Places that Fail and Endogenous Institutions

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Mechanism Design Versus Institutional Design

- mechanism design theory in principle can be used to study institutions

- two main deficiencies

    - collusion a big practical problem; no systematic theory of collusion; treated by *ad hoc* means if at all

    - possibility, sources and consequences of institutional failure not considered

will speak about the latter

Consequences of Failure

- costs of failure plays an important role in the literature on bankruptcy

- Weiss [1990] direct costs about 3% of book value of debt; Warner [1977] direct costs about 1% of value prior to bankruptcy

- Nikolaos et al [2014] about 2% annual excess deaths in Greece due to crisis

- Syria, French and Russian revolutions?

What Happens Next?

- Russia

  Imperial → Revolution → Communist; welfare comparison of imperial versus communist Russia?

- Rhodesia/Zimbabwe

  white rule → civil war → majority rule; low welfare became even lower welfare

- El Salvador

  dictatorship → civil war → democracy; welfare probably improved

- United States

  British rule → war → domestic rule; resulted in very strong institutions

Needed...

Systematic data about the cost of institutional failure and the long term consequences for institutions

- regression to the mean?

Causes of Failure

- proximate cause: war or revolution

- unexpected example: unification of Germany in 19th Century driven by revolution of 1848

- underlying causes?
    - weak institutions (almost by definition)
    - outside intervention (Ukraine...)
    - recession
    - debt (French revolution; Argentina; Greece)

Hypotheses

- secular decline (Olson)

  cumulation of small defects

  in Olson – interest groups that eventually strangle the economy

- bad luck (us – evolutionary)

  bad coincidences

  economy weak; opponents especially well organized; unusual weakness of government; disease

- evidence?

  Olson gives some, but in fact interest groups seem to wax and wane

Decline of the Roman Empire

- Germans

- recession

- disease

as many theories as there are historians

yet each one of these things and several in combination happened many times during the course of the Empire and it recovered

historians always talk about how the "real decline" started at such and such a date, then there is some false period of prosperity before things really go to hell

  - looks a lot more like these "causes" wax and wane until too many things go wrong at once

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The Theory and the EU

- the basic theory says "strong state institutions live long and prosper, weak ones do not"

- the EU has particularly weak state institutions

    - weak governance (high degree of consensus among member states required)

    - limited (but not non-existent) ability to force compliance of member states

    - no direct tax authority

    - no police or military

    - no common language or education

About the EU

- either the institutions will become stronger or the EU will fail

- every member state (UK, Switzerland currently) wants to pick among a menu of options rather than accept the package

- all of the weaker economies would like to be able to undertake borrowing guaranteed by the stronger economies ("end of austerity!!")

- the point is that no member state wants the entire package and unless they are forced to comply, if each chooses a different set of menu options there is no "EU"

- the one simple and low-cost thing the EU could do but doubtless will not:

    make English the official second language and subsidize English language education in the schools

The Economic Profession

- we do not consider the costs of institutional failure

- we have no theory about the "right" level of national defense

- we do not consider the impact of public education on social cohesion

- yet we spend tons of time and effort assessing things like the economic consequences of minor changes in subsiding early childhood education

- psychologists see some individual behavior and think it looks irrational and immediately assume it is so

- we rightly look deeper to see if perhaps it serves some useful role

- economists see some government behavior and it looks inefficient

- we need to be more like Earl Thompson – we need to look deeper to see if perhaps it serves some useful role

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Telecom Italia

- the Spanish shouldn't own it because it poses a national security threat?

- rightly dismissed as silly and self-serving

- but the logic of the argument should not be thrown out

- familiar argument: subsidize the automobile industry to have excess capacity in case we need to build tanks (also aerospace, merchant marine)

- just because an argument is self-serving and benefits a particular group does not make it wrong

- yet we throw them away without scrutiny

- should not "throw out the baby with the bath water"

- need proper tools or a "proper model"

Towards a Model

Mechanism design problem old part:

    players $i = 1, ..., N$

    outcomes $y \in Y$ utility $u^i(y)$ and welfare $w(y)$

    feasible game forms $G \in \Gamma$ with actions $a^i \in A^i$ with $G(a) \in Y$

    $A^*(G)$ set of equilibria for the game G

Institutional design problem new part:

    $\pi(y)$ probability of institutional failure

    C welfare cost of institutional failure

The Three Objectives

- the "economic" analysis: what economists actually do

  choose $G \in \Gamma$ and $a \in A^*(G)$ to maximize $Ew(y)$

- what economists should do

  choose $G \in \Gamma$ and $a \in A^*(G)$ to maximize $Ew(y) - \pi(y)C$

  yes, we could have done this, but we never have

- what evolution does (a positive theory of institutions we see)

  choose $G \in \Gamma$ and $a \in A^*(G)$ to minimize $\pi(y)C$

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Tax Them All

- a puzzle: the tax system does not transfer that much income

- we tax the middle class and pay the same people back with government services and subsides

- good example: Sweden – child care, health care, transportation, etc. etc.

- economists look and see inefficiency

- but this type of government behavior is ubiquituous

- so maybe we should look deeper?

- taxes are hard to avoid or use punitively

- benefits can be selectively withheld – hence used to induce "socially desirable" behavior

A Model of Social Adhesion

- a continuum of identical players

- institution designer sets a tax rate $\tau \in [0, 1]$

- players suffer i.i.d. uniform shocks $\eta^i \in [0, 1]$

- players produce output y^i at cost $c(y^i)$

- players choose "adherence" $a^i \in \{0, 1\}$ at a cost of $a^i \zeta(\eta^i)$ where $a^i = 1$ means "adhere"

- adherence means: be deferential to government authority, send your children to listen to government propaganda, speak the official language, report people who violate this social norm and so forth

Assumptions

y is mean output ϕ is the fraction of adherents, $x = y - c(y)$

we assume that $c(y)$ is smooth, strictly differentiably increasing and strictly differentiably convex with $c'(0) < 1$

we assume that $\zeta(\eta^i)$ is smooth and strictly differentiably increasing and that $\zeta(0) = 0$

taxes are collected and distributed equally among adherents only

we let b^i be the transfer payment, zero for non adherents and $\tau y/\phi$ for adherents, that is $b^i = a^i \tau y/\phi$

collapse occurs with a probability $\pi(x, \phi)$ depends on the net output $x = y - c(y)$ the fraction of adherents ϕ

smooth and strictly differentiably decreasing in x, ϕ

Preferences

per capita cost of collapse C

utility $(1 - \tau)y^i + b^i - c(y^i) - \pi C - a^i \zeta(\eta^i)$

plugging in for b^i

$(1 - \tau)y^i - c(y^i) + a^i[\tau y/\phi - \zeta(\eta^i)] - \pi C$

aggregate adherence cost $Z(\phi) = \int_0^\phi \zeta(\phi')d\phi'$

standard economic welfare x

public good analysis $x - \pi(x, \phi)C - Z(\phi)$

evolutionary $-\pi(x, \phi)$

The Optima

- "economic" welfare: zero taxes

- "actual" welfare: positive taxes (depends on boundary condition)

- evolutionary success: even higher taxes

the "economic" and "evolutionary" level of taxes are independent of the cost of failure C; the public goods optimal tax is strictly increasing in the cost of catastrophe

Demography

the institution designer chooses a social norm

θ the minimum land requirement for a man to have one wife

women are prohibited from giving birth out of wedlock

there is one unit of land

each wife has k children so population is k/θ

Production

net output is $y = ABf(n/B) - gn$

where A production technology B is urbanization technology

f the production function has diminishing returns to scale, bounded above

(so urbanization relieves the diminished return due to congestion on the one unit of land)

g is the output requirement to maintain a worker

$\pi(y)$ is decreasing – more surplus = more resources to defend against outsiders [or even to reduce global warming...]

Demographic Analysis

- welfare analysis with or without π, C is oddly silent

- if we are Malthusians, then welfare is given by total population and we get the Malthusian theory: $ABf(n/B)/n = g$

  so that output per capita is always at subsistence regardless of technology A, B

- evolution in fact minimizes $\pi(y)$, which is to say, maximizes y meaning choose n to to satisfy $Af'(n/B) = g$

- so urbanization just increases population as in Malthus

- but large enough increase in production technology must increase per capita output

Extension of the Franchise

two groups the elite and the poor

government may be either autocratic – run by the elite

or democratic – run by the poor (assumed a majority)

in autocracy poor may revolt: assumed so costly for elite that it never happens in equilibrium

in autocracy elite may extend franchise to poor to avoid revolution

in democracy elite may carry out coup

government determines taxes: bad for elite, good for poor

Economic Fundamentals

fraction θ of human capital held by poor

probability σ of recession

fraction α fraction of normal income received in a recession

fraction of income retained in revolution by the poor μ

fraction of income retained in coup by the elite ϕ

initially we start at autocracy

Markov Perfect Equilibrium

characterized by two function

$\overline{\phi}(\theta, \alpha, \sigma)$ and $\overline{\mu}(\theta, \alpha, \sigma)$ both increasing

if $\mu < \overline{\mu}(\theta, \alpha, \sigma)$ then the equilibrium is autocracy (too costly for threat of revolt by poor to be meaningful)

otherwise

if $\phi < \overline{\phi}(\theta, \alpha, \sigma)$ then there is democracy (too costly for elites to have a coup)

if $\phi > \overline{\phi}(\theta, \alpha, \sigma)$ the regime changes whenever there is a recession, with an extension of the franchise if there is a recession under autocracy and a coup if there is a recession under democracy

Different Institutions

six different combinations of these parameters:

two different types of recessions: strong h and mild weak w

> strong recession: low α_h and low probability σ_h (no active policy, limited government)

> weak recession: high $\alpha_w > \alpha_h$ and high probability $\sigma_w > \sigma_h$ (active monetary and fiscal policy with a big government sector)

> active policy comes cost in overall output so

$$\sigma_h(1 - \alpha_h) < \sigma_w(1 - \alpha_w)$$

> expected cost of recession is higher in the weak recession regime

Types of Inequality

assume $\overline{\phi}, \overline{\mu}$ do not depend strongly on α, σ

three levels of inequality, low $\overline{\theta}$, intermediate $\hat{\theta}$, high $\underline{\theta}$

where low means autocracy, intermediate means democracy and high means regime switching

assume also that low inequality interferes with economic efficiency and reduces output by a factor β

assumptions about state power as a fraction of income

democracy needs to collect taxes Γ_d

autocracy needs state power to keep μ low so $\Gamma_a > \Gamma_d$

autocracies spending more on the military than democracies is a robust finding of the empirical political science literature

Evolutionary Success

state power in the weakest state

strong recession societies always weaker than weak recession societies because they always have less state power during a recession

state power in regime switching society in recession always less than democracy, since in addition to recession there is a coup

strongest institutions: weak recessionary intermediate inequality democracy or low inequality autocracy

depends on $\beta \Gamma_a > \Gamma_d$ in which case autocracy does better