

## The Political Economy of Financial Instability

Enrico Perotti

## Theories of crises

- First generation: bad policies
  - Crises are avoidable
- Second generation: foolish markets
  - Crises are self fulfilling
- Third generation: bad institutions
  - Crises are unavoidable

## Political institutions and finance

- Unlimited government: huge expropriation risk, thus no accumulation (North and Weingast 1986)
  - Classic sovereign risk
- Autocracy: elite captures regulation, limits entry.
  - Rajan Zingales (2003), Perotti Volpin (2007), Benmelech Moskowitz (2010)
  - Financial markets have some depth but no breadth (limited access)
- Democracy: support broad access, diffused ownership, more competition.
  - Pagano Volpin (2005), Perotti von Thadden (2006)
  - May also produce corporatist or populist equilibria (excess credit?)
  - May cause its own sort of instability

## Autocracies and captured regulation

- Limited accountability (weak constraints on executive) allows capture of regulation
- This distorts financial development, limits access and create fragility with unequal gains and losses
- Countries with poor political institutions:
  - Have more restrictive financial regulation, yet greater instability (Barth Caprio Levine 2006).
  - Exhibit greater macroeconomic instability even after controlling for actual policy (Acemoglu et al 2003)
  - Liberalization in countries with poor institutions does increase chance of crises (Bekaert Harvey Lundblad, 2004)

## Evidence for captured regulation Benmelech, Moskowitz (2009)

- Political competition led to variation in political rights for colonists in US states.
- Usury laws and incorporation laws were used by local elites to reduce entry and lowered own cost of capital.
- Usury limits on interest rate block access to finance for those without sufficient assets, reputation and relationships.

## BM (2009): Data

- Extent of suffrage, incorporation law and banking restrictions.
- Maximum legal interest rates and penalties.
- Proxies for accountability: newspapers per capita, agricultural shocks, commodity price shocks,...
- Market yields from bonds not bounded by usury laws (British and American government, railroads)
  - Allows to measure how tight were usury rates

## BM (2009): Hypotheses

- Do usury laws affect credit volume ?
  - Tighter usury laws → lower lending activity
  - Hurts entrepreneurs with less capital (eg land..)
- Are laws shaped by private interests?
  - More political power incumbents → tighter usury laws
  - More diffused suffrage right → weaker usury laws
  - Higher cost of capital → weaker usury laws, as they may bind even incumbents

## BM (2009): Results

- more restrictive suffrage and a higher % of non-voters are associated with a lower maximum lending rate
- more restrictive suffrage is associated with stricter incorporation laws
- higher newspaper circulation is associated with higher maximum lending rate
- in a crisis, the maximum lending rate is higher

## More evidence for insider-captured regulation

Rajan, Rachmaran (2009)

- Distribution of wealth as proxy for political power
- Large farmers influenced US local banking structure.
- By restricting bank competition, large farmers constrained manufacturing growth for decades, maintaining own dominance.
- Endogeneity problem
- Use rainfall as instrument as it affects efficient farm size
  - banking density (1920s)
  - manufacturing value added growth
- Higher concentration of land holdings at county level led to fewer banks.

## Lobbying and Entry

Enrico Perotti

Paolo Volpin

## Entry

- Entry is important because:
  - Increase competition
  - Leads to higher economic growth
  - Narrow entry may entrench a political structure which undermines future growth (Engerman-Sokoloff, 1997).
- Entry is larger in a democracy (Acemoglu, 2002) where broader economic access is supported by broader political rights
- Stability of top firms suggests entrenchment. Big business turnover correlates with rising income, productivity, and (in high income countries) faster capital accumulation (Fogel, Morck and Yeung, 2006)

## Entry Barriers

- Can be formal (entry requirements) or informal (poor investor protection).
- Formal entry barriers measured by World Bank
- Correlated with legal origin and political variables (DLLS, 2003).
  - Extraordinary barriers in corrupt countries.
- High entry barriers are indeed associated with surprisingly low entry (Klapper Laeven Rajan, 2006).
- Rajan Zingales (2003) argue that entry barriers will be larger in societies less open to trade, as producer lobbying is less constrained

## This paper

- We study the effect on entry of *political accountability*, defined as
  - Theoretically: the sensitivity of politician's utility towards citizens' welfare relative to political contributions
  - Empirically: the combination of formal voting rights and adequate diffusion of information via the press

## Theoretical Results

- Entry is shaped ex ante by lobbying on investor protection by a *single* lobby group.
- Outcome: the more accountable are politicians, the greater is the size of the winning lobbying coalition, and thus entry.
- Intuition: when citizens' welfare weighs more in politician's utility, bribes to reduce competition are costlier

## Political system

Politicians choose investor protection (and entry):

$$\max \beta S(n) + (1 - \beta) L(n)$$

$S(n)$  is citizens' or social welfare

$L(n)$  are lobbying contributions

Thus  $\beta$  measures how much politicians take into consideration public welfare in the policy choice

We define  $\beta$  a measure of political accountability.

## Citizens

Unit mass of consumers maximises

$$U_i = k_i + ac_i - \frac{1}{2}c_i^2$$

$$s.t. k_i = \begin{cases} \omega_i - pc_i & \text{if consumer} \\ \omega_i - pc_i + \pi(n) & \text{if entrepreneur} \end{cases}$$

with consumption numeraire good

$c_i$  = consumption final good

$a$  = strength of demand ( $a > 1$ )

$\omega$  = endowment ( $\omega > \frac{1}{4}a^2$ )

## Lobbying

- Entrepreneurs have wealth  $w$  uniformly distributed over  $[0, W]$  and need capital  $I \geq W$  to set up a firm producing one unit of final good.
- Entrepreneurs can raise up to  $\delta I$  from capital markets.
- The lobbyist maximises the total profits of all entrepreneurs:  $\Pi(n) = n\pi(n) - L(n)$
- Lobbying over  $\delta$  to maximise  $\Pi(n)$ .

## Timeline

- $t = 0$  : interest group formation
- $t = 1$  : offer by interest group made and investor protection set by politician
- $t = 2$  : individuals set up a firm at cost  $I$  paid for through endowment and loan
- $t = 3$  : each firm produces one unit of final good
- $t = 4$  : market opens, final goods are sold, contributions are paid.

### Product Market: $t = 4$

The product market equilibrium has

Supply is  $n$

Demand is  $a-p$  (from maximisation of  $U_i$ )

Firm income is  $a-n-I$

Maximum entry is  $m=a-I$ ; assume that  $m < 0.5$

Consumers' indirect utility is  $U_i = \omega_i + \frac{1}{2}n^2$

Total firm income is  $n(m-n)$

### Setting investor protection: $t = 2$

• Total firm profits are  $n(m-n)-L(n)$   
where  $L(n)$  are lobbying contributions.

• The politician maximises

$$U_p(n) = \beta S(n) + (1 - \beta)L(n)$$

$$\text{with } S(n) = E(\omega) + \frac{1}{2}n^2 + n(m - n)$$

•  $\beta$  is the level of political accountability

### Setting investor protection: $t = 2$

To convince the politician to set entry at  $n < m$

$$U_p(n) \geq U_p(m)$$

$$\Leftrightarrow \beta S(n) + (1 - \beta)L(n) \geq \beta S(m)$$

$$\Leftrightarrow L(n) \geq \frac{\beta}{1 - \beta} [S(m) - S(n)]$$

$$\Leftrightarrow L(n) \geq \frac{\beta}{1 - \beta} \left[ \frac{1}{2}m^2 - \left( \frac{1}{2}n^2 + n(m - n) \right) \right]$$

$$\Leftrightarrow L(n) = \frac{\beta}{1 - \beta} \left[ \frac{1}{2}m^2 - \left( \frac{1}{2}n^2 + n(m - n) \right) \right]$$

### Interest group formation: $t = 1$

• The lobby group is formed to maximise

$$\Pi(n) = n\pi(n) - L(n)$$

$$= n(m - n) - \frac{\beta}{1 - \beta} \left[ \frac{1}{2}m^2 - \left( \frac{1}{2}n^2 + n(m - n) \right) \right]$$

• Maximisation over  $n$  yields

$$n = \frac{m}{2 - \beta}$$

Which clearly increases in  $\beta$ .

### Evidence

- Entry is affected by both entry costs and investor protection
- Investor protection is stronger in more accountable political systems (but not per se in democracies)
- Once we control for investor protection, entry is no longer affected by financial development

### Data

- Entry = growth rate in number of firms by country and industry (from 1983-92) from UNIDO.
- Number of firms = average number of active firms by country and industry.
- Newspaper circulation as measure of political accountability
- Financial development & openness
- Firms' dependence on external finance

### Interpretation: Media and accountability

- The lobbying power of special interest groups depends on what voters know, thus newspaper circulation may proxy well for accountability.
- Media diffusion is correlated with press freedom, education (Dyck, Moss and Zingales, 2005) and measures of formal democracy, but appears to have an independent component
- Media diffusion is lower when the media is politically captured (Djankov et al 2001).

### Empirical questions

- (1) Is there more entry in externally dependent (and high growth) sectors in countries with better investor protection?
- (2) Are there more firms in externally dependent (and high growth) sectors in countries with better investor protection ?
- (3) Is investor protection better in countries with better political accountability ?
- (4) Is this effect on entry and number of firms driven by investor protection or by financial development ?

### Prediction 1: Entry and IP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
External dependence ×							
Cost of entry	-0.811*** (0.239)			-0.544* (0.282)	-1.164* (0.609)		-0.550* (0.281)
Effective investor protection		0.258*** (0.081)		0.184* (0.098)		0.254*** (0.095)	0.163* (0.097)
Financial development			0.378* (0.198)		0.194 (0.231)	-0.028 (0.227)	
Openness							0.002 (0.002)
Observations	1141	1048	1112	1048	1112	1019	1048
R-squared	0.68	0.697	0.682	0.697	0.683	0.698	0.697

### Prediction 2: Number of firms and IP

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
External dependence ×							
Cost of entry		-0.508** (0.245)			-0.232 (0.284)	-0.721** (0.327)	
Effective investor protection			0.026*** (0.010)		0.021* (0.012)		0.018* (0.011)
Financial development				0.345*** (0.133)		0.226* (0.137)	0.225 (0.147)
Openness							0.003 (0.002)
Observations		1060	973	1031	973	1031	944
R-squared		0.633	0.637	0.639	0.637	0.64	0.645

### Prediction 3: Accountability and IP

<b>Newspaper circulation</b>	8.290*** [0.810]	6.360*** [1.179]
<b>Common law dummy</b>	1.191*** [0.340]	1.300*** [0.361]
<b>Income inequality</b>		-0.016 [0.021]
<b>Log pc income</b>		0.272 [0.189]

### Prediction 4: Entry and self-dealing

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
External dependence ×							
Cost of entry		-1.385***			-0.968**	-2.402***	-0.98***
Effective investor Protection			0.049***		0.031**		0.038***
Financial development				0.691***		0.296	0.372
Openness							0.004**
Observations	1060	973	1031	973	1031	944	973
R-squared	0.601	0.629	0.603	0.631	0.606	0.633	0.631

## Conclusions

- Investor protection affects entry rates.
- Investor protection is affected by political accountability.
- Autocratic societies block entry more.
- Other entry barriers are important.

## Who allocates credit

- Previous model assumed lobbying limited access to credit indirectly, by setting limited investor protection
- But in reality credit is assigned by banks with ample discretion
- When bad loans cause banks to fail, depositors and taxpayers pay for it
- So who runs banks may also allocate gains and losses

## Who is in control of banks ?

- Large banks may be controlled by the state, families, or diffused market investors.
- In principle, state banks may maintain stability and ensure fair access.
- Evidence:  
More state ownership in poorer and more corrupt countries, and in civil law countries.
- A family is the controlling owner in over half of banks in emerging markets (Barth Caprio Levine 2006).

## Bank ownership

- 1) Efficient view: Bank governance is a solution to severe underlying agency problems
  - Large state or private stakes ensure monitoring
  - Presumably, private owners more efficient at selecting projects, move resources across firms, and monitoring
- 2) Crony capitalism: in countries with weak political accountability, an economic elite captures large rents thanks to strong political connections

## Existing evidence

- Bank ownership:
  - State ownership allows direct channelling of finance to connected firms (Sapienza, 2005; Khwaja and Mian, 2005; Claessens, Feijen and Laeven, 2007)
  - State ownership less likely in countries with strong democratic rights and under common law (La Porta, Lopez-de-Silanes and Shleifer, 2002)
  - Bank privatization often followed by crises associated with connected lending
- Bank ownership concentration
  - Private banks with large owners often lend to insiders.
  - Banking crises are more likely when ownership is concentrated (Bongini, Claessens and Ferri, 2001; Claessens, Djankov and Klapper, 2003; Barth, Caprio and Levine, 2005)

## Bank Ownership and Financial Stability

Enrico Perotti  
Marcel Vorage

### Main Ingredients: Bank Control

- The politician chooses bank control, a choice between:
  - **state banking.** The state retains direct control to choose entry directly and funnel share  $\theta$  of funds
    - State banking has inefficiency costs  $E$ .
  - **private banking.** The state allows private control by a group of entrepreneurs, who grant loans to themselves and set funneling  $\theta$ .
    - Privatization implies loss of control over risk taking

### Funneling

- Banker may funnel share  $\theta$  of funds (for example by underpricing loans, accepting little collateral).
- Funneling generates rents but increases the risk of bank failure.
- If the bank defaults, there is no lending and production  $\rightarrow$  very low consumption utility and no political contributions

### What constrains political choices ?

- The politician's utility:
 
$$U_p = \begin{cases} (1-\theta)[\beta s(n) - \beta E + (1-\beta)L(n)] & \text{if state banks} \\ (1-\theta)[\beta s(n) + (1-\beta)L(n)] & \text{if private banks} \end{cases}$$
- Like in Perotti-Volpin  $\beta$  is a measure of political accountability, which reflects the ability of citizens to punish welfare-reducing political decisions
- Social welfare falls with instability (and increases with entry)
- Political rents increase with funneling (and falls with entry)

### Timing

- At  $t = 0$  the politician chooses state banking ( $S$ ) or private banking ( $P$ ). When choosing  $S$ , cost  $E$  is incurred.
- At  $t = 1$  the politician demands political contributions  $k$  in exchange for preferential finance  $I$  to  $n$  entrepreneurs.
- At  $t = 2$  the bank raises  $nI$  and gives  $n$  loans of size  $I$ . Entrepreneurs invest  $I$  of which  $(1-\theta)I$  is collateral while  $\theta I$  is funneled.
- At  $t = 3$  banks default with probability  $\theta$ . When banks default, the investment is liquidated.
- At  $t = 4$  non-liquidated firms produce.
- At  $t = 5$  citizens receive endowment  $\omega$ , buy goods and consume. Contributions  $k$  are paid to the politician.
- At  $t = 6$  owners of defaulted banks are forced to repay  $n\theta I$ .

### How to limit private risk taking?

- The bank owners have full discretion on allocating loans and funneling.
- Private bankers do not internalise social costs of default.
- The politician needs to leave sufficient rents to reduce the banker's incentive to funnel.
- An increase in accountability results in lower tolerance for instability. To induce less risky lending, politicians demand less rents.
- Note that by reducing entry there are more rents to share...lower entry (?)

### Political contributions

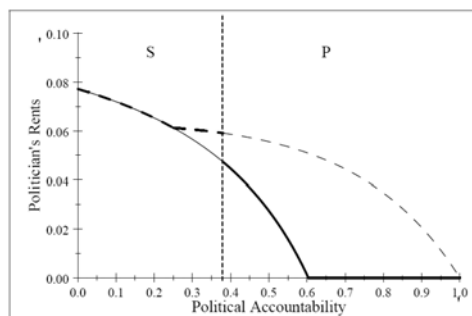


Figure 7: Politician's rents for  $m = \frac{1}{2}$ ,  $I = \frac{1}{3}$  and  $E = \frac{1}{10}$ .

### The politician's trade-offs

- State ownership (S):
  - (+) choosing borrowers directly can induce larger rents
  - (+) setting funneling at optimal level
  - (-) inefficiency costs of state banking
- Private captured ownership (P):
  - (-) having to limit funneling by 'leaving money on the table' reduces rents
  - (-) high risk of bank failure due to funneling
  - (+) no inefficiency costs of state banking

### Main results

- Politicians choose to retain direct control when they face weak constraints, get bribed to allocate loans
- Banks privatized once inefficiency becomes too costly

#### Empirical predictions

- Banks become private at a level accountability when they are captured
- Highest instability when bank control shift to private owners (when banks captured by smallest groups)

### Equilibrium bank control

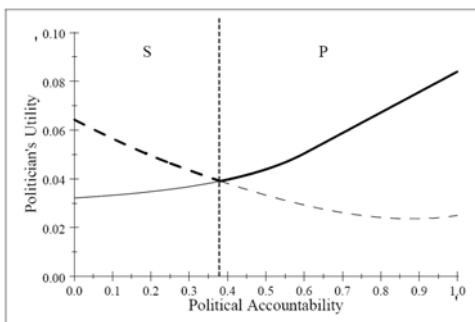


Figure 5: Utility for  $m = \frac{1}{2}$ ,  $I = \frac{1}{3}$  and  $E = \frac{1}{10}$ .

### Entry

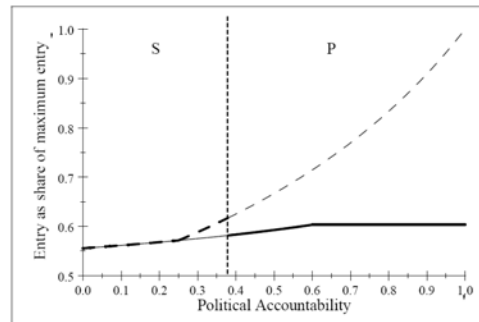


Figure 6: Entry for  $m = \frac{1}{2}$ ,  $I = \frac{1}{3}$  and  $E = \frac{1}{10}$ .

### Funneling

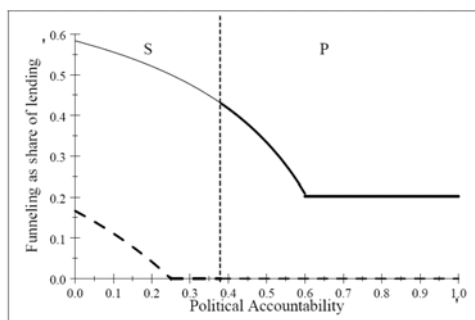


Figure 8: Funneling for  $m = \frac{1}{2}$ ,  $I = \frac{1}{3}$  and  $E = \frac{1}{10}$ .

### Results by Morck Yavuz Yeung

- Result I: Family banks associated with much more instability than state banks
- (Result II: State and family controlled banks are associated with less efficient capital allocation)
- Conjecture: family banks correspond to more captured systems, most common when banks privatized at intermediate levels of accountability.

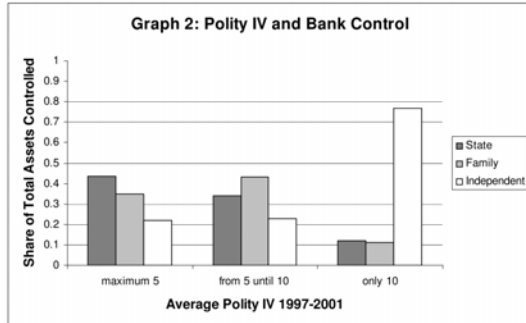
## Empirical Illustration: Data

We interpret family banks as banks captured by small elites.

- Ownership and control of banks (dependent variable): Ultimate ownership and voting rights in 10 largest banks in 44 countries (Morck, Yavuz and Yeung, 2008).
- Accountability
  - Voice&accountability (Kaufmann, Kraay, Mastruzzi, 2008)
  - Five-year average Polity2-score (Marshall, Jaggers and Gurr)
  - Press Freedom (Freedom House).
- Control for legal origin, GDP

## Bank ownership & accountability

(similar using 'Voice & Accountability' or 'Press Freedom')



The 'baskets' of Polity IV-scores respectively contain 10, 15 and 18 countries.

## Regressions

- Explain bank control using political variables and control for legal origin.
- These confirm the results in the earlier graphs.
- We show the regression for family control of banks...at intermediate accountability!

**Political Accountability and Family Bank Control: Ordinary Least Squares**

The table shows the results of cross-country OLS-regressions with robust standard errors. Explanatory variables are in rows, with a column for each of the four political variables. The dependent variable 'Family' refers to the fraction of votes in the ten largest banks in a country controlled by a family at the end of 2001. Other variables are as given in Table 1. P-values are in parentheses.

	Voice & Accountability	Polity IV	Press Freedom
Political Variable	0.164*** (0.002)	0.039** (0.024)	-0.002*** (0.692)
Political Variable Squared	-0.313*** (0.000)	-0.007** (0.015)	-0.000* (0.095)
English legal origin	0.202* (0.073)	0.138 (0.146)	0.090 (0.315)
French legal origin	0.276*** (0.009)	0.262*** (0.003)	0.193* (0.061)
Scandinavian legal origin	0.289** (0.028)	0.050 (0.545)	0.130 (0.250)
Constant	0.295*** (0.007)	0.292* (0.083)	0.411 (0.131)

## Conclusions

At low level of political accountability:

Predominance of state banks & low instability

At intermediate levels of accountability:

Private captured banks & high instability

At high levels of accountability:

private 'independent' banks & low instability

## Empirical Summary

- Both high state and family bank ownership is associated with lower efficiency
- Family owned banks associated with financial instability and lower economic growth (not true for state banks !)
- So private crony banks are not more efficient than state banks yet are associated with more instability and more inequality.
- Overall: slower growth, less entry, more instability when an elite has preferential access to capital

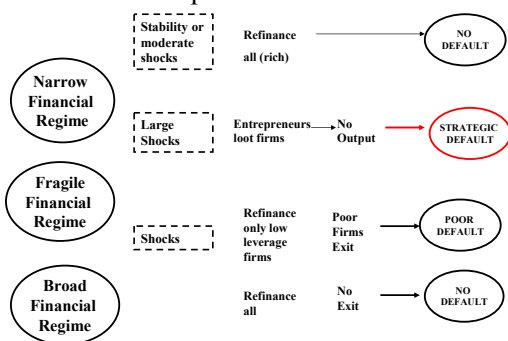
## Feijen Perotti Endogenous Exit

- Blocking entry may be very costly when politicians are more accountable.
- An alternative is to lobby to induce exit.
- Investor protection may be set high enough to allow entry, but too low to refinance after a shock
- Exit by more leveraged entrepreneurs in a crisis improves margins for other firms
- *Involuntary default* and *exit* are avoidable outcomes

## Access to Funding

	Entry	Refinancing
NARROW	Only Rich funded	Rich refinanced
FRAGILE	Everyone funded	Poor denied refinancing Rich refinanced
BROAD	Everyone funded	Everyone refinanced

## Financial equilibria after a shock



## Comparative Statics

- The larger is **wealth inequality**, the easier it is to block entry, force exit
- Lower demand increases lobbying (as welfare loss reduced, bribes are cheaper)
- More **volatile** shocks increase fragility
  - not because shocks cause larger losses (always efficient to refinance)
  - Rather, a (mean-preserving) rise in volatility reduces profits after a shock, which increases lobbying intensity

## Empirical Implications

- Degree of default after large shocks higher in countries with worse political institutions
  - Narrow financial systems may be as stable as broad ones, but collapse after large shocks
- Profits drop less in less accountable, more corrupt countries after a crisis
- This effect may be due to higher exit rates
- Exit should be strongest in sectors with more external financial dependence.
- Anecdotal evidence on sharp increase in industrial concentration after crises

## Political feasibility of reforms

Caselli and Gennaioli (2008)

How do financial systems move from restricted to expanded entry ?

- Efficient and inefficient incumbents
- Talented and untalented entrepreneurs
- Market for control rights over incumbent firms
- Reforms may be of two types:
  - reducing entry barriers
  - improving investor protection

## Political feasibility of reforms

Caselli and Gennaioli (2008)

- Reducing entry barriers (deregulation) increases the ability of entrepreneurs to set up *new* firms
  - increased entry
  - opposed by all incumbents!
- Improving contracting (legal reform) *also* makes it easier to transfer *existing* firms to more efficient owners
  - increased efficiency, in- or decreased(!) entry
  - supported by inefficient incumbents!

Hence, legal reform more politically feasible

## Political feasibility of reforms

Caselli and Gennaioli (2008)

Dynamics:

- Legal reform today allows untalented incumbents to sell their firms at a high price and become outsiders.
- These new untalented outsiders favour future deregulation as they now gain when competition goes up

Hence, two-stage reform may be feasible:

First legal reform, then deregulation.

Transition towards free and efficient competition...

## Political consequences of crises

- Crises may come from excessive state spending, captured regulation or poor luck (e.g. commodity price shocks)
- But what are the consequences ?
- If crisis follows liberalization, may produce a (partially misguided) backlash against markets
- Crises do lead to greater alertness of dispersed parties, eg taxpayers, reduce lobbying influence

## The Political Economy of Corporate Control

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## Political Economy of Governance

What allocation of governance do voters prefer ?

- Voters have preferences on governance and labor rents based on their human and financial capital
- A political majority chooses to allocate control recognizing different investors' preferences on corporate investment.
- Choice of governance turns out to depend on the concentration of wealth.

## Political Economy of Finance

- Democratic voting models:
  - Voters choose policies directly; politicians can be trusted
  - Median voter models: Bias and Perotti (2002), Aghion-Bolton (1990), Berglof-Bolton (2003)
  - Electoral rules: Pagano-Volpin (2005).
- Lobbying models (Olson 1965, Grossmann-Helpmann 1994)
  - Politicians choose under influence by lobbying

## Results

- The model explains **clusters of governance and labor legislation** in democracies in terms of wealth distribution
- Implications on governance role of banks, labor, families and state, as well as the value of control.
- We provide an explanation for the “Great Reversals” in governance in the interwar period among developed democracies (Rajan-Zingales, 2003).

## Key drivers

- Human capital related risk cannot be hedged (while financial risk can be fully diversified).
- More profitable strategies are riskier.
- Social insurance is costly, so risk may be managed directly by controlling corporate risk-taking.  
→ Voters grant governance role to the investors whose risk choices most closely aligned to their own.

## Whom do voters choose ?

- Employees, with unhedged human capital, dislike risk, so they like control by banks.
  - They also favor control by the State and by concentrated equity.
  - Voters with larger holdings prefer diffused equity control, who likes risk and can diversify it.
- Concentrated financial wealth produces greater resistance against equity market control, favors weak minority investor protection

## Model

- Two political decisions by majority voting
- Voters decide about the level of labor rents  $H$
  - Voters choose the dominant investor in the economy, "banks" or "equity"
  - The interaction of the two decisions is quite important; a higher  $H$  implies greater risk bearing

## Firms

Identical firms on continuum  $[0,1]$   
Risky profits  $R$  are i.i.d., depend on firm's choice of strategy  
Strategy  $\sigma = \{\text{safe}, \text{risky}\}$  chosen by dominant investor  
Risky projects more profitable:  $E(R_S) < E(R_R)$   
Financial structure: identical across firms, with bank debt with face value  $B$ , possibly bonds with face value  $D$ , and equity.

## Households

- Each households endowed with firm-specific human capital, plus a stake in financial assets  $\alpha_i$
  - Return to human capital ("labor rents"):  $h_i(R_i)$
  - Firm profit net of stakeholder rents is  $R_i - h_i(R_i)$
  - Individual wealth:  $W_i = \alpha_i F + h_i(R_i)$
- where  $F$  is total financial wealth :

$$F = \int [(R_i - h_i(R_i))] di$$

### Investment choices

- CAPM utility over individual wealth

$$U = E(W_i) - (1/2)A \text{ var}(W_i)$$

where A is the coefficient of risk aversion

- In equilibrium, all individuals hold identical portfolios, with different shares  $\alpha_i$  of total financial wealth F

### Labor rents and seniority

- Voters with low shareholdings prefer higher E(h)
- A higher E(h) creates demand for risk reduction
- Easy to show that wages get highest seniority:

$$h_i(R_i) = \min(H, R_i)$$

Since labor income cannot be hedged, it is optimal for firms to offer insurance

- Next in seniority are banks
- Equity is residual

### Timing and Choices

1. Median voter chooses labor rents and the dominant investor.
2. Firms decide their strategy under the influence of the dominant investors.
3. Firms produce, then pay employees, creditors, and shareholders.

### Choice of corporate strategy by dominant investor

- Dominant equity chooses the riskier strategy for all H.
- If banks dominant, there is a  $H_0 > 0$  s.t.

if  $H < H_0$ , banks prefer low risk

if  $H > H_0$ , banks prefer high risk

Intuition: Equity gains from higher return; also a convex claim, gains from greater dispersion of returns

Bank: gets intermediate slice  $(H, H+B]$ , so favors less risk unless debt claim is very risky (quasi-equity)

### Choice of labor rents

If median financial wealth is higher than the average, H is chosen as low as possible:

if  $\alpha_m > 1$ , the median voter chooses  $H^* = 0$ .

(MV has more at stake as investor than as worker)

If his financial stake  $\alpha_m$  is less than the average, then H is set as

$$\int H_0^* G_\sigma(R) dR = (1 - \alpha_m)/A$$

### Effect of labor rents on governance

- If unequal distribution of financial wealth, the median voter receives less profits, wants higher H
- A high  $H^*$  increases risk bearing by workers, thus increases political demands for controlling risk of corporate strategies

## Choice of corporate governance

The preferences of individual voters on dominance depend on their financial holdings  $\alpha_i$ .

In general, there is an  $\alpha^*$  on  $(0,1)$  s.t.

- agents with  $\alpha > \alpha^*$  prefer equity, while
- those with  $\alpha < \alpha^*$  bank dominance.

Thus the median voter theorem applies.

## Family control

- The third major mode of corporate control is family ownership/groups.
- Concentrated ownership arises when investor protection is weak and control benefits are large.
- But if laws are endogenous, when would poor minority protection be chosen by a majority ?
- Large shareholders may be an alternative to bank control for a majority seeking safer strategies.

## Clusters of attributes: the Anglo-Saxon system

• **A market system is a democracy with moderate concentration of financial wealth.**

- Exhibits low labor protection, modest social insurance, capitalized pensions
- Strong minority protection, weaker banks, more dispersion of equity holdings, bankruptcy more favorable to equityholders
- Corporate strategies more dynamic and riskier, on average more profitable/innovative, with low state intervention

## The corporatist system

• **A corporatist system should be a democracy with high concentration of financial wealth**

- Major governance role for banks, state or families, high labor protection, social insurance and taxes, strong intermediaries, weak protection for minority investors, tough bankruptcy rules
- Corporate strategies more stable, more government intervention
- Weaker promotion of competition, in order to stabilize producer rents

## How can we test this ? Politics versus legal origin

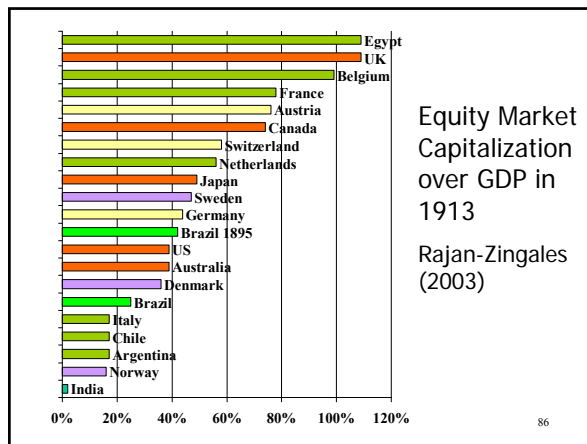
- Law and finance (LaPorta et al) relates financial development to legal origin, an exogenous factor correlated to current investor protection and financial development
- Yet relative development of securities markets has not been stable (Rajan Zingales 2003)
- Political shift may explain uneven evolution
- Incumbents oppose financial development may be overrun when economies face high opportunities to grow
- Lobbies reassert themselves when trade collapse (Rajan Zingales 2003).
- Ability of lobbies to block financial development strongest under civil law, because of less limited government

## Great Reversals

- In 1913, many French and German legal origin countries (Belgium, France, Austria) were **much** more financially developed than Anglo-Saxon countries such as the US or Australia (Rajan and Zingales, 2003)
- By 1980, their capital market were tiny, while in **all** Anglo-Saxon countries they grew
- Some countries held a stable position (Netherlands, Switzerland)

## Reversals

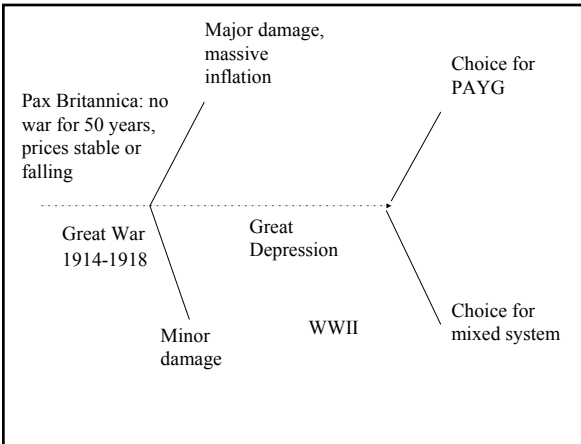
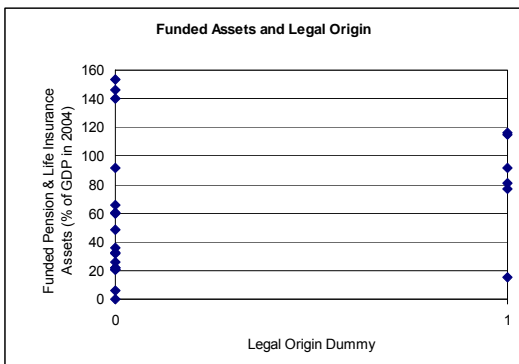
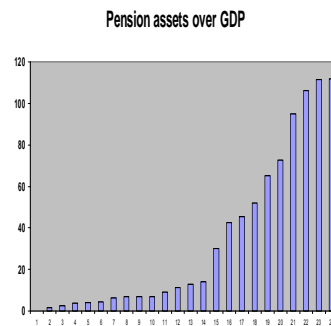
- US and Australia in 1913 have capital markets equal to 40% of Belgium, less than half than France or Austria
- Same as Germany, which already had a well developed banking system
- By 1980 all Anglo-Saxon countries double or more, while many EU capital markets shrink as low as 10% of previous ratio



## Why the Great Reversals ?

- Clear indication that legal origin is not a dominant factors leading to a ranking of relative financial development
- Yet the political argument has no model, so vague
- Unclear why legal structure really matters in the end

- Why did some countries transferred contributions to the state, while others invested them in financial securities ?
- Huge variation in degree of market funding; much more than for size of capital markets



### Political Pension Choice

- Around 2/3 of OECD countries suffered a major price shock in 1918-1945.
- All countries created universal pension systems after their price shock, if any
- The funding structure chosen then has persisted to this date

Conjecture:

- Private funding chosen in countries where the middle class maintained its support for financial markets
- State pension systems were chosen in countries where the middle class became impoverished

### Wealth shocks: The First World War and Inflation

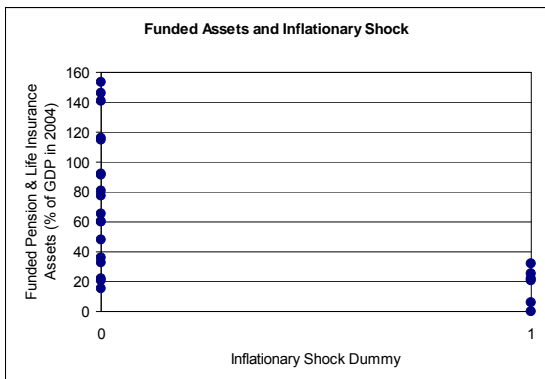
- In Germany, Austria, France, Belgium and Italy, financial savings were devastated by inflationary shocks after WWI
- The middle class in these countries was hard hit, shifted its political position relative to markets
- These countries shifted from market governance to bank, family or state control
- Low inflation countries had good returns (Liberty bonds), strengthened role of markets
- Explains the Dutch and Swiss anomalies.

### Price levels 1914-1949

	1914	1924	1939	1949
Australia	100	149	144	222
<b>Austria</b>	100	HYP	-	-
<b>Belgium</b>	100	469	748	2,785
Canada	100	149	129	203
<b>France</b>	100	395	763	12,830
<b>Germany</b>	100	HYP	-	-

### 1914 1924 1939 1949

<b>Italy</b>	100	481	516	23.665
<b>Japan</b>	100	207	231	HYP
Netherlands	100	145	115	246
Sweden	100	174	172	267
Switzerland	100	169	138	222
UK	100	176	162	281
USA	100	168	134	229



Variables	(1)	(2)	(3)	(4)	(5)	Countries without the Largest Shocks (SHOCK = 0)			
SHOCK	58.52 **	36.83 ***			-36.83 **	NA	NA	NA	NA
	(11.58)	(13.70)			(14.04)				
HIGH INFLATION		-43.38 **			-73.87 **	43.38 **		-73.87 ***	
		(18.68)			(21.29)	(18.53)		(21.29)	
MAX CPI			-0.15 ***						-0.189 *
			(0.028)						(0.090)
COMMON LAW				28.10	-45.73 *		9.67	-45.73 *	-12.143
				(18.36)	(22.52)		(20.38)	(22.52)	(24.500)
Nbr. of Obs.	24	24	22	24	24	18	18	18	16
R-squared	31%	48%	45%	7%	57%	26%	1%	38%	10%
Adj. R-squared	28%	43%	42%	3%	50%	21%	X	30%	X

Inflationary Shocks and Financial Development in 1980							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
SHOCK		-0.22 *** (0.050)	-0.16 ** (0.061)	-0.16 * (0.079)		-0.16 ** (0.057)	-0.15 * (0.072)
HIGH_INFLATION				-0.02 (0.125)			-0.01 (0.133)
MAX_CPI					-0.0005 *** (0.00014)		
CRASH1929						-0.002 (0.003)	-0.002 (0.003)
COMMON_LAW	0.23 *** (0.053)		0.19 *** (0.063)	0.18 * (0.001)		0.20 *** (0.068)	0.19 (0.116)
Nbr. of Obs.	16	16	16	16	16	16	16
R-squared	35%	26%	49%	49%	26%	51%	51%
Adj. R-squared	31%	21%	41%	36%	20%	39%	33%

Dependent variable is stock market capitalization over GPD in 1980

## Demographics and History

- Older populations prefer PAYG (Tabellini, 2000)
  - Use demography at pension choice (% pop. > 65)
- Experience with capital markets
  - Stock market crash of 1929
  - Long-run stock market returns
  - Long-run average inflation (1901-1945, 1920-1945)
- Historical financial orientation
  - Stock market capitalization in 1913

Table 5: The Effect of Demographics on Pension Funding						
Variables	(1)	(2)	(3)	(4)	(5)	(6)
SHOCK				-37.24 ** (17.42)	-35.07 ** (16.30)	-33.09 ** (16.07)
HIGH_INFLATION				-42.80 * (22.54)	-43.50 ** (19.28)	-44.32 ** (18.81)
POP2004_65+	-172.09 (341.43)			-20.44 (236.55)		
POP1950_65+		499.64 * (266.11)			77.60 (170.89)	
POP1950_Young			-177.75 (127.72)			-81.68 (118.97)
Nbr. of Obs.	24	24	24	24	24	24
R-squared	2%	6%	5%	48%	49%	49%
Adj. R-squared	X	2%	1%	41%	41%	42%

## Other political explanations

- Majoritarian versus proportional democracies (Svensson-Tabellini, 2005)
  - Proportional regimes need coalition governments, led to higher public spending
- Redistributive preferences
  - Median voters in more unequal societies will favor PAYG if more redistributive
  - NB no supportive evidence from fiscal redistribution

Table 6: Alternative Political Explanations of Pension Funding										
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
										Excluding Non-Democracies
SHOCK		40.03 ** (9.82)	-23.96 *** (8.41)		-52.48 ** (14.84)	-36.35 ** (14.60)	-50.07 ** (11.89)	33.95 ** (12.64)	63.21 ** (12.44)	44.14 *** (15.94)
HIGH_INFLATION			-42.72 *** (13.69)			-41.94 * (22.42)		-37.61 * (19.30)		-33.90 (20.04)
Income Inequality (Gini Cox)	-2.70 *** (0.953)	-1.91 ** (0.910)	-0.983 * (0.542)							
Majoritarian Electoral Rule Dummy				38.32 ** (15.07)	21.74 (17.45)	4.33 (18.77)				
NON-DEMOCRACY Dummy							-38.05 * (13.65)	-25.96 * (11.51)	NA	NA
Nbr. of Obs.	21	21	21	24	24	24	24	24	20	20
R-squared	25%	43%	63%	12%	35%	49%	40%	52%	32%	44%
Adj. R-squared	21%	36%	57%	8%	28%	41%	35%	45%	28%	37%

Table 7: Historical Experience with Financial Markets						
Variables	(1)	(2)	(3)	(4)	(5)	(6)
SHOCK	-57.98 *** (13.26)	-29.38 ** (12.88)	-54.63 *** (12.99)	-61.66 *** (13.23)	-59.44 *** (13.16)	-57.13 *** (11.02)
MARKET_CAP_1913	8.5 (38.89)					
Current MARKET_CAP		42.64 ** (17.57)				
CRASH1929			0.16 (0.624)			
STOCK_RETURNS				6.85 (4.30)		
Average Inflation 1901-1945					-5.58 ** (2.54)	
Average Inflation 1920-1945						-3.77 * (2.16)
Nbr. of Obs.	15	22	16	23	15	21
R-squared	33%	48%	25%	39%	39%	42%
Adj. R-squared	x	42%	14%	32%	28%	35%

## Cultural preferences

- Cultural orientation
  - Are Catholics more consociative, favor PAYG, while individualistic protestant favor PPA ?
  - No.
- Ideological change in response to shocks
  - After large shocks (war, price jumps) people become risk averse, seek “state protection”
  - State seen as more reliable as markets (?)

## Shift in preferences

- Does *uncertainty aversion* explains state vs private funding ?
- We introduce the Hofstede measure of cross country uncertainty aversion from 1960s
- Measures aversion to highly ambiguous situations (unquantifiable risk), strongly correlated at the national level
- Indeed negatively correlated with PPA
- Yet, not significant if price shocks also used
- Consistent with preference shift, but not as main channel

**Table 8: The Effect of Culture on Pension Funding**

Variables	(1)	(2)	(3)	(4)	(5)	(7)	(8)	(9)
SHOCK		-35.87 *** (8.638)	51.416 ** (19.304)		-23.655 *** (6.648)		-54.69 ** (12.80)	-34.481 *** (12.860)
HIGH_INFLATION				-54.3 *** (19.64)	-46.669 ** (19.519)			-41.994 ** (18.874)
Uncertainty Aversion (UA)	-1.08 ** (0.196)	-0.813 *** (-0.179)	-0.838 ** (0.208)	-0.338 (0.244)	-0.265 (0.215)			
SHOCK * UA			0.198 (0.218)					
HIGH_INFLATION * UA								
% Catholics						-0.375 * (0.213)	-0.24 (0.21)	-0.190 (0.177)
Nbr. of Obs.	23	23	23	23	23	24	24	24
R-squared	38%	49%	49%	58%	63%	8%	34%	50%
Adj. R-squared	35%	44%	41%	54%	57%	4%	28%	43%

## Informative exceptions

- Switzerland and Netherlands are civil law countries, resp. French/German legal origin.
- Both have developed financial markets. Hard to square with law and finance.
- Idea: These countries avoided devastation in the first war world. The middle class kept its savings, and maintained political support for markets and equity control.

## Conclusions

- A financially solid median class is essential for support for a market environment.
- Financial systems shaped by politics more than legal origin. Regulation and governance will change when a political majority demands it.
- Current correlation with legal origin reflects large shocks from war experience (Anglo-Saxon countries were allies).
- Diffusion of shareholdings can have major effects

## Crises in developed markets

- More democratic regimes encourage more entry and competition; may produce own instability
- More acces to credit implies riskier lending (as marginal borrower has less collateral)
- More entry means lower profits, reduced bank charter value
- This reduces intermediaries' incentive to solvency
- Did banking industry lobbying also contributed directly to risk shifting ?

## Lobbying on risk shifting

- Did the last crisis arise from captured regulation as well ?
- A 2005 amendment to the US Bankruptcy Code (and related 2004 EU legislation) vastly extended a special treatment for financial secured credit and financial derivatives, allowing immediate repossession of collateral.
- This new proprietary right, opposable to all third parties, contrasts with principles of automatic stay in bankruptcy which
  - blocks secured creditors and non-debtors from seizing collateral without court approval.
  - prevents cross-default clauses, common in derivatives.
- Credit default derivatives are equivalent to insurance policies, yet insurers are prevented from terminating a policy when a company files for bankruptcy.

## Effect of bankruptcy law changes

- This heavily lobbied change was based on argument that delayed enforcement may lead to contagious collapse for a single firm.
- Static effect is to strengthen rights for some lenders or insurers, and to expand credit. But they undermine other claims, and reduce monitoring unless fully recognized
- Individual liquidity runs less frequent, but collective ones more severe.
- In 2007-2008, rapid withdrawals of secured overnight (repo) funding and derivative cross default provisions drew liquidity rapidly, forcing fire sales and broadening panic.

## Bankruptcy exceptions

- Are exceptions for repos and derivatives are justified (Skeel, 2009) ?
- Repo are actually sales, NOT CREDIT. But why is repo interest tax deductible then ?
- The ability to front run other less attentive or insured lenders allowed to avoid losses while shifting them to other markets
- Uncertainty over the assignment of assets and liquidity exposure cause panic and may lead to Knightian uncertainty (Khrishnamurti, 2009)
- Especially true in interconnected markets based on short term lending, such as the repo or interbank markets (Allen Basus and Carletti, 2010)