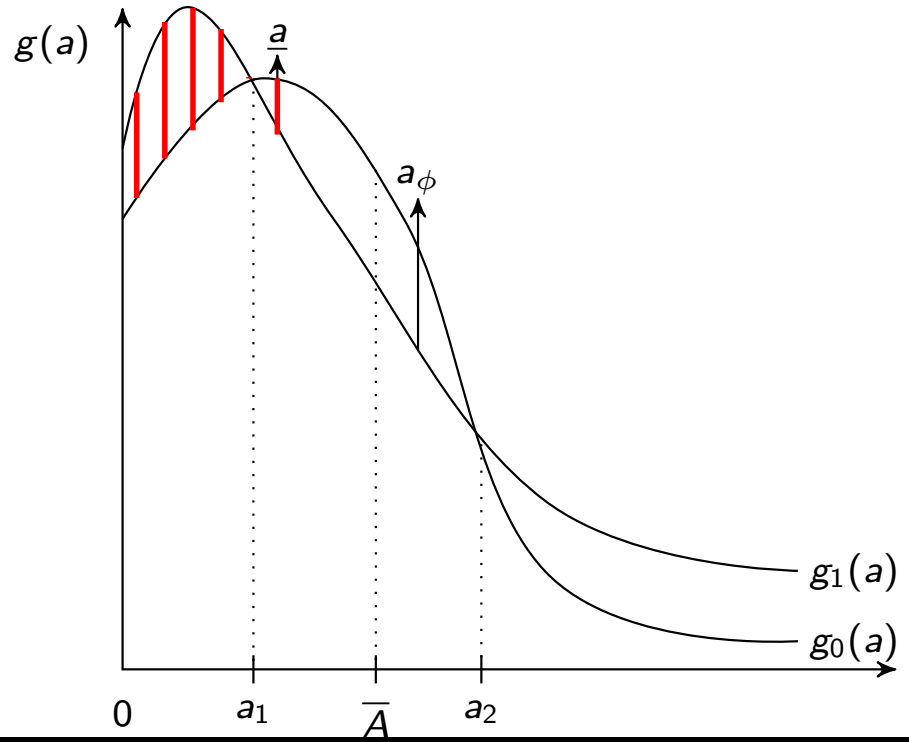

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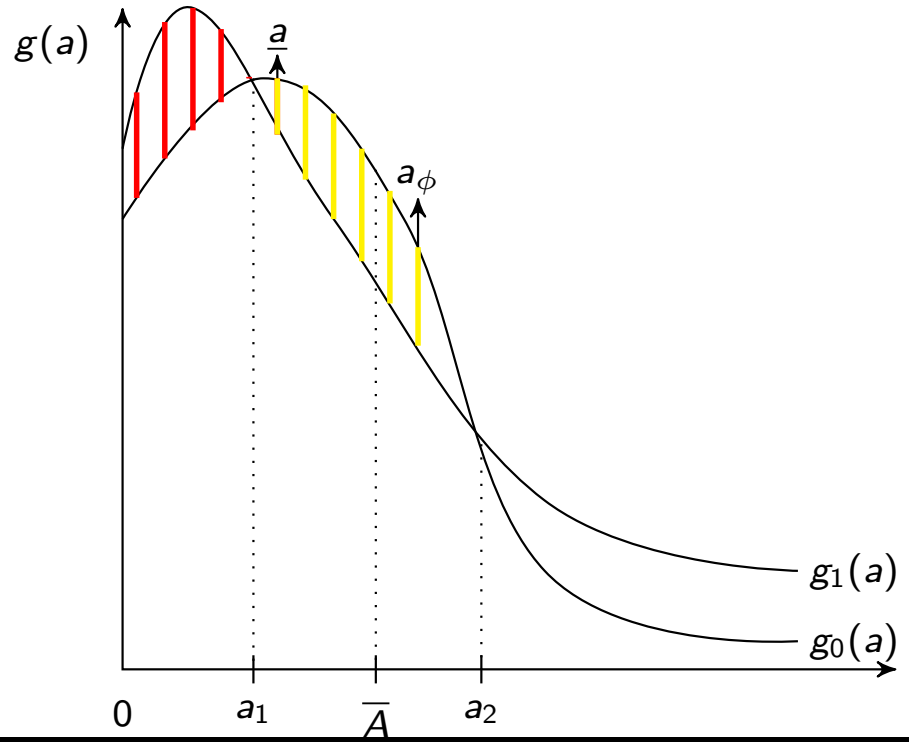

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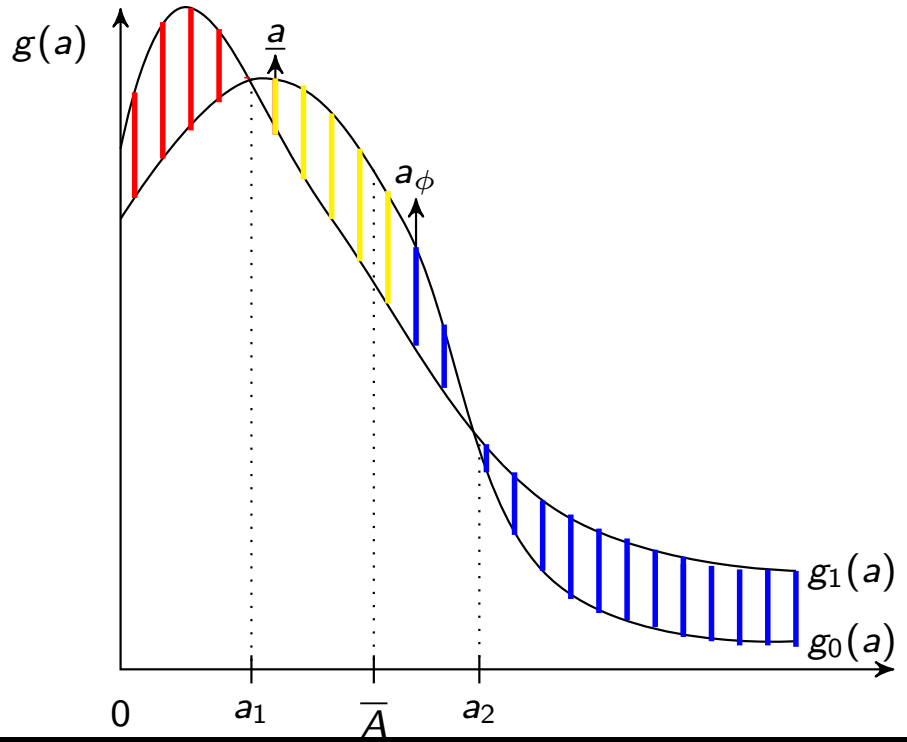

Conclusion

This paper

- Novel Result: Higher wealth inequality in poor countries leads to worse creditor and labor protection, the opposite in rich countries.
- Wealth inequality and wealth scarcity are factors that favour the influence of economically powerful groups on the political process.

  Additional contributions:

  1. Political setup where interest groups arise endogenously as consequence of regulations.
  2. Pure effect of inequality on regulations through general MPSs, no specific functional forms (e.g. Chong and Gradstein, 2007).
  3. New directions for the empirical study of the causal link between wealth inequality and regulations.

Working progress...

- Not studied here: conflicts between workers attached to different firms.

  1. Test labor interest groups theory and underlying mechanisms.
  2. Theory for the political economy of optimal labor policy design.

Table: Wealth Inequality and the Strength of Regulations.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Loan Recovery Rate (%)				*Employment Protection Law (%)*			
Log GDP per capita (2000's)	-14.07**	0.800	-10.63*	-14.14**	-17.50***	-14.84**	-18.13**	-17.34***
	(6.902)	(8.498)	(6.094)	(5.808)	(6.436)	(5.603)	(6.922)	(6.464)
Wealth Gini (2000's)	-3.528***	-1.224	-2.779***	-3.267***	-3.512***	-3.171***	-3.665***	-3.519***
	(1.185)	(1.331)	(1.027)	(0.949)	(1.176)	(1.091)	(1.308)	(1.227)
Wealth Gini (2000's) x Log GDP per capita (2000's)	0.190*	-0.00483	0.152*	0.202**	0.241**	0.208**	0.250**	0.239**
	(0.0992)	(0.120)	(0.0866)	(0.0833)	(0.0933)	(0.0829)	(0.0985)	(0.0934)
English Legal Origin	14.73***		15.16***	17.46***	-14.74***		-14.65***	-14.84***
	(4.506)		(4.474)	(4.106)	(3.710)		(3.968)	(3.709)
German Legal Origin	45.04***		32.69***	30.52***	5.600		6.735	5.528
	(5.495)		(5.954)	(5.316)	(3.480)		(4.774)	(4.282)
Scandinavian Legal Origin	54.88***		39.50***	36.38***	1.840		3.317	2.167
	(3.862)		(4.805)	(4.152)	(5.299)		(7.734)	(6.593)
Ethnic Fractionalization		-27.15***	-13.32*	-16.09**		-2.521	3.352	3.323
		(7.723)	(7.159)	(6.832)		(9.243)	(10.23)	(9.773)
Democracy			16.79***				-1.677	
			(5.177)				(4.818)	
Electoral Democracy Index				32.94***				2.875
				(6.979)				(6.821)
Constant	285.2***	129.5	223.2***	248.1***	309.5***	280.4***	320.2***	306.6***
	(82.44)	(94.64)	(73.26)	(66.78)	(81.65)	(74.00)	(91.35)	(82.67)
Observations	146	143	131	136	67	67	65	67
R-squared	0.363	0.195	0.488	0.540	0.336	0.161	0.332	0.339

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Standard errors are clustered by country.

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Figure: Ψ as a function of d for different levels of a ($a'' > \underline{a} > a'$).

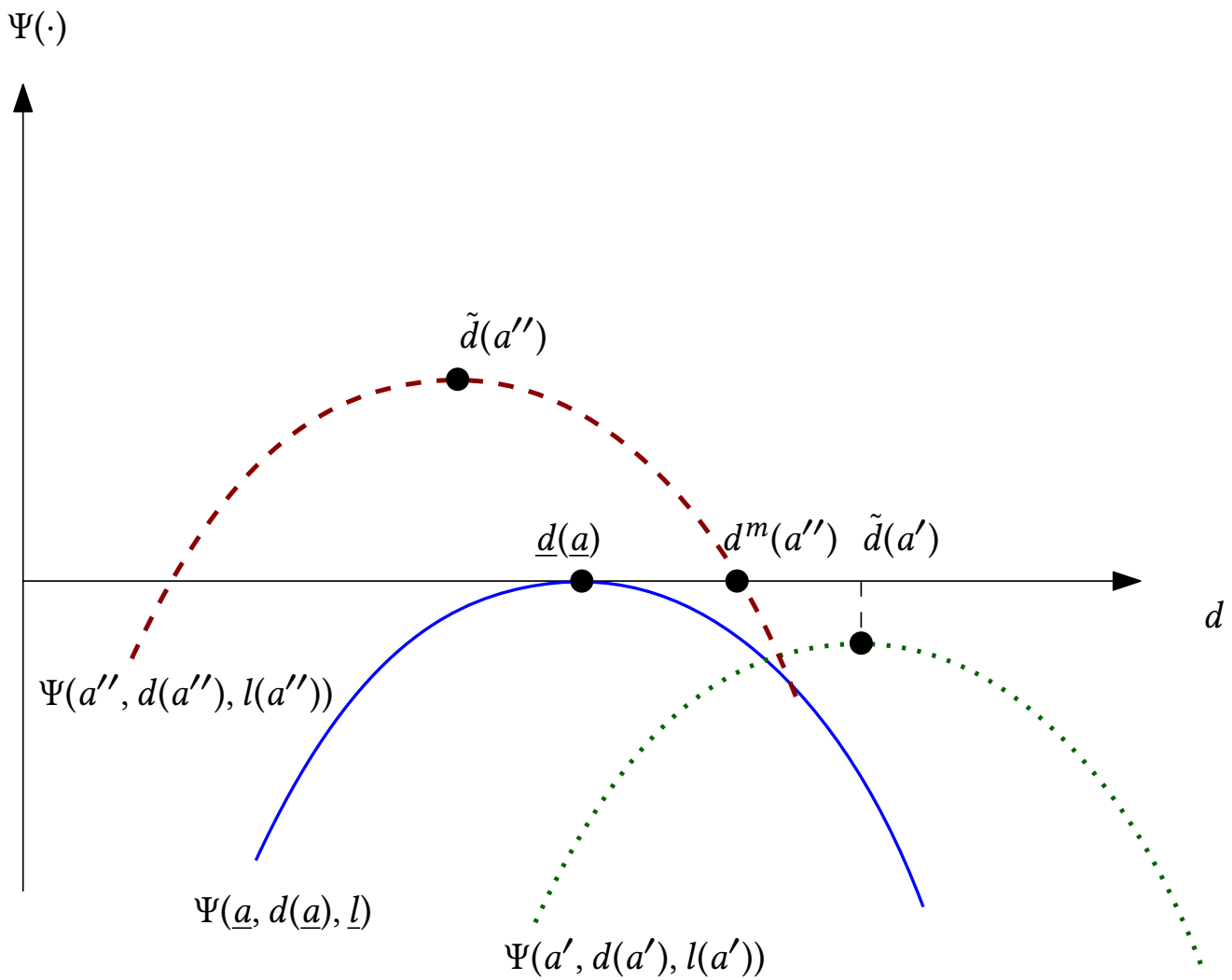

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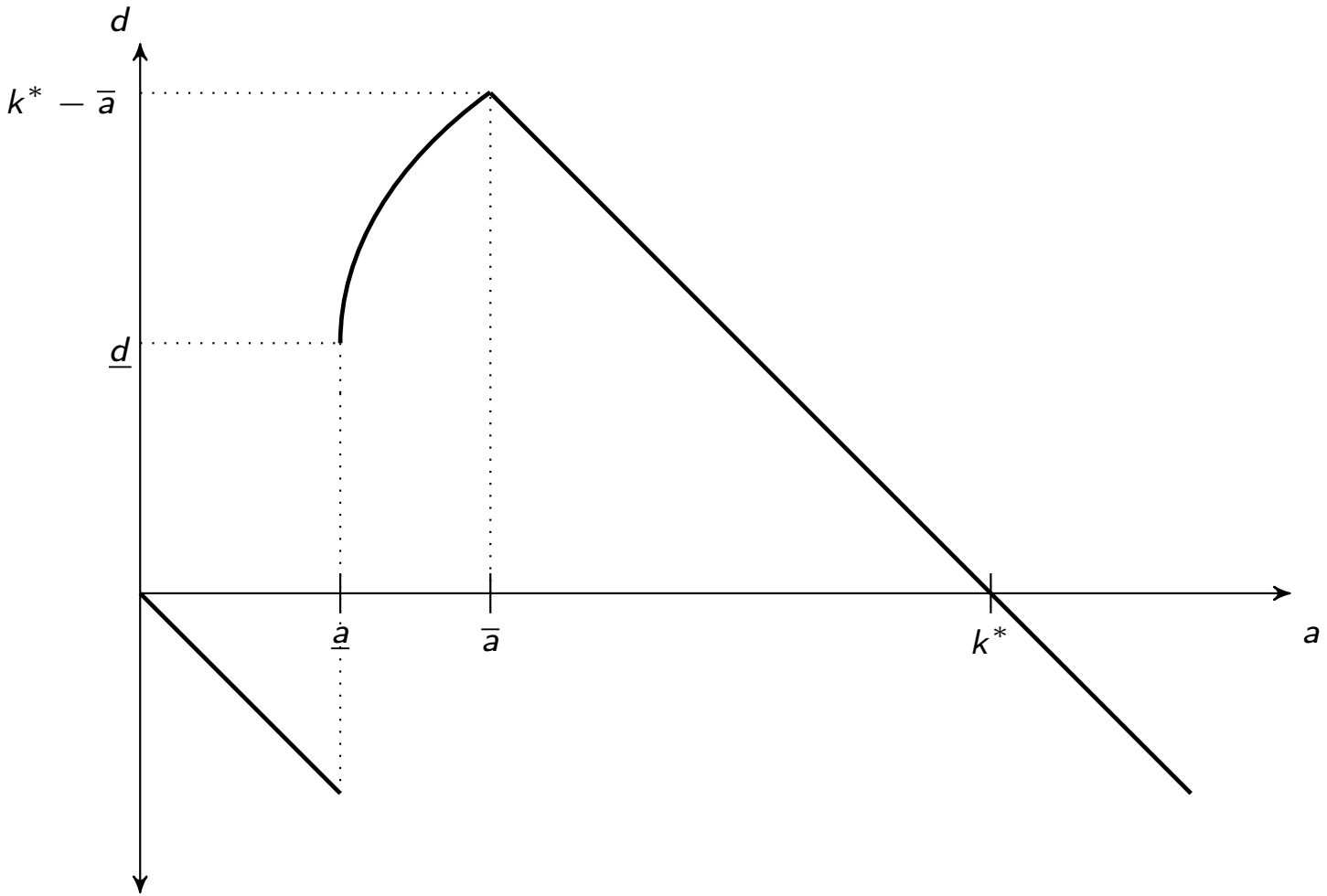
Figure: Effective loan curve.



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