

# Economic growth

## Class 14

### Institutions

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June 16, 2009

Institutions: what are they

- Definition from Douglas North (1990)

**Definition 1** *Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction*

- "In consequence, they structure incentives in human exchange, whether political, social, or economic.
- Economic institutions are about property rights and markets (or the perfection of markets)
- So they shape the structure of incentives

Why are property rights important for growth

- Property rights are the security that one can benefit from ones savings or investments
- They are an intertemporal problem, so governments need to be constrained intertemporally
  - Problems of commitment (and of time inconsistency)
- Will people acquire human and physical capital
- Will people do research to improve technology
- Property rights determine
  - who gets profits, revenues, wages: how the returns to production are divided

- The appropriate level of taxes is **all** about property rights

Institutions and growth

- What institutional frameworks generate better growth
- Why did these institutional frameworks get put into place
- Why did they not get put into place in countries that are poor
- Institutions are endogenous
  - They are determined (in part, at least) by the society
  - They are self re-enforcing (or self maintaining)
  - It is difficult to change institutions
  - There are *de jure* and *de facto* institutions and they do not need to be the same

.The argument (from Acemoglu, Johnson, Robinson (2004))

1. Economic institutions matter because they shape incentives in a society
  - (a) investment in human and physical capital
  - (b) the organization of production
  - (c) Distribution of resources in the future: wealth, income
  - (d) Affect size and distribution of pie

$$\text{Economic institutions } (t) \Rightarrow \begin{cases} \text{economic performance } (t) \\ \text{distribution of resources } (t + 1) \end{cases}$$

.The argument

2. Economic institutions are endogenous
  - (a) Determined by collective choices of society
  - (b) Typically conflicts of interest
    - i. because different institutions imply different distribution of resources
  - (c) Political power determines which groups prevail
  - (d) (where does political power come from)

$$\text{political power } (t) \Rightarrow \text{economic institutions } (t)$$

.The argument

3. Conflicting interests over distribution of resources and therefore over institutions

- (a) why not just choose institutions that max growth and then use politics to divide pie
- (b) why do political choices lead to inefficiency and even poverty
- (c) Individuals with political power cannot commit not to use it for themselves
- (d) So side payments are not creditable

.The argument

4. Distribution of political power is endogenous

- (a) de jure political power (what the constitution and laws say)
- (b) de facto political power (who and how it is exercised)
- (c) De jure political power comes from political institutions
- (d) Examples of institutions
  - i. democracy
  - ii. dictatorship (king)
  - iii. autocracy
  - iv. rules politicians must follow (congress, courts, division of powers)

$$\text{political institutions } (t) \Rightarrow \text{de jure political power } (t)$$

.The argument

5. De facto political power depends on the economic resources of the group

- (a) This determines ability to arm, revolt, use protests (peaceful)
- (b) Depends on ability of group to resolve internal problems (collective action)
- (c) This implies that incentives for the group must be the same
- (d) De facto is the ability to use force or the threat of force
- (e) (the police and army are the government's ability to use force)

$$\text{distribution of resources } (t) \Rightarrow \text{de facto political power } (t)$$

.The argument

6. Political institutions and distribution of resources are the state variables

- (a) They typically determine economic institutions and economic performance
- (b) Those with political power set up economic institutions to maintain this power
- (c) This is done via political institutions
  - i. concentrated economic power implies political institutions to defend it
  - ii. For example, in slave societies in the Caribbean
  - iii. Political power in hands of owners: slaves with none
  - iv. political institutions defended slavery
- (d) Changes in political power can change political institutions
  - i. changes after independence in colonial states in Africa

$$\text{political power } (t) \Rightarrow \text{political institutions } (t)$$

The argument

- Putting it all together

$$\left. \begin{array}{l} \text{political} \\ \text{institutions } (t) \Rightarrow \\ \text{distribution} \\ \text{of resources } (t) \Rightarrow \end{array} \right\} \begin{array}{l} \text{de jure} \\ \text{political} \\ \text{power} \\ \text{de facto} \\ \text{political} \\ \text{power} \end{array} \Rightarrow \begin{array}{l} \text{economics} \\ \text{institutions } (t) \\ \text{political} \\ \text{institutions } (t + 1) \end{array}$$

and

$$\text{economics} \\ \text{institutions } (t) \Rightarrow \left\{ \begin{array}{l} \text{economic} \\ \text{performance } (t) \\ \text{distribution} \\ \text{of resources } (t + 1) \end{array} \right.$$

An example of how the model works

- Middle ages: Kings defended their property rights
- And to some degree those of the lords who served them
- Growth would have been faster if better property rights were give to
  - merchants
  - producers (manufacturers)
  - traders

- However, giving rights to them would give them more power
- This power would threaten that of the king
- This logic is similar to how many governments today restrict ownership by foreign firms
- The economy might grow faster, be more efficient, provide more goods and services to the citizens
- But the now domestic owners would lose economic power (and political power)

Problems with model for growth

- Good institutions are likely to arise and continue when power is widely held
- Concentration of power implies defending power from rest of society (both economic and political)
- Concentrated power wants to protect property rights of the small group
- Not good for economic needs for growth of the whole economy
- Sometimes bad institutions (in a general sense) can do good policies
- A dictator can follow policies that help growth
  - This has happened: South Korea, Chile, Singapore, China today
- This is different from the mess that was Russia after the fall of communism

Fundamental causes of income differences

- Economic institutions
- Geography
- Culture
- (perhaps Luck): finding oil under your sand

Economic Institutions

- Old theory (Smith JSMill): Good institutions cause growth
- Good institutions are: property rights, markets, efficient courts, equality before law
- These are usually endogenous
- Political power determines

- what kinds of markets work
- who has property rights, (physical and intellectual)
- who the courts treat well
- Growth usually requires widely held rights
  - So that many can own firms
  - So that larger firms have limited power over smaller
  - So that there are incentives to inventions and development

#### Geography

- In both very hot and very cold climates difficult to produce
  - very hot climates: saps effort,
  - crops more difficult to modify (fewer grain type crops)
  - diseases (malaria, yellow fever, etc.) Africa
    - \* estimate that malaria reduces growth in Africa 1% per year
    - \* high death rate gives little incentives to savings or human capital accumulation
- middle climates
  - had more types of crops easy to develop (wheat, corn, etc)
  - tended to encourage smaller farms (independent production)
  - colder climates require better organization to survive
  - fewer diseases (although the black plague killed aprox 40% of Europe)
    - \* not endemic
- Rivers, sea coasts, soil characteristics, mountains
- Note results of regression of output per capita and absolute latitude

#### Culture

- Famous: Max Weber and effects of religion
  - Protestants vrs catholics
  - incentives of faith
- Cultures construct belief systems that can help or hinder growth
- Concept of personal property (vrs communal)
- Western culture and Greek basis (models of world, investigation, questions)

– moving out of "given" explanations to evidence

- Weber argued that US grew because protestant and LA not because catholic
- Religions are potentially endogenous
  - religious beliefs that match economic necessities are better accepted
  - other literally die out

Do institutions matter

- Correlations between institutions and growth
- High correlation between current institutions and current growth rate
- Measures of property rights and growth rates (see slide)
- However: difficult to show that institutions **cause** growth
- We know of cases (South Korea) where growth caused (political) institutions
  - although good economic institutions were in place under a dictatorship
  - (note. some have proposed that democratic regimes in poor countries produce anti-growth policies)

Arguments in favor of institutions

- South vrs North Korea
- European colonial societies
  - Anglo Saxon vrs Southern European
  - This was the basis for Weber's thesis
  - But also: different types and needs of monarchies
  - Different rules of law
    - \* who could expect democracy from a legal system called Napoleonic
- But not all British colonies have grown
- Why some grew and others not: how were they different

Korea

- Before division in 1950, were the same country
- so the same history, same income level (both were occupied by Japan)

- Similar populations, technology (the north was more industrialized)
- Similar natural resources, similar climate and lands (north with best natural port)
- Organized very different ways
  - north - communist (supported by China and USSR)
  - south - capitalist (supported by USA)
- By 2000,
  - south had percapita income of \$16,000 (entered OECD)
  - north had \$1000 (similar to sub-sahara africa)
- Political question: by 1980, the differences were clear. Why didn't the rulers of the north change to the policies of the south? Who were the ruling elites and what was the structure.

#### European colonial experiments

- British: with good policies at home
  - Successful institutions in US, Australia, NZ, Canada
  - Unsuccessful in Caribbean, African colonies and in India, Pakistan, and Bangladesh
- Dutch with great policies at home
  - Terribly unsuccessful in colonies (africa or asia)
- Spanish colonies
  - How were they structured

#### European colonial experiments

- Different colonies with different results
- Arguments
  - migration vrs conquest
  - native population density
  - diseases (or european mortality rates)
  - extractable resources or not
- Areas with low native population density, few mortal diseases, few extractable resources

- were areas of migration
- migrants developed institutions to protect themselves from themselves (and others)
- low level of concentrations of power
- democratic regimes (in colonial north america before in england)

#### European colonial experiments

- Areas with large native population density
- or high european mortality rates
- or excellent extractable resources
- Colonial (including british) conquerors
  - rulers over productive populations
  - few europeans were owners of productive resources (including labor of others)
  - institutions designed to protect europeans and keep political rights from the others
  - had facade of european practices (courts, etc) but protected europeans against locals
  - slavery was never european (in Barbados, first labor was Scottish, but they died off too quickly so slaves were imported instead)
  - Differential taxation for native populations including in labor services (in Spanish america)
- Imported technology was kept in the hands of the europeans

#### The end of European colonial experiments

- What happened to the colonial countries on independence
- How has growth been since independence
- What has the political situation been like
- Concept of Reversal
  - Areas like Mexico, Upper Peru, parts of India were quite wealthy in 1500
  - North America, New Zealand, Australia were poor
  - Reversal of these roles during and after colonial period
- Institutions put into place during colonial period copied after independence

- Strong leaders (dictators, mostly) in previously richer areas
- Democracies in previously poor areas
- Argue that the cause is the institutions that the settlers impose

Commitment problems

- Institutions are designed to try and resolve commitment problems
- Government cannot (credibly) promise to follow a policy in the future
- especially if this policy is not necessarily to their benefit
- A local example
  - privatization of government owned firms during period of Menem
  - public utility rates were very high in Argentina (including road tolls)
  - remember high prices are not necessarily profit maximizing (over the long run)
  - Why were prices high: because Menem could not promise that the sales would be honored by the next government
  - And both De la Rúa and Señor K reneged on contracts (with excuses)
  - this (correct) vision of failure to commit implied less investment, worse service and higher prices than otherwise

Commitment problems

- Dictators leaving government
- Can they negotiate a contract so that they give up power
- Will the next government (or the next) honor that contract
- Dictators in exile (why and where)
- Pinochet in Chile (member of Senate for life)
- If there is another military government in Argentina: will they give up power?

Commitment problems

- What is the growth effects of the commitment problem
- Will a dictator encourage policy that increase general wealth?
- Increasing general wealth will broaden political power

- New groups will challenge dictator and want democracy (or shared ruling)
- New group can't commit credibly to honor contract if dictator leaves
- Dictator tries not to leave: follows policies that prevent growth
- No markets, property rights in hands of dictator and friends

Show slides

Do institutions cause growth? Glaeser, La Porta, Lopez-de-Silanes, Shleifer

- Good institutions and high income are highly correlated
- All very poor countries are (operational) dictatorships
- All rich countries are democracies
- There are relatively few medium income countries (5000 to 15000 dollars per capita)
- Most poor countries have very bad economic institutions
  - markets and property rights
- All rich countries have good economic institutions
  - Some better than others
- In some poor countries, their **dictators** have chosen to have good economic institutions
- good economic and political institutions are correlated with high human and physical capital

Korea again

- Between 1950 and 1980, both south and north korea were dictatorships
- "Constraints on executive" measure (out of high of 7)
  - North Korea = 1.71
  - South Korea = 2.16
- Very different growth paths under dictators
- Later in South Korea (1980's) - riots for democratic rights
- Dictator stepped down for democracy

Institutions

- Problems with measuring them

- What are good ones
- do general levels of institutions matter
- or is it specific institutions
- Political institutions (constraints on actions) need to be relatively permanent
- That is why constitutions exist and division of powers
- Institutions (especially good ones) need to be hard to change
- A dictator who implemented good economic institutions is NOT an institution

#### Institutions

- GLPLSS consider traditional measures of institutions used in studies (such as the one above)
- Ask if these measured institutions are
  - constraints on governments
  - permanent or at least durable
- claim they are not
- indicators they look at are
  - indicators of institutional quality during 1980s and 1990s from International Country Risk guide
  - survey of government effectiveness
  - direct measures of limits on executive power (collected by political scientists)

#### Institutions

- Complaints about the measures
- They all measure **outcomes** not permanent characteristics
- All measures rise with per capita income and are highly volatile
- In the first two measures, good dictators receive high scores (see earlier comment)
- All appear unrelated to constitutional constraints
- They claim: "In fact, the measures of institutions used in the literature reflect choices.. rather than constraints..."

## Institutions

- Three results of the data
- traditional indices of institutional quality are highly correlated with each other and with per capita income
- plurality and proportional representation are correlated with per capita income
- measures of judicial checks and balances are uncorrelated with per capita income
  - and weakly correlated with the outcome indices

## What is correlated with growth

- Initial levels of human capital (education levels) are highly correlated with later growth
- but returns to schooling are low in poor countries
- Alternative explanation: schooling leads to better political institutions
  - this brings about better protection to property and economic growth
  - Note: political stability predicts growth
- Data shows high correlations between growth and average measures of institutional quality in that period
- There is no relationship between growth and constitutional measures of institutions (such as judicial independence, proportional representation)
- **Initial** measures of political institutions have no predictive power on growth

going back to some of the earlier comments

- All dictatorships are poorly educated (except Paraguay, Singapore, Taiwan)
- Lowest education countries are never democracies
- Nearly all highly educated countries are stable democracies
- 66% of the years in the sample, least educated countries were lead by dictators who lasted at least 5 years (50% 10 years)
- 6% of the time the least educated countries were lead by democratic leaders for less than 5 years (13% for more than 5 years)

- Medium educated countries:
  - 43% of the time lead by democratic leaders
  - 44% of the time dictators for more than 5 years (more than 10 years 33% of time)

Some problems with AJR

- European settler mortality highly correlated with current disease environment
- so today, they are unhealthy
- unlikely to invest in education (low expected return)
- correlation between years of schooling in 2000 and settler mortality is -.73. (lower number is higher mortality)
- Schooling and institutions
  - Initial schooling positively correlated with improvements in institutions in the next 5 years

On institutions and technological growth (historical) Khan and Sokoloff

- Study rules on patents, technology growth, and who made the invention
- First patents were in England: 1624 was first law with monopoly for 14 years for first true inventors
  - (by the grace of the crown)
- Very expensive to patent (5 to 10 times the average annual income) into the middle 19th century
- First true inventor was limited to the first to use it in England (so imported ideas could be patented)
- Listing but not checked nor indexed (had to get the hand written document)
- Few patents from outside of London
- Almost no leasing out of patent rights (those which had been successfully defended in court)
- The Crystal Palace Exhibition in 1851 change the laws
- Inventions from the US shocked the british: they made their rules more like the US

In France

- Expensive to patent, not as much as in England
- System of rewards and prizes from the crown
- Granted pensions, titles, loans, lump-sum grants
- Mostly to people connected to the court
- After the revolution simplified (similar to modern French system)
- lower patent fees (although still relatively high), simple registration
- but included: "The government, in granting a patent without prior examination, does not in any manner guarantee either the priority, merit or success of an invention"
- Description was only in the original patent office in manuscript form

US system

- In the constitution and was one of the first laws passed
- Provided broad access to patent protection: fees in 1790 were \$3.70 plus copy costs (rose to \$30 in 1793 and to \$35 in 1861).
- Patents for original inventions (in the world)
- Patents examined by experts to certify if original (originally Secretaries of State and War and the Attorney General but rapidly changed)
- Once granted could not be overturned except by showing fraud
- System was very favorable to the trade in patent rights
- By mid 1840's trade in patent rights was booming and agents were marketing inventions
- Most inventions were in the Northeast and Mid-Atlantic states (near manufacturing)

Who were US inventors

- Formal education
  - (1739 to 1793 birth) 70% with only primary education, (1795 to 1819 birth) 59% only primary education
  - training in engineering or natural sciences not important until (1846 to 65 birth)
  - Education in this period highly correlated with parental income

- Marketing of inventions: percent sold or licensed (51.4% , 62.1, 44, 66) by birth cohort
- the last cohort (1866 to 1885 birth) big decline in licensing and more in long term association with firm
- This captures the rise of investment in firms and hiring researchers in late 19th and early 20th centuries

England and europe

- Few important inventors of humble origins
- Seemed to believe that only the "better" elements of society could come up with inventions
- (recall the big deal about who was Shakespear)
- Only after exhibition of 1851 was there a serious effort to improve access to patents
- *Comment on follower countries and importing patents*