Pillars of Prosperity
State Capacity in Economic Development

2010 Yrjö Jahnsson Lectures

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A. General Introduction

Weak states – Map

Central concept in development policy community

subject of various initiatives

What is a weak (fragile) state?

it can not support basic economic functions, raise any
substantial revenues, deliver basic services, keep law and order, ...

Quite frequent phenomenon

perhaps 20-30 states failed or seriously weak
equally many weak, others in risk zone
concentrated in sub-Saharan Africa, south/central Asia
Development clusters

Strong links with *income* (per capita) and *violence*

- weak states in countries with massive poverty and societies plagued by internal conflicts
- developed countries: high income, institutions work, policies in good order, conflicts resolved peacefully, ...
- strong clustering of state capacity in different dimensions
  - few strong economies with weak states

Multidimensional problem — *the* development problem?

- clustering of low income, violence, and a number of dysfunctional institutions
Example of clustering – Figures 1 and 2

Two forms of *state capacity*

extractive capacity: e.g., infrastructure to raise taxes from broad bases, like income or value added
productive capacity: e.g., infrastructure to enforce contracts or protect property rights

Illustrate with two specific measures

alternative measures produce similar results
*fiscal* capacity: total taxes as share of GDP, average from the late 1970s onwards (IMF data)
*legal* capacity: index of protection of property rights, average over the 1980s and 1990s (ICRG data)
strongly positively correlated with each other, income per capita, and prevalence of civil war
Figure 1  State capacity and income
Figure 2  State capacity and civil war
How understand such patterns in the data?

Basically need to pose – and answer – three general questions

(i) what forces drive building of different state capacities, and why do these capacities move together?

(ii) what forces drive different forms of political violence?

(iii) what explains clustering of institutions, income, and violence?
Scope of the lectures

Report on joint research on these questions

look at the politics and economics of state building and political violence in the process of development
try to understand the observed development clusters of institutions, income, and violence
aim at constructing new theory and uncovering new evidence
hope to bring state capacity into mainstream of economics

Pool together three broad agendas

study of long-run development and its determinants
importance of history in explaining today’s patterns of development
interaction of economics–politics in shaping how economies work
Plan for the lectures

Build on many earlier strands of scholarship
spoken lectures will not do justice to these by proper references

Overall plan

Lecture 1: Overview + Basic model
Lecture 2: Fiscal and legal capacity
the evolution of economic institutions, taking political
institutions and outcomes as given
Lecture 3: Political violence
endogenizing political outcomes (in the form of violence),
but taking political institutions as given
Lecture 4: Putting pieces together + Development assistance
the joint evolution of economic and political institutions
But first an overview

Scope of overview

- explain basic ideas of theory and predictions
- show some correlations in the data
- outline the lectures to follow

Road map of overview

1. State capacity
2. Political violence
3. Sum up and plan of campaign
1. State capacity
   Existing research

Ignored, or assumed, in mainstream economics

(macro) development economics sees income per capita, not state institutions, as central outcome
capacity to raise revenue from certain tax bases basically assumed in development, public finance, political economics, ...
as is capacity to enforce contracts or to protect investors

Important in political and economic history

fiscal powers important in themselves, for military success and for state development, more generally
war major motive to build fiscal capacity
‘war made the state and the state made war’ (Tilly, 1990)
this work ignores building of legal capacity
Theoretical approach – Main building blocks

Distinguish institutions and policy

- incumbent government’s choice of taxation and regulation limited by fiscal and legal capacity, and political institutions

Incumbents can invest in fiscal and legal capacity

- purposeful decision: current costs vs. future expected benefits
  - ... with uncertainty about future use of revenue: spending on public goods vs. redistribution

levels of non-tax revenue: resource rents, or (cash) aid

incumbency: takeover by opposition group
Three kind of states

Common-interest states

government revenue mainly used for public goods
  e.g., defense against threat of external conflict
any incumbent group invests in fiscal capacity

Redistributive states

government revenue used to redistribute, with incumbent more
  or less constrained by political institutions
incumbents invest in fiscal capacity as enough political stability

Weak states

government revenue used for redistribution, but non-cohesive
  political institutions and high levels of political instability
no incumbent invests in fiscal capacity of the state
Complementarities

Investment in one type of state capacity reinforces the other

if future fiscal capacity higher, additional fiscal benefits of legal capacity, which expands market incomes
if future legal capacity higher, market incomes and tax bases higher, which raises motive to invest in fiscal capacity

Implications of complementarity

natural way to think about forces behind observed clustering determinants of legal and fiscal capacity should be common

Which major determinants does this approach suggest?
State capacity and use of public revenue

Common vs. redistributive interests

- Legal capacity
- Fiscal capacity
A look at the data: External conflict – Figure 3

Partial correlations: common-interest spending and state capacity?
Gauge past demand for public goods by prevalence of war time in external war 1816/independence – now (COW data)
Illustrate results for tax share and property rights index
same variables as in Figures 1 and 2
(correlations robust also for other proxies)
hold constant other determinants, such as cohesive political institutions, plus legal origins, and continental location data consistent with prediction
Figure 3  External war and state capacity
State capacity and political institutions

Common vs. redistributive interests

Cohesiveness of political institutions

Legal capacity

Fiscal capacity
Partial correlations: cohesive institutions and state capacity?

Measure cohesive political institutions by constraints on executive

time with high(est) score 1800/independence – now (Polity IV data)
similar results for prevalence of parliamentary democracy
control for same variables as earlier
again, data conform with prediction
Figure 4  Political institutions and state capacity
State capacity and political stability

- Common vs. redistributive interests
- Cohesiveness of political institutions
- Political stability
  - Legal capacity
  - Fiscal capacity
State capacity and economic structure

- Common vs. redistributive interests
- Cohesiveness of political institutions
- Resource or (cash) aid independence

Political stability

Legal capacity

Fiscal capacity
State capacity and income

Common vs. redistributive interests

Cohesiveness of political institutions

Resource or (cash) aid independence

Political stability

Legal capacity

Fiscal capacity

Income per capita
Back to clustering of income and state capacity

Low income can cause weak states

- low prospective market incomes and tax bases reduce motives to invest in legal and fiscal capacity

Weak states can cause low income

- low legal capacity makes incumbents unable to support markets
- low fiscal capacity leads to inefficient forms of redistribution
  such feedback makes income only a proximate determinant of state capacity

Virtuous or vicious circles

- can produce clusters of strong state capacities in strong economies
- or weak state capacities in weak economies
Summary of argument so far

Political stability

- Legal capacity
- Fiscal capacity

Income per capita

Common vs. redistributive interests

Cohesiveness of political institutions

Resource or (cash) aid independence
Road map

1. State capacity
2. Political violence
3. Sum up and plan of campaign
2. Political violence

**Motivation – Conflict and state building**

Risk of external violence

by earlier argument, such conflict can promote state building
boosts common interest vs. redistributive (group) interest

How about internal political violence – civil war, repression?

not common interests – rather, extreme redistributive struggle
may entail radically different incentives to invest in state
we want to (partly) endogenize political instability
i.e., becomes only a proximate determinant of state capacity
Civil war and repression, basic facts – Figure 5

Sadly, widespread phenomena

civil war, two-sided violence (government and insurgent group),
above 10% of all country-years since 1950 (Uppsala/PRIO data)
repression, one-sided violence by governments (outside civil war)
prevalence about 8% for stark form of purges (Banks data)

Main patterns in the data

prevalence of both forms of violence vary greatly over time
both correlate systematically with income, as well as state capacity
hint of substitutability between them
Figure 5  Prevalence of civil war and repression
Existing research

Theory of civil conflict

little role for institutions, including state capacities

Empirical work on civil war and repression

weak connections to theory, so difficult to interpret results
takes income as given, though violence and income likely have
similar determinants – e.g., parallel ‘resource curse’ literatures
separate literatures on civil war and repression, though both
reflect that institutions fail to resolve conflicts of interest

Analytical approach to address these issues

build framework to analyze political violence, then
embed in earlier framework for state capacity
Theoretical approach to political violence

Investments in violence by incumbent and opposition groups

opposition can mount insurgency to take over, financed inside group
incumbent can invest to stay in power, financed by public purse
soldiers hired at market wage

Both groups face a trade-off when investing in violence

costs vs. higher probability to control policy and
redistribute in group’s favor

Analyze likelihood of violence

when do we observe violence, and of what type?
which economic, political and institutional variables
determine one-sided and two-sided violence?
this way we endogenize political instability
Three alternative, ordered regimes

Crucial latent variable

given "conflict technology", both groups’ propensity to invest
is increasing in (common) variable \( \frac{E[\text{Benefit}]}{\text{Cost}} \)

Three possible outcomes

1. Peace – no group invests in violence
   \( \frac{E[\text{Benefit}]}{\text{Cost}} \) is too low to warrant investment in violence

2. Repression – incumbent, but not opposition, takes to violence
   \( \frac{E[\text{Benefit}]}{\text{Cost}} \) is higher, but incumbent’s violence threshold lower
   than opposition’s (because of cost or other advantage)

3. Civil war – both groups take to violence
   \( \frac{E[\text{Benefit}]}{\text{Cost}} \) is high enough that both parties choose to fight
Determinants of political violence?

Which roots of repression and civil war?

as both outcomes related to $\frac{E[\text{Benefit}]}{\text{Cost}}$

determinants should be common – confirmed in empirical work

How related to determinants of legal and fiscal capacity?

\[
\frac{E[\text{Benefit}]}{\text{Cost}} = \frac{E[\text{Winner’s share of revenue less cost of public goods}]}{\text{Real wage}}
\]

therefore, factors that diminish motives to invest in state
raise motives to invest in violence – see analogous graph
Determinants of political violence

Common vs. redistributive interests

Cohesiveness of political institutions

Resource or (cash) aid independence

Repression

Civil war

Income per capita
Revisit investments in state capacity – Figure 6

Should see negative correlation state capacities – political violence

(i) these outcomes have similar roots with effects in opposite directions

(ii) magnification effect: higher risk of internal conflict raises political instability for incumbent, further diminish motives to build strong institutions, in redistributive or weak states

(iii) feedback effect: investments in state capacity also alter the likelihood of conflict – can go in different directions

patterns in data consistent with these ideas
Figure 6  Different types of war and state capacity
Road map

1. State capacity
2. Political violence
3. Sum up and plan of campaign
3. Sum up and plan of campaign

**Hint at answers to three basic questions?**

(i) What forces drive building of different state capacities, and why do these capacities move together?

have suggested some "proximate" and "ultimate" determinants of investments in the state, which become complements

(ii) What forces drive different forms of political violence?

same variables that determine state capacity, including income

(iii) What explains clustering of institutions, income, and violence?

common determinants, plus two-way feedbacks between income and state capacity, and between income and political violence
Putting the pieces together

- Common vs. redistributive interests
- Cohesiveness of political institutions
- Resource or (cash) aid independence

- Legal capacity
- Fiscal capacity
- Repression
- Civil war

Income per capita
Application – Why weak states in sub-Saharan Africa?

Several factors contribute directly to weak states' dependence on resource rents and aid, low threat of external conflict, and non-cohesive political institutions.

Same factors raise risk of internal conflict:

- Societies become plagued by political violence; instability further weakens motives to build state capacities.
- Invest in violence rather than in strong state.

Weak states hamper development:

- Cannot support markets due to low legal (productive) capacity.
- Pursue inefficient policies due to low fiscal (extractive) capacity.

Feedbacks from low income:

- Foster conflict and weak incentives to build the state.
Plan for remaining lectures

Make ideas in this overview more precise

 theory: modeling of investments in state capacity and violence
 empirics: closer attention to a wider set of data

Follow sequential approach

 start very simply, gradually add in more complexity

Consider additional issues

 introduce endogenous political reform
 consider various forms of development assistance
Lecture 1

Common vs. redistributive interests

Cohesiveness of political institutions

Resource or (cash) aid independence

Political stability

Fiscal capacity

Income per capita
Lecture 2

Common vs. redistributive interests

Cohesiveness of political institutions

Resource or (cash) aid independence

Political stability

Fiscal capacity

Income per capita
Lecture 2

- Common vs. redistributive interests
- Cohesiveness of political institutions
- Resource or (cash) aid independence
- Political stability
- Legal capacity
- Fiscal capacity
- Income per capita
Lecture 3

- Common vs. redistributive interests
  - Cohesiveness of political institutions
    - Repression
    - Civil war
  - Resource or (cash) aid independence
    - Income per capita
Lecture 4

Common vs. redistributive interests

Cohesiveness of political institutions

Resource or (cash) aid independence

Legal capacity

Fiscal capacity

Repression

Civil war

Income per capita
Lecture 4

Common vs. redistributive interests

Development assistance

Resource or (cash) aid independence

Legal capacity

Fiscal capacity

Repression

Civil war

Cohesiveness of political institutions

Incoherence of political institutions

Income per capita
B. Fiscal capacity investments

Study a basic policy/investment problem

introduce a simple framework to identify a set of economic and political determinants of one aspect of state capacity
discuss how basic framework can be extended
motivated by the model’s implications – look at some correlations in the data

Road map for part B

1. Some further motivation
2. A simple two-period model
3. Equilibrium policy and investment in fiscal capacity
4. Some extensions
5. Implications and data
1. Some further motivation

Expansion of taxation in rich countries – Figure 7

Last century – vast expansion of government size

1910: total taxes around 10% of GDP in Europe and US, while today’s figures are 30-50%
number of innovations and expansions of infrastructure underpin the capacity to raise so much revenue

Investments in fiscal capacity over time in 37 rich countries
dating of reforms: introduction of income tax 1840s-1970s (income-tax withholding later), VAT still not complete
Figure 7  Fiscal capacity in a sample of 37 countries
But weak states in poor countries – Figures 8 and 9

Tax take today

poor countries raise much less revenue than rich countries
rely on primitive tax bases, such as trade, to much greater extent

Illustration of these stylized facts

shares of total revenue raised from income and trade taxes
(other sources of income: sales, property, royalties,... omitted)
tilted towards income in rich countries and high-tax countries
Figure 8  Tax mix and income
Road map

1. Some further motivation
2. A simple two-period model
3. Equilibrium policy and investment in fiscal capacity
4. Some extensions
5. Implications and data
2. A simple two-period model

Basic structure

Two time periods, \( s = 1, 2 \)

Two groups of individuals, \( A, B \)
- each has share \( \frac{1}{2} \) of population
- total population size normalized to 1
- every individual has income \( \omega \), no savings

Incumbents and opponents
- at beginning of \( s = 1 \), one group holds power
  - we call this group the incumbent \( I_1 \in \{A, B\} \)
  - the other group is the opponent \( O_1 \in \{A, B\} \)
- with exogenous probability \( \gamma \) peaceful transition of power
  - until \( s = 2 \),
- thus \( \gamma \) measures political instability
Private utility functions

Linear utility functions

(quasi-) linear utility buys us risk neutrality and a model that is recursive in policy and investments

\[ u_s^J = c_s^J + \alpha_s V(g_s) \]

\( c_s^J \) private consumption of group-\( J \) member at \( s \)
\( V(g_s) \) utility from consumption of public goods, \( \alpha_s \) their value; think about as "defense", and "threat of external conflict"
Value of public goods

Value of public goods stochastic

\( \alpha_s \) has two-point distribution \( \alpha_s \in \{ \alpha_L, \alpha_H \} \),
where \( \alpha_H > 2 > \alpha_L > 1 \), and \( \text{Prob}[\alpha_s = \alpha_H] = \phi \)
shocks to \( \alpha \) iid over time
realization of \( \alpha_s \) known when policy set

Convenient special cases, to get specific results

(i) linear case: \( V(g_s) = g_s \)
(ii) non-stochastic case: \( V(\cdot) \) is increasing and concave,
satisfying Inada condition, and \( \phi = 1 \) with \( \alpha_H = \alpha \)
Taxation and fiscal capacity

Government has discretion over current taxation

government taxes income at rate $t_s$

constrained by existing fiscal capacity, i.e., $t_s \leq \tau_s$

microfoundations: an individual can earn a share

$(1 - \tau_s)$ of her income in the informal sector

Investment in fiscal capacity

tax authority, compliance structures, infrastructure to

enforce income tax (or impose a value added tax)

initial stock is given, but can be augmented
to achieve fiscal capacity $\tau_s$ requires non-negative investment

$\tau_s - \tau_{s-1} (1 - \delta)$ at $s - 1$, where $\delta \in [0, 1]$ is depreciation rate

(convex) cost $F(\tau_s - \tau_{s-1} (1 - \delta))$, where $F'(0) = 0$
Government budget

Budget items at $s$

$$g_s, t_s, \{r_s^J\}_{J=I,O}, m_s \text{ where}$$

$$m_s = \begin{cases} 
F(\tau_2 - (1 - \delta)\tau_1) & \text{if } s = 1 \\
0 & \text{if } s = 2 
\end{cases}$$

budget constraint is

$$R_s + t_s \omega = g_s + m_s + \frac{r_s^I + r_s^O}{2}$$

where $r_s^J$ is a non-negative targeted transfer to group $J$, and $R_s$ an additional revenue source accruing only to government interpret as natural resource rents, or foreign (cash) aid
Political institutions

Model as constraint on incumbent

incumbents must give fixed share $\sigma$ to opposition
of any given unit of transfers to its own group
by the budget constraint

$$r_J^s = \beta^J[R_s + t_s \omega - g_s + m_s]$$

where $\beta^I = 2(1 - \theta)$ and $\beta^O = 2\theta$ and where $O$'s share
$\theta = \frac{\sigma}{1+\sigma} \in [0, \frac{1}{2}]$ represents more "cohesive" institutions
the closer is $\theta$ to its maximum of $\frac{1}{2}$
interpret as more checks and balances on executive
or better representation of opposition
Timing in period $s$

1. Start with state capacity $\tau_s$ and incumbent group $I_{s-1}$
2. Nature determines $\alpha_s$ and whether group $I_{s-1}$ remains in power with probability $1 - \gamma$
3. New incumbent $I_s$ chooses current policy $\{r^I_s, r^O_s, t_s, g_s\}$ and invests in fiscal capacity (only at $s = 1$)
4. Payoffs are realized and agents consume

look for subgame perfect equilibrium in policy and fiscal capacity investments
Road map

1. Some further motivation
2. A simple two-period model
3. Equilibrium policy and investment in fiscal capacity
4. Some extensions
5. Implications and data
3. Equilibrium policy and investment in state capacity

Policymaking in period $s$

Policy objective

whoever holds power, chooses $\{g_s, t_s, r^I_s, r^O_s\}$ to maximize

$$\alpha_s V(g_s) + (1 - t_s) \omega + r^I_s$$

subject to

$$t_s \leq \tau_s, \quad r^O_s \geq \sigma r^I_s$$

and the government budget constraint

Optimal policy?

can be described by three observations
Observation 1 – transfers

Equilibrium transfers to incumbent group

follow from

\[ r_s^I = 2(1 - \theta) [t_s \omega - g_s - m_s] \]

Interpretation

higher value of the opposition’s share, \( \theta \), reflects more cohesive political institutions

real-world counterparts may be more minority protection by constitutional checks and balances, or more representation through PR elections or parliamentary form of government

if \( \theta = 1/2 \), transfers shared equally across the two groups.
Equilibrium tax rate

\[ t_s = \tau_s \]

Interpretation

always worthwhile to fully utilize all fiscal capacity

gain from higher tax rate is \( 2 (1 - \theta) \omega \) and loss is \( \omega \)
Observation 3 – public goods

Equilibrium public-good provision

Define $\alpha V_g \left( \hat{g} \left( \alpha, x \right) \right) = x$, where $\hat{g}$ is increasing in $\alpha$ and decreasing in $x$

The level of public goods provided is

$$G \left( \alpha, \tau_s \right) = \begin{cases} \tau_s \omega - m_s & \text{if } \alpha V_g \left( \tau_s \omega - m_s \right) \geq 2 \left( 1 - \theta \right) \\ 0 & \text{if } \alpha V_g \left( 0 \right) < 2 \left( 1 - \theta \right) \\ \hat{g} \left( \alpha, 2 \left( 1 - \theta \right) \right) & \text{otherwise} \end{cases}$$

In linear model $V_g = 1$ – we have a "bang-bang", corner solution and outcome given by either first or second row
Where next?

Equilibrium fiscal capacity

show how first-period incumbent choose investments
so as to augment second-period fiscal capacity
and how these choices depend on parameters of model

Introduce legal capacity

will highlight productive role of the state
will be able to illustrate basic complementarity between
different forms of state capacity
will allow us to endogenize income