

Inequality, Efficiency, and the Rule of Law

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Motivation -1

- A growing literature identifies the secret of economic growth in better institutions.
- Which institutions?
 - 1) Protection of property rights
 - 2) Competition
- The question, then, is why some countries choose “good” institutions and others bad ones.

Motivation -2

- To answer this question we need to enter the political economy of institutions.
- But if we try to endogenize institutions, what can we take as exogenous?
- The “initial” endowment, in terms of
 - Distribution of ownership
 - Distribution of talent
 - And political institutions

Our Goal

To determine how

- the distribution of ownership,
- the distribution of talents,
- the way the political system transforms preferences into political decisions

determine the support for

1. competition
2. rule of law

Outline

- Simple model linking ownership and talents to support for different institutions
- Derive a few testable implications on
 - Individual preferences
 - Outcomes
- Test them using data from the WVS
- Test them with data from within Italy
- Conclusions

Results -1

- People's attitude (especially the one of the masses) toward competition is crucial for the survival of markets (especially in a democracy).
- People's attitude toward competition improves when there is
 - Better education
 - Better health
 - Country open to trade

Results -2

- More concentration of ownership/income leads to
 - Less support for markets
 - Worse competition policy
 - Worse rule of law
- Efficiency of the owners is a mitigating factor

Model -1

- Individual payoffs are determined by
 - the initial distribution of property (for simplicity land),
 - the distribution of talent,
 - the type of the legal regime.
- We consider only two extreme types:
 - 1) anarchy: there is no rule of law and more powerful people can grab resources from the less powerful ones
 - 2) a rule of law: stealing is not tolerated and competition prevails.

Model -2

Under anarchy, individual i payoff is given by

$$W_i^A = W^A(\ell^i, \ell^i - \bar{\ell}) = p^A \ell^i + p^A \mathbf{g}(\ell^i - \bar{\ell})$$

where ℓ^i = land of agent i

$\bar{\ell}$ = average size of land holdings

p^A = price of output under anarchy

\mathbf{g} = parameter of extent of resource-grabbing

Model -3

Introduction of rule of law has three effects:

- 1) It eliminates stealing
- 2) Agents can invest and increase the productivity of their land
 - Investment has a cost I and a payoff which depends upon the innate talent qi
- 3) Price of output (wheat) can differ from the one prevailing under anarchy.

Because of increased productivity it is likely that

$$p^R \leq p^A$$

Model -4

Under rule of law:

If individual i invests, his payoff is given by

$$W^R = W^R(\ell_i, \mathbf{q}_i) = p^R \mathbf{q}_i \ell_i - I$$

If he does not invest, his payoff is given by

$$W^R = p^R \ell_i$$

Model -5

Individual i invests iff

$$p^R q_i l_i - I > p^R l_i$$

Investment more likely if

- 1) Cost of investment (I) is low;
- 2) Individual is high talent;
- 3) He owns enough land

Results - 1

Theorem 1: We get 3 regimes:

- 1) Not too much stealing in anarchy + high price in rule of law => everybody prefers rule of law
- 2) Lower price in rule of law =>
 - Rich prefer rule of law
 - Poor prefer anarchy
- 3) Lower price in rule of law + more stealing =>
 - Rich prefer anarchy
 - Middle prefer rule of law
 - Poor prefer anarchy

Results - 2

If we assume:

- 1) Equal distribution of talents but varying distribution of wealth
- 2) A purely democratic system, then we have:

Theorem 2:

- i) A reduction in the investment cost I increases the likelihood a country will adopt rule of law;
- ii) An increase in the price under rule of law increases the likelihood the country will have rule of law;
- iii) An increase in talent increases the likelihood of rule of law

Empirical Implications -1

From the IC constraint we have:

Ceteris paribus, individual attitude towards market increases:

- i) With wealth (income)
- ii) With education (talent)
- iii) With reduction in cost of investment (health, social status)

Empirical Implications -2

Theorem 1 implies:

- 1) In countries with low rule of law (high stealing)
=> Rich relatively less pro markets
- 2) When the price impact of competition is smaller
(open economy)
=> Poor relatively more pro market
(differential pro market attitude of the rich less pronounced)

Empirical Implications -3

Theorem 2 implies:

- i) Financial development \Rightarrow increases the likelihood a country will favor competition
- ii) More openness \Rightarrow increases the likelihood the country will have rule of law
- iii) More education \Rightarrow increases the the likelihood a country will favor competition

Empirical Implications -4

- Since middle owners are the most pro rule of law and pro markets, then we expect:

More concentrated is the ownership,

- Less support for competition
- Less support for rule of law
- This is even more so if we expect concentrated owners are more able to throw their weight around.

Two Sets of Implications:

- One based on individual preferences
- The other on equilibrium outcomes
- How do we test the first?
 - Using self declared preferences obtained from the World Value Survey.
- How do we test the second?
 - Cross country data
 - Within country data

Pros and Cons of the 2 Samples

- Cross countries data:
 - We have people's actual preferences
 - We can study how they map into outcome
 - But no direct data on
 - holdings
 - efficiency
- Within country data:
 - No actual preferences
 - No measure of competition
 - But
 - Actual land holdings
 - Some measure of efficiency

The WVS Sample

- WVS is a collection of questionnaires administered to
 - 168,482 individuals from 66 countries
 - between 1981 and 1997.
 - We start from this sample and we eliminate:
 - 1981 because the question we are interested is not present
 - All the countries for which we could not reconcile the religion data with the CIA data (see GSZ, JME 2003)
 - Data for which the variable social status was misclassified
- => End up with a sample of 91,541 obs for 51 countries

The Question:

How would you place your views on this scale?

1 2 3 4 5 6 7 8 9 10

Competition is harmful.

Competition is good

It brings out the worst in people

It stimulates people to work hard and develop new ideas

Variable	Mean	Median	Std. Dev.	Min	Max
competition	7.38	8	2.55	1	10

Should We Believe to a Questionnaire?

	Number of procedures	
Attitude toward competition	-0.964 (0.9213)	-2.3776** (1.1039)
Log of GDP per capita		-3.1293*** (0.9129)
Observations	38	37
R-squared	0.017	0.299

Other Variables

	Mean	St. Dev.	Min.	Mas.	Obs.
Health	2.690	0.927	0	4	91,203
Male	0.487	0.500	0	1	91,541
Young (<30)	0.290	0.454	0	1	91,541
Old (>60)	0.169	0.375	0	1	91,541
Education	18.202	4.857	6	35	79,617
Upper class	0.055	0.228	0	1	89,258
Middle class	0.601	0.490	0	1	89,258
Income	4.671	2.593	1	10	78,399
Atheist (0,1)	0.144	0.351	0	1	88632
Catholic (0,1):	0.411	0.492	0	1	87900
Protestant(0,1)	0.123	0.329	0	1	87900
Jewish (0,1)	0.002	0.049	0	1	87900
Muslim (0,1)	0.077	0.267	0	1	87900

Health status (0,4)	0.1176*** (0.0119)
Male (0,1):	0.2957*** (0.0199)
Young (18-30)	-0.1238*** (0.0232)
Old (over 60)	0.0266 (0.0310)
Education (year at which one stc	0.0114*** (0.0024)
Upper class	0.3758*** (0.0498)
Middle class	0.2429*** (0.0240)
Second quintile of income	0.0808*** (0.0284)
Third quintile of income	0.1681*** (0.0313)
Fourth quintile of income	0.2146*** (0.0370)
Fifth quintile of income	0.5287*** (0.0443)
Atheist (0,1)	-0.1211*** (0.0311)
Catholic (0,1):	0.1833*** (0.0321)
Protestant(0,1)	0.2215*** (0.0444)
Jewish (0,1)	0.4353** (0.2088)
Muslim (0,1)	-0.1866** (0.0731)
Year dummies	Yes
Country fixed effects	Yes
Observations	61798
R-squared	0.067

Implications -1:

As predicted individual attitude towards competition increases:

- i) With income
- ii) With education
- iii) With health and social status
- Also interesting:
 - Males are more pro competition (more testosterone?)
 - Young are less pro competition (more leftist?)

Subtler tests -1

- Empirical Implications 2 indicate that *ceteris paribus* in
 - Countries where easier to steal rich relatively less pro markets
 - Countries more open, poor relatively more pro markets
- We test this proposition by interacting our explanatory variable with
 - One dummy for countries in the lowest quartile of rule of law
 - One dummy for countries in the upper quartile of openness

Explanatory variable interacted with	Low rule of law	High openness
Health status (0,4)	0.011 (0.0337)	-0.0662* (0.0346)
Male (0,1):	-0.0515 (0.0549)	-0.0457 (0.0588)
Young (18-30)	0.1667** (0.0657)	0.1887*** (0.0626)
Old (over 60)	-0.1028 (0.0820)	-0.1366 (0.1126)
Education (year at which one stopped)	0.0183*** (0.0071)	0.0226*** (0.0067)
Upper class	-0.1917 (0.1306)	-0.4541*** (0.1435)
Middle class	-0.2073*** (0.0637)	-0.1353* (0.0765)
Second quintile of income	-0.1407* (0.0797)	0.023 (0.0817)
Third quintile of income	-0.0174 (0.0856)	0.0628 (0.0918)
Fourth quintile of income	-0.0586 (0.0992)	0.0095 (0.1105)
Fifth quintile of income	-0.1937* (0.1102)	-0.3585** (0.1628)

Subtler tests -2

- If education affects also the cost of investing, then the positive effect of education should be disproportionately larger for lower income brackets.
- We interact the education variable with different income quintile
- Effect is stronger in lower income brackets

Education * First quintile of income	0.0215*** (0.0043)
Education * Second quintile of income	0.0044 (0.0040)
Education * Third quintile of income	0.0134*** (0.0045)
Education * Fourth quintile of income	0.0114* (0.0059)
Education * Fifth quintile of income	0.0015 (0.0073)

Second set of implications

- For aggregate implications we have three variable
 - The average attitude toward competition
 - The actual competitive outcome
 - Regulation (IEF regulation of business where 1 is bad and 5 is good)
 - Barriers to entry (# procedures to open a business)
 - Law and order tradition (International Country Risk Guide, where 1 is bad and 6 is good)

Macro Implications -1

i) Financial development => increases the likelihood a country will favor competition

Dep. Var.:	Average attitude toward competition		
	OLS	OLS	IV
Financial dev (accounti. stand.)	0.0097 (0.0063)	0.0224*** (0.0061)	0.0420** (0.0165)
Log of GDP per capita		-0.4736*** (0.1379)	-0.7051*** (0.2017)
Observations	25	25	25
R-squared	0.071	0.333	0.136

Macro Implications -2

ii) More education => increases the the likelihood a country will favor competition

Dep. Var.:	Average attitude toward competition		
	OLS	OLS	IV
Education	0.0641** (0.0253)	0.0747*** (0.0260)	0.2349* (0.1258)
Log of GDP per capita		-0.1831 (0.1238)	-0.0547 (0.1647)
Observations	49	45	45
R-squared	0.114	0.216	

Macro Implications -3

iii) More openness => increases the likelihood the country will have rule of law

Dep. Var.:	Law and order tradition		
	OLS	OLS	IV
Openness	0.0346*** (0.0100)	0.0172*** (0.0052)	0.0157** (0.0072)
Log of GDP per capita		1.8844*** (0.1859)	1.8988*** (0.1895)
Observations	34	34	34
R-squared	0.224	0.812	0.812

Macro Implications -4

- More concentrated income, less support for competition and rule of law

	Attitude towards competition	# proced. to open a business	Law and order
Gini concentration of income	-0.0089 (0.0085)	0.1018* (0.0564)	-0.0405** (0.0182)
Log of GDP per capita	-0.2657** (0.1305)	-2.2412** (0.9246)	1.8125*** (0.1242)
Observations	44	38	33
R-squared	0.152	0.314	0.82

Tentative Analysis -1

- Whose opinion count more for the aggregate outcome?
- We distinguish between the attitude toward competition of
 - Rich (top quintile)
 - Poor (lowest quintile of income)
 - Middle (mid quintile)

	Mean	St. Dev	Min.	Max
Rich	7.802	0.493	6.834	9.000
Middle	7.525	0.597	6.301	8.688
Poor	7.219	0.689	5.681	8.989

Dep. Var.:

Number of procedures to open a business

Log of GDP per capita	-3.0551*** (0.8677)	-3.2404*** (0.9541)	-2.5429*** (0.9274)	-2.3407*** (0.7843)	-2.5349** (0.9438)	-1.8005** (0.8797)
Attitude towards competition of the poor	-1.8398** (0.7321)			-1.6379** (0.7695)		
Attitude towards competition of the middle class		-1.8896* (0.9457)			-1.6212 (1.0017)	
Attitude towards competition of the rich			-0.4155 (1.0444)			0.1121 (1.1515)
High democracy *attitude of the poor				-0.2474* (0.1318)		
High democracy *attitude of the middle class					-0.2223 (0.1401)	
High democracy *attitude of the middle class						-0.2414 (0.1434)
Observations	37	37	37	37	37	37
R-squared	0.312	0.288	0.208	0.356	0.327	0.255

Tentative Analysis -2

- Poor and middle class opinion is the one that matter most for the final outcome.
- It matters more in more democratic regimes (democracy score ≥ 8).

The Italian Sample

- Advantages:
 - Detailed data on ownership distribution of land (in 1946)
 - Efficiency (production per hectare)
 - Same institutional background
- Disadvantage:
 - Only measure of rule of law is a measure of judicial inefficiency (# of years it takes for a 1st degree trial to be completed).

Summary Statistics

	Mean	St. Dev.	Min	Max	Obs.
Duration of trials	3.77	1.42	1.44	8.32	90
Gini concentration of land	0.77	0.07	0.59	0.91	90
Income per hectare	312.94	215.47	8.75	876.17	90
Gdp per capita	23.81	8.98	11.37	54.76	92

Dep. Var.:

Duration first degree trials

Gini concentration of land ownership	2.6566*	2.6737*	2.4797*
	(1.4581)	(1.4664)	(1.4785)
Southern region dummy	1.8079***	1.7211***	1.6968***
	(0.2734)	(0.3460)	(0.3469)
Per capita GDP		-0.0071	0.0001
		(0.0133)	(0.0125)
Income per hectare of big landwoners			-0.0008*
			(0.0005)
Observations	88	88	88
R-squared	0.40	0.40	0.41

Conclusions -1

- People's attitude (especially the one of the masses) toward competition is crucial for the survival of markets (especially in a democracy).
- People's attitude toward competition improves when there is
 - Better education
 - Better health
 - Country open to trade

Conclusions -2

- More concentration of ownership/income leads to
 - Less support for markets
 - Worse competition policy
 - Worse rule of law
- Efficiency of the owners is a mitigating factor

Policy Conclusions

Capitalism needs a heart for its own good

- Without
 - Diffused healthcare
 - Diffused education
 - Less inequality

hard to maintain political consensus in favor of
markets