The Political Economy of Prudential Regulation

Magdalena Rola-Janicka

Tilburg University

Political Economy Matters

Democratic senators call for tougher capital requirements for US banks

Sherrod Brown and Elizabeth Warren warn Fed it would be 'grave error' to extend pandemic relief

FT.com, 03.03.2021

Biden Fed Pick Pits Powell Against Liberal Push for Regulation

By Steven T. Dennis and Saleha Mohsin

bloomberg.com, 03.08.2021

Political Economy Matters

Democratic senators call for tougher capital requirements for US banks

Sherrod Brown and Elizabeth Warren warn Fed it would be 'grave error' to extend pandemic relief

FT.com, 03.03.2021

Biden Fed Pick Pits Powell Against Liberal Push for Regulation

By Steven T. Dennis and Saleha Mohsin

bloomberg.com, 03.08.2021

- Evidence: politicians respond to interest groups when
 - designing (Igan & Mishra, 2014; Mian et al. 2010)
 - and enforcing financial regulation (Lambert, 2018)

• Theoretical research:

- Theoretical research:
 - Why do we need it? (Lorenzoni, 2008; Davila & Korinek 2016)

- Theoretical research:
 - Why do we need it? (Lorenzoni, 2008; Davila & Korinek 2016)
 - How to optimally design it? (Bianchi & Mendoza, 2011; Gersbach & Rochet, 2012, 2017; Jeanne & Korinek, 2018, 2020)

- Theoretical research:
 - Why do we need it? (Lorenzoni, 2008; Davila & Korinek 2016)
 - How to optimally design it? (Bianchi & Mendoza, 2011; Gersbach & Rochet, 2012, 2017; Jeanne & Korinek, 2018, 2020)

• Gap: How is it affected by political economy factors?

 \rightarrow this paper

Model prudential regulation as

• motivated by borrowing externalities (Jeanne & Korinek, 2013)

Model prudential regulation as

- motivated by borrowing externalities (Jeanne & Korinek, 2013)
- \bullet implemented by an elected politician \rightarrow novel focus

Model prudential regulation as

- motivated by borrowing externalities (Jeanne & Korinek, 2013)
- \bullet implemented by an elected politician \rightarrow novel focus

Key features of the environment:

Model prudential regulation as

- motivated by borrowing externalities (Jeanne & Korinek, 2013)
- \bullet implemented by an elected politician \rightarrow novel focus

Key features of the environment:

• income inequality

Model prudential regulation as

- motivated by borrowing externalities (Jeanne & Korinek, 2013)
- \bullet implemented by an elected politician \rightarrow novel focus

Key features of the environment:

- income inequality
- regulatory capture

Model prudential regulation as

- motivated by borrowing externalities (Jeanne & Korinek, 2013)
- \bullet implemented by an elected politician \rightarrow novel focus

Key features of the environment:

- income inequality
- regulatory capture

Questions: Policy preferences? Strictness & efficiency of regulation?

- Income inequality: prudential regulation is re-distributive
 - \Rightarrow politics matters

- Income inequality: prudential regulation is re-distributive
 - \Rightarrow politics matters

High-income borrowers prefer laxer regulation
 <u>Intuition</u>: partially benefit from a "crisis" by buying capital cheaply

- Income inequality: prudential regulation is re-distributive
 - \Rightarrow politics matters

High-income borrowers prefer laxer regulation
 <u>Intuition:</u> partially benefit from a "crisis" by buying capital cheaply

Regulatory capture: policy preferences reversed
 <u>Intuition:</u> capture → heterogeneous costs & lower benefit of policy

Model: Borrowing Externality

• 3 dates; consumption good and capital

- 3 dates; consumption good and capital
- Borrowers: $u^{b}(c) = \log(c_{0}^{b}) + \log(c_{1}^{b}) + c_{2}^{b}$

- 3 dates; consumption good and capital
- Borrowers: $u^{b}(c) = \log(c_{0}^{b}) + \log(c_{1}^{b}) + c_{2}^{b}$

endowed with income (y^b) & capital (k_1^b) at t = 1

- 3 dates; consumption good and capital
- Borrowers: $u^{b}(c) = \log(c_{0}^{b}) + \log(c_{1}^{b}) + c_{2}^{b}$

endowed with income (y^b) & capital (k_1^b) at $t = 1 \rightarrow \frac{2 \text{ types: } b \in \{p, r\},}{y^r > y^p, k_1^r > k_1^p}$

- 3 dates; consumption good and capital
- Borrowers: $u^b(c) = \log(c_0^b) + \log(c_1^b) + c_2^b$

endowed with income (y^b) & capital (k_1^b) at $t = 1 \rightarrow \frac{2 \text{ types: } b \in \{p, r\},}{y^r > y^p, \ k_1^r \ge k_1^p}$ production at t = 2: $f(k_2^b) = k_2^b$

5

- 3 dates; consumption good and capital
- Borrowers: $u^{b}(c) = \log(c_{0}^{b}) + \log(c_{1}^{b}) + c_{2}^{b}$

endowed with income (y^b) & capital (k_1^b) at $t = 1 \rightarrow \frac{2 \text{ types: } b \in \{p, r\},}{y^r > y^p, \ k_1^r \ge k_1^p}$ production at t = 2: $f(k_2^b) = k_2^b$

• BC0 $c_0^b = d_0^b$ • BC1 $c_1^b = y^b + p(k_1^b - k_2^b) + d_1^b - r_0 d_0^b$ • BC2 $c_2^b = k_2^b - r_1 d_1^b$

- 3 dates; consumption good and capital
- Borrowers: $u^b(c) = \log(c_0^b) + \log(c_1^b) + c_2^b$

endowed with income (y^b) & capital (k_1^b) at $t = 1 \rightarrow \frac{2 \text{ types: } b \in \{p, r\},}{y^r > y^p}, k_1^r \ge k_1^p$

production at t = 2: $f(k_2^b) = k_2^b$

• BC0 $c_0^b = d_0^b$

• BC1
$$c_1^b = y^b + p(k_1^b - k_2^b) + d_1^b - r_0 d_0^b$$

• BC2
$$c_2^b = k_2^b - r_1 d_1^b$$

+ collateral constraint at t = 1: $d_1^b \le \phi p k_2^b$

- 3 dates; consumption good and capital
- Borrowers: $u^{b}(c) = \log(c_{0}^{b}) + \log(c_{1}^{b}) + c_{2}^{b}$

endowed with income (y^b) & capital (k_1^b) at $t = 1 \rightarrow \frac{2 \text{ types: } b \in \{p, r\},}{y^r > y^p}, k_1^r \ge k_1^p$

production at t = 2: $f(k_2^b) = k_2^b$

• BC0 $c_0^b = d_0^b$

• BC1
$$c_1^b = y^b + p(k_1^b - k_2^b) + d_1^b - r_0 d_0^b$$

• BC2 $c_2^b = k_2^b - r_1 d_1^b$

+ collateral constraint at t = 1: $d_1^b \le \phi p k_2^b$

• Lenders: risk-neutral, deep-pocketed, no capital, unproductive

- 3 dates; consumption good and capital
- Borrowers: $u^{b}(c) = \log(c_{0}^{b}) + \log(c_{1}^{b}) + c_{2}^{b}$

endowed with income (y^b) & capital (k_1^b) at $t = 1 \rightarrow \frac{2 \text{ types: } b \in \{p, r\},}{y^r > y^p}, k_1^r \ge k_1^p$

production at t = 2: $f(k_2^b) = k_2^b$

• BC0 $c_0^b = d_0^b$

• BC1
$$c_1^b = y^b + p(k_1^b - k_2^b) + d_1^b - r_0 d_0^b$$

• BC2 $c_2^b = k_2^b - r_1 d_1^b$

+ collateral constraint at t = 1: $d_1^b \le \phi p k_2^b$

Lenders: risk-neutral, deep-pocketed, no capital, unproductive ⇒ have zero capital demand, pin down r_t = 1

• Average income Y is low

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{MU_2^b + \phi p(MU_1^b - MU_2^b)}_{Marginal \ Benefit \ of \ k_2^b} = \underbrace{MU_1^b p}_{Marginal \ Cost \ of \ k_2^b}$$

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{MU_{2}^{b} + \phi p(MU_{1}^{b} - MU_{2}^{b})}_{Marginal \ Benefit \ of \ k_{2}^{b}} = \underbrace{MU_{1}^{b} p}_{Marginal \ Cost \ of \ k_{2}^{b}}$$

• Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow$

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow \Rightarrow$ price \downarrow

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow \Rightarrow$ price \downarrow

Wealth effects of price \downarrow :

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow \Rightarrow$ price \downarrow

Wealth effects of price \downarrow :

 \Rightarrow collateral constraint tightens \Rightarrow $d_1^b \downarrow$

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow \Rightarrow$ price \downarrow

Wealth effects of price \downarrow :

 \Rightarrow collateral constraint tightens \Rightarrow $d_1^b \downarrow \Rightarrow$ $MU_1^b - MU_2^b \uparrow$

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow \Rightarrow$ price \downarrow

Wealth effects of price \downarrow :

 $\Rightarrow \text{ collateral constraint tightens} \Rightarrow d_1^b \downarrow \Rightarrow MU_1^b - MU_2^b \uparrow \Rightarrow \text{ welfare } \downarrow$ (Collateral Channel)
Fire Sale

• Average income Y is low $\Rightarrow d_1^b = \phi p k_2^b$ & price solves:

$$\underbrace{\mathcal{M}\mathcal{U}_2^b + \phi p(\mathcal{M}\mathcal{U}_1^b - \mathcal{M}\mathcal{U}_2^b)}_{\textit{Marginal Benefit of } k_2^b} = \underbrace{\mathcal{M}\mathcal{U}_1^b p}_{\textit{Marginal Cost of } k_2^b}$$

- Income inequality \Rightarrow capital trade: $k_2^r > k_1^r \& k_2^p < k_1^p$
- A decrease in net income $(Y D_0) \Rightarrow MU_1^b \uparrow \Rightarrow$ price \downarrow

Wealth effects of price \downarrow :

- $\Rightarrow \text{ collateral constraint tightens} \Rightarrow d_1^b \downarrow \Rightarrow MU_1^b MU_2^b \uparrow \Rightarrow \text{ welfare } \downarrow$ (Collateral Channel)
- ⇒ capital buyers gain, capital sellers lose (Capital Trade Channel)

• Each borrower chooses debt taking price as given:

 $MU_0 = MU_1$

• Each borrower chooses debt taking price as given:

 $MU_0 = MU_1$

• Benchmark: constrained social planner (using Pareto weights: χ^j) \rightarrow accounts for **impact of aggregate debt on prices**

• Each borrower chooses debt taking price as given:

 $MU_0 = MU_1$

• Benchmark: constrained social planner (using Pareto weights: χ^j) \rightarrow accounts for **impact of aggregate debt on prices**

$$MU_0 = MU_1 - CC \frac{\partial p}{\partial D_0} - CTC \frac{\partial p}{\partial D_0}$$

• Each borrower chooses debt taking price as given:

$$MU_0 = MU_1$$

Benchmark: constrained social planner (using Pareto weights: χ^j)
 → accounts for impact of aggregate debt on prices

$$MU_{0} = MU_{1} \underbrace{-CC \frac{\partial p}{\partial D_{0}}}_{>0} \underbrace{-CTC \frac{\partial p}{\partial D_{0}}}_{\stackrel{\varsigma}{\leq 0} \leftarrow \frac{depends \text{ on}}{\chi^{r} \& \chi^{p}}$$

• Each borrower chooses debt taking price as given:

$$MU_0 = MU_1$$

Benchmark: constrained social planner (using Pareto weights: χ^j)
 → accounts for impact of aggregate debt on prices

$$MU_{0} = MU_{1} \underbrace{-CC \frac{\partial p}{\partial D_{0}}}_{>0} \underbrace{-CTC \frac{\partial p}{\partial D_{0}}}_{\stackrel{\leq}{\leq}0} \underbrace{\text{depends on}}_{\chi^{r} \& \chi^{p}}$$

Inefficiency and Planner's Policy

If inequality is not too high: the initial debt is inefficiently high.

A debt limit \bar{d}^{SP} can restore constrained efficiency.

The Model: Political Equilibrium

• Announce policies: t = 0 debt limit, \bar{d}_A and \bar{d}_Z

- Announce policies: t = 0 debt limit, \bar{d}_A and \bar{d}_Z
- Agents vote in majoritarian elections

- Announce policies: t = 0 debt limit, \bar{d}_A and \bar{d}_Z
- Agents vote in majoritarian elections
- Policy of the winner is implemented
- Winner receives benefits R for holding office

• Each agent belongs to a voter group, $J = \{l, r, p\}$

- Each agent belongs to a voter group, $J = \{I, r, p\}$
- Agent *i* votes on Z if $U^{i,J}(Z \text{ wins}) \ge U^{i,J}(A \text{ wins})$, where:

- Each agent belongs to a voter group, $J = \{l, r, p\}$
- Agent *i* votes on Z if $U^{i,J}(Z \text{ wins}) \ge U^{i,J}(A \text{ wins})$, where:

$$U^{i,J}(A \text{ wins}) = u^{J}(\overline{d}_{A})$$
$$U^{i,J}(Z \text{ wins}) = u^{J}(\overline{d}_{Z}) + b^{i,J}$$

- Each agent belongs to a voter group, $J = \{l, r, p\}$
- Agent *i* votes on Z if $U^{i,J}(Z \text{ wins}) \ge U^{i,J}(A \text{ wins})$, where:

$$U^{i,J}(A \text{ wins}) = u^{J}(\overline{d}_{A})$$

 $U^{i,J}(Z \text{ wins}) = u^{J}(\overline{d}_{Z}) + b^{i,J}$

$$b^{i,J} \sim U\left[-rac{1}{2\psi^J},rac{1}{2\psi^J}
ight],$$

idiosyncratic bias towards Z

- Each agent belongs to a voter group, $J = \{I, r, p\}$
- Agent *i* votes on Z if $U^{i,J}(Z \text{ wins}) \ge U^{i,J}(A \text{ wins})$, where:

$$U^{i,J}(A \text{ wins}) = u^{J}(\overline{d}_{A})$$
$$U^{i,J}(Z \text{ wins}) = u^{J}(\overline{d}_{Z}) + b^{i,J}$$

 $b^{i,J} \sim U\left[-rac{1}{2\psi^J},rac{1}{2\psi^J}
ight]$,

idiosyncratic bias towards Z

• Lower $|b^{iJ}| \Rightarrow$ policy more important in voting choice

- Each agent belongs to a voter group, $J = \{I, r, p\}$
- Agent *i* votes on Z if $U^{i,J}(Z \text{ wins}) \ge U^{i,J}(A \text{ wins})$, where:

$$U^{i,J}(A \text{ wins}) = u^{J}(\overline{d}_{A})$$
$$U^{i,J}(Z \text{ wins}) = u^{J}(\overline{d}_{Z}) + b^{i,J}$$

 $b^{i,J} \sim U\left[-rac{1}{2\psi^J},rac{1}{2\psi^J}
ight],$

idiosyncratic bias towards Z

- Lower $|b^{iJ}| \Rightarrow$ policy more important in voting choice
- Concentration ψ^J

- Each agent belongs to a voter group, $J = \{I, r, p\}$
- Agent *i* votes on Z if $U^{i,J}(Z \text{ wins}) \ge U^{i,J}(A \text{ wins})$, where:

$$U^{i,J}(A \text{ wins}) = u^{J}(\overline{d}_{A})$$
$$U^{i,J}(Z \text{ wins}) = u^{J}(\overline{d}_{Z}) + b^{i,J}$$

 $b^{i,J} \sim U\left[-rac{1}{2\psi^J},rac{1}{2\psi^J}
ight],$

idiosyncratic bias towards Z

- Lower $|b^{iJ}| \Rightarrow$ policy more important in voting choice
- Concentration $\psi^J
 ightarrow$ responsiveness to policy of group J

$$\sum_{J} \psi^{J} \theta^{J} \frac{\mathrm{d} u^{J}(\overline{d}_{A})}{\mathrm{d} \overline{d}_{A}} = 0$$

$$\sum_{J} \psi^{J} \theta^{J} \frac{\mathrm{d} u^{J}(\overline{d}_{A})}{\mathrm{d} \overline{d}_{A}} = 0$$

• Policy preferences:
$$\frac{\mathrm{d}u^{J}(\overline{d})}{\mathrm{d}\overline{d}}$$

$$\sum_{J} \psi^{J} \theta^{J} \frac{\mathrm{d} u^{J}(\overline{d}_{A})}{\mathrm{d} \overline{d}_{A}} = 0$$

- Policy preferences: $\frac{\mathrm{d}u^{J}(\overline{d})}{\mathrm{d}\overline{d}}$
- Population share: θ^J

$$\sum_{J} \psi^{J} \theta^{J} \frac{\mathrm{d} u^{J}(\overline{d}_{A})}{\mathrm{d} \overline{d}_{A}} = 0$$

- Policy preferences: $\frac{\mathrm{d}u^{J}(\overline{d})}{\mathrm{d}\overline{d}}$
- Population share: θ^J
- Responsiveness: ψ^J

$$\sum_{J} \psi^{J} \theta^{J} \frac{\mathrm{d} u^{J}(\overline{d}_{A})}{\mathrm{d} \overline{d}_{A}} = 0$$

- Policy preferences: $\frac{\mathrm{d}u^{J}(\overline{d})}{\mathrm{d}\overline{d}}$
- Population share: θ^J
- Responsiveness: $\psi^J \rightarrow$ electoral power per population share

Lenders: unaffected by the debt limit \rightarrow indifferent

Lenders: unaffected by the debt limit \rightarrow indifferent

Borrowers:

$$\frac{\mathrm{d}u^b(\bar{d}_A)}{\mathrm{d}\bar{d}_A} = MU_0^b - MU_1^b$$

• Directly affected by the debt limit at t = 0

Lenders: unaffected by the debt limit \rightarrow indifferent

Borrowers:

$$\frac{\mathrm{d}u^b(\bar{d}_A)}{\mathrm{d}\bar{d}_A} = MU_0^b - MU_1^b$$

- Directly affected by the debt limit at t = 0
- Internalize impact of the debt limit on price: $\frac{\partial p}{\partial \bar{d}} < 0$

Lenders: unaffected by the debt limit \rightarrow indifferent

Borrowers:

$$\frac{\mathrm{d}u^{b}(\overline{d}_{A})}{\mathrm{d}\overline{d}_{A}} = MU_{0}^{b} - MU_{1}^{b} + (MU_{1}^{b} - MU_{2}^{b})\phi k_{2}^{b}\frac{\partial p}{\partial \overline{d}_{A}}$$

- Directly affected by the debt limit at t = 0
- Internalize impact of the debt limit on price: $\frac{\partial p}{\partial d} < 0$
 - $\bullet~\mbox{Collateral channel} \rightarrow \mbox{both types prefer to limit borrowing}$

Lenders: unaffected by the debt limit \rightarrow indifferent

Borrowers:

$$\frac{\mathrm{d}u^{b}(\overline{d}_{A})}{\mathrm{d}\overline{d}_{A}} = \mathcal{M}U_{0}^{b} - \mathcal{M}U_{1}^{b} + (\mathcal{M}U_{1}^{b} - \mathcal{M}U_{2}^{b})\phi k_{2}^{b}\frac{\partial p}{\partial \overline{d}_{A}} + \mathcal{M}U_{1}^{b}(k_{1}^{b} - k_{2}^{b})\frac{\partial p}{\partial \overline{d}_{A}}$$

- Directly affected by the debt limit at t = 0
- Internalize impact of the debt limit on price: $\frac{\partial p}{\partial d} < 0$
 - Collateral channel \rightarrow both types prefer to limit borrowing
 - Capital trade channel

 \rightarrow high-income borrowers (capital buyers) prefer a lax limit

ightarrow low-income borrowers (capital sellers) prefer a strict limit

Result

Equilibrium debt limit corresponds to the policy of a SP with $\frac{\chi'}{\chi^p} = \frac{\psi'}{\psi^p}$.

Result

Equilibrium debt limit corresponds to the policy of a SP with $\frac{\chi'}{\chi^p} = \frac{\psi'}{\psi^p}$.

- Policy applies to all \Rightarrow allows coordination
 - $\rightarrow\, \bar{d}^*$ is constrained efficient

Result

Equilibrium debt limit corresponds to the policy of a SP with $\frac{\chi'}{\chi^p} = \frac{\psi'}{\psi^p}$.

- Policy applies to all \Rightarrow allows coordination $\rightarrow \Bar{d}^*$ is constrained efficient
- Distributive effects of policy

 $ightarrow ar{d}^*$ is generally different than policy of a **utilitarian** planner

Result

Equilibrium debt limit corresponds to the policy of a SP with $\frac{\chi'}{\chi^p} = \frac{\psi'}{\psi^p}$.

- Policy applies to all \Rightarrow allows coordination $\rightarrow \bar{d}^*$ is constrained efficient
- Distributive effects of policy
 - $ightarrow ar{d}^*$ is generally different than policy of a **utilitarian** planner

Result

The limit increases in the electoral power of high income borrowers:

$$\frac{\partial \bar{d}^*}{\partial \psi^r} > 0$$

A mean preserving **increase in income inequality** results in **laxer** policy, if and only if the relative electoral power of **high-income** types is high, $\psi^r > \psi^p$,

A mean preserving **increase in income inequality** results in **laxer** policy, if and only if the relative electoral power of **high-income** types is high, $\psi^r > \psi^p$,

• inequality increases scale of capital trade: $k_2^r \uparrow$, $k_2^p \downarrow$

A mean preserving **increase in income inequality** results in **laxer** policy, if and only if the relative electoral power of **high-income** types is high, $\psi^r > \psi^p$,

- inequality increases scale of capital trade: $k_2^r \uparrow$, $k_2^p \downarrow$
- capital trade channel more relevant \Rightarrow policy conflict \uparrow

A mean preserving **increase in income inequality** results in **laxer** policy, if and only if the relative electoral power of **high-income** types is high, $\psi^r > \psi^p$,

- inequality increases scale of capital trade: $k_2^r \uparrow$, $k_2^p \downarrow$
- capital trade channel more relevant \Rightarrow policy conflict \uparrow
- if $\psi^r > \psi^p$ policy caters to high-income types $\Rightarrow \bar{d}^* \uparrow$
Goal: to understand preference & policy in a standard setting

• rational voters

- rational voters
- no bail-outs

- rational voters
- no bail-outs
- frictionless political process

- rational voters
- no bail-outs
- frictionless political process \rightarrow frictions can reverse preferences

Political Friction: Regulatory Capture

- Share ρ of high-income types have access to politicians
 - "politically connected": population share $\theta^c = \rho \theta^r$, with ψ^c

- Share ρ of high-income types have access to politicians
 - "politically connected": population share $\theta^c = \rho \theta^r$, with ψ^c
 - exempt from regulation (regulatory capture)

- Share ρ of high-income types have access to politicians
 - "politically connected": population share $\theta^c = \rho \theta^r$, with ψ^c
 - exempt from regulation (regulatory capture)
- Remaining borrowers have no access
 - "non-connected": population share $1 \theta^c$ with ψ^n

- Share ρ of high-income types have access to politicians
 - "politically connected": population share $\theta^c = \rho \theta^r$, with ψ^c
 - exempt from regulation (regulatory capture)
- Remaining borrowers have no access
 - "non-connected": population share $1 \theta^c$ with ψ^n
 - subject to \bar{d} set in elections

Borrowing Distortion

• Connected borrowers choose d_0^c so that:

$$MU_0^c = MU_1^c \Rightarrow d_0^c > \bar{d}$$

• Connected borrowers choose d_0^c so that:

$$MU_0^c = MU_1^c \Rightarrow d_0^c > \bar{d}$$

Impact on Price

For a given debt limit, price decreases in the share of connected:

$$\frac{\partial p}{\partial \theta^c} < 0$$

• Connected borrowers choose d_0^c so that:

$$MU_0^c = MU_1^c \Rightarrow d_0^c > \bar{d}$$

Impact on Price

For a given debt limit, price decreases in the share of connected:

$$\frac{\partial p}{\partial \theta^c} < 0$$

Regulatory capture \Rightarrow effectiveness of policy \downarrow

• Connected borrowers do not face costs of regulation, only benefits

- Connected borrowers do not face costs of regulation, only benefits
 - \rightarrow prefer the minimum debt limit

- Connected borrowers do not face costs of regulation, only benefits
 - \rightarrow prefer the minimum debt limit

Proposition

Equilibrium debt limit decreases in the electoral power of connected:

$$\frac{\mathrm{d}\bar{d}}{\mathrm{d}\psi^{c}} < 0$$

- Connected borrowers do not face costs of regulation, only benefits
 - \rightarrow prefer the minimum debt limit

Proposition

Equilibrium debt limit decreases in the electoral power of connected:

$$\frac{\mathrm{d}\bar{d}}{\mathrm{d}\psi^c} < 0$$

Regulatory capture \Rightarrow cost of regulation shifted to the non-connected

• Borrowing distortion:

policy less effective $ightarrow ar{d} \uparrow$ is preferred by the non-connected

• Borrowing distortion:

policy less effective $ightarrow ar{d} \uparrow$ is preferred by the non-connected

• Policy preference distortion:

burden on non-connected $\rightarrow \, \bar{d} \downarrow$ preferred by the connected

• Borrowing distortion:

policy less effective $ightarrow ar{d} \uparrow$ is preferred by the non-connected

• Policy preference distortion:

burden on non-connected $ightarrow ar{d}\downarrow$ preferred by the connected

Equilibrium Debt Limit

The equilibrium debt limit set in elections is **too strict** if the electoral power of the **connected** is high:

$$\bar{d} < \bar{d}^{SP} \iff \psi^c > \psi^n$$

It may be too lax if the electoral power of non-connected is high.

Numerical Example

• Coordination is undermined & preferences distorted

 \Rightarrow policy set in elections is inefficient

• Coordination is undermined & preferences distorted

 \Rightarrow policy set in elections is inefficient

• If correlation of income & connections is high (large ρ):

regulatory capture \Rightarrow policy preferences are **reversed**

• Coordination is undermined & preferences distorted

 \Rightarrow policy set in elections is inefficient

• If correlation of income & connections is high (large ρ):

regulatory capture \Rightarrow policy preferences are **reversed**

 \bullet Connected borrowers shift regulation on non-connected \sim evidence:

lobbying firms impose externality on non-lobbyists (Neretina, 2018)

Conclusions

 $\bullet\,$ Fire-sales are distributive \rightarrow prudential policy is political

- $\bullet\,$ Fire-sales are distributive \rightarrow prudential policy is political
- High-income types partially benefit from $p \downarrow \rightarrow$ support lax policy

- $\bullet\,$ Fire-sales are distributive \rightarrow prudential policy is political
- High-income types partially benefit from $p \downarrow \rightarrow$ support lax policy
- Regulatory capture:
 - undermines coordination through policy
 - generates heterogeneous exposure to the costs of policy

- $\bullet\,$ Fire-sales are distributive \rightarrow prudential policy is political
- High-income types partially benefit from $p \downarrow \rightarrow$ support lax policy
- Regulatory capture:
 - undermines coordination through policy
 - generates heterogeneous exposure to the costs of policy
 - \rightarrow policy is inefficient & preferences may be reversed

Thank You

Appendix

Planner's FOC:

 $MU_0 = MU_1$

Planner's FOC:

$$MU_{0} = MU_{1} - (MU_{1} - MU_{2})\phi \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} k_{2}^{b}$$
collateral channel < 0

Planner's FOC:

$$MU_{0} = MU_{1} - (MU_{1} - MU_{2})\phi \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} k_{2}^{b} - MU_{1} \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} (k_{1}^{b} - k_{2}^{b})$$
collateral channel < 0
capital trade channel ≤ 0

Planner's FOC:

$$MU_{0} = MU_{1} - (MU_{1} - MU_{2})\phi \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} k_{2}^{b} - MU_{1} \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} (k_{1}^{b} - k_{2}^{b})$$
collateral channel < 0
collateral channel < 0

• With
$$\chi^r = \chi^p$$
 (utilitarian), capital trade channel = 0

Planner's FOC:

$$MU_{0} = MU_{1} - (MU_{1} - MU_{2})\phi \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} k_{2}^{b} - MU_{1} \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} (k_{1}^{b} - k_{2}^{b})$$
collateral channel < 0
collateral channel < 0

• With $\chi^r = \chi^p$ (utilitarian), capital trade channel = 0

 \rightarrow only collateral channel: negative pecuniary externality
Planner's Policy

Planner's FOC:

$$MU_{0} = MU_{1} - (MU_{1} - MU_{2})\phi \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} k_{2}^{b} - MU_{1} \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} (k_{1}^{b} - k_{2}^{b})$$
collateral channel < 0
collateral channel < 0

• With $\chi^r = \chi^p$ (utilitarian), capital trade channel = 0

 \rightarrow only collateral channel: negative pecuniary externality

• With $\chi^r > \chi^p$, capital trade channel > 0

Planner's Policy

Planner's FOC:

$$MU_{0} = MU_{1} - (MU_{1} - MU_{2})\phi \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} k_{2}^{b} - MU_{1} \frac{\partial p}{\partial d_{0}^{SP}} \sum_{b} \theta^{b} \chi^{b} (k_{1}^{b} - k_{2}^{b})$$
collateral channel < 0
collateral channel < 0

• With $\chi^r = \chi^p$ (utilitarian), capital trade channel = 0

 \rightarrow only collateral channel: negative pecuniary externality

• With $\chi^r > \chi^p$, capital trade channel > 0

ightarrow pecuniary externality negative but weaker



Proposition

Equilibrium debt limit corresponds to policy of a constrained social planner with $\frac{\psi^r}{\psi^p}=\frac{\chi^r}{\chi^p}.$

With universal enforcement \rightarrow internalize externality when voting \Rightarrow policy on Pareto Frontier

Proposition

Equilibrium debt limit corresponds to policy of a constrained social planner with $\frac{\psi'}{\psi^p}=\frac{\chi'}{\chi^p}.$

With universal enforcement \rightarrow internalize externality when voting \Rightarrow policy on Pareto Frontier

• In prudential regulation literature: benchmark = Pareto Frontier

Proposition

Equilibrium debt limit corresponds to policy of a constrained social planner with $\frac{\psi'}{\psi^{p}} = \frac{\chi'}{\chi^{p}}$.

With universal enforcement \rightarrow internalize externality when voting \Rightarrow policy on Pareto Frontier

• In prudential regulation literature: benchmark = Pareto Frontier

 \Rightarrow equilibrium policy is constrained efficient

Proposition

Equilibrium debt limit corresponds to policy of a constrained social planner with $\frac{\psi'}{\psi^{p}} = \frac{\chi'}{\chi^{p}}$.

With universal enforcement \rightarrow internalize externality when voting \Rightarrow policy on Pareto Frontier

- In prudential regulation literature: benchmark = Pareto Frontier
 - \Rightarrow equilibrium policy is constrained efficient
- In political economy literature: benchmark = Utilitarian SP

Proposition

Equilibrium debt limit corresponds to policy of a constrained social planner with $\frac{\psi'}{\psi^{p}} = \frac{\chi'}{\chi^{p}}$.

With universal enforcement \rightarrow internalize externality when voting \Rightarrow policy on Pareto Frontier

- In prudential regulation literature: benchmark = Pareto Frontier
 ⇒ equilibrium policy is constrained efficient
- In political economy literature: benchmark = Utilitarian SP
 - policy too lax if high-income borrowers pivotal $\psi^r > \psi^p$
 - policy too strict if low-income borrowers pivotal $\psi^{\rm r} < \psi^{\rm p}$

Proposition

Equilibrium debt limit corresponds to policy of a constrained social planner with $\frac{\psi'}{\psi^{p}} = \frac{\chi'}{\chi^{p}}$.

With universal enforcement \rightarrow internalize externality when voting \Rightarrow policy on Pareto Frontier

- In prudential regulation literature: benchmark = Pareto Frontier
 - \Rightarrow equilibrium policy is constrained efficient
- In political economy literature: benchmark = Utilitarian SP
 - policy too lax if high-income borrowers pivotal $\psi^r > \psi^p$
 - policy too strict if low-income borrowers pivotal $\psi^{\rm r} < \psi^{\rm p}$

Back

If electoral power of **high-income** types is high $\psi^r > \psi^p$ a mean preserving **increase in income inequality** results in **laxer** policy.

If electoral power of high-income types is high $\psi^r > \psi^p$ a mean preserving increase in income inequality results in laxer policy.

• inequality increases scale of capital trade: $k_2^r \uparrow$, $k_2^p \downarrow$

If electoral power of **high-income** types is high $\psi^r > \psi^p$ a mean preserving **increase in income inequality** results in **laxer** policy.

- inequality increases scale of capital trade: $k_2^r \uparrow$, $k_2^p \downarrow$
- capital trade channel becomes more relevant ightarrow policy conflict \uparrow

If electoral power of **high-income** types is high $\psi^r > \psi^p$ a mean preserving **increase in income inequality** results in **laxer** policy.

- inequality increases scale of capital trade: $k_2^r \uparrow$, $k_2^p \downarrow$
- capital trade channel becomes more relevant ightarrow policy conflict \uparrow
- if $\psi^r > \psi^p$ policy caters to high-income types $\Rightarrow \bar{d} \downarrow$

Back