Lectures in Growth and Development

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Ec 535

Topic 3

Property Rights

Motivation

*These notes are not guaranteed to be error free. If you spot one, please let me know. Also material beginning with * means optional material.

- The term *property right* refers to an owner's right to use a good or asset for consumption and/or income generation (referred to as "use rights"). It can also include the right to transfer it to another party, in the form of a sale, gift or bequest (referred to as "transer rights").

- A property right also typically conveys the right to contract with other parties by renting, pledging, or mortgaging a good or asset, or by allowing other parties to use it, for example, in an employment relationship

- By property rights economists typically refer to *private* property rights a key feature of which is being able legally to exclude others from using a good or asset.

- This affects resource allocation by shaping the incentives of individuals to carry out productive activities involving the use of the good or asset, undertake investments that maintain or enhance its value, and also, to trade or lease the it for other uses

- However, other forms of property rights, such as communal property rights, are important in many societies.

- In the case of common property, such as a lake or a forest, individuals have use rights but do not have the right to exclude others from using it. There are also assets where the transfer rights of owners are circumscribed. For example, slavery is prohibited in modern economies.

- These rights are always circumscribed - for example, the owner of a plot of land does not have the right to carry out illegal activities on it - and the nature of these restrictions depend on the political, legal, and enforcement system.

- In this lecture we draw on the first half of Besley-Ghatak (2009) and discuss what are the mechanisms through which property rights affect economic activity

- Four effects
  - The first is expropriation risk – insecure property rights imply that individuals may fail to realize the fruits of their investment and efforts.
  - Second, insecure property rights lead to costs that individuals have to incur to defend their property which, from the economic point of view, is unproductive.
  - The third is failure to facilitate gains from trade – a productive economy requires that assets are used by those who can do so most productively and improvements in property rights facilitate this (e.g., via a rental market).
  - The fourth is the use of property in supporting other transactions, e.g. collateral

The Basic Model

- Decision problem of a producer in a single-agent economy.

- For the moment, we assume there are no markets or for that matter, any form of exchange.

- The farmer is endowed with a unit of land and $\overline{e} < 1$ units of labour with which he produces output (y), say, food.

- The production function is:

$$y = A\sqrt{e}.$$

- e is a variable input that we will refer to as labour.

- This formulation is equivalent to one where output is stochastic and takes the value A with probability $\sqrt{e}$ and 0 with probability $1 - \sqrt{e}$ and the producer is risk neutral.

- We will focus on this interpretation as it facilitates our discussion of agency costs.

- The farmer's decision is to choose the optimal level of e.

- Since there are no labour markets, this choice will be driven by his own disutility cost of supplying labour.

- We assume that the farmer's utility function is linear in consumption (c) and leisure (l):

$$u(c, l) = c + l.$$

- We assume that property rights are imperfect in the sense that there is an exogenously given probability $\tau \in [0, 1]$ of expropriation faced by a farmer in a single-agent economy.

- This could apply to the output that is produced or the land which is needed to produce output.

- These are equivalent, so long as labour is sunk before the producer finds out whether there is going to be expropriation or not.

- Given this, $c = (1 - \tau)y$.

- Notice that we do not make a distinction between expropriation and taxation and do not consider the choice of τ by the "expropriator".

- We asusme there is some actor in the economy with coercive power – this could be the power to tax or confiscate or to rob or steal.

- The producer will choose e to maximize:

$$\max_{e \in [0, \overline{e}]} \pi(e) = (1 - \tau)\, A\sqrt{e} + \overline{e} - e$$

  subject to the constraint $e \leq \overline{e}$.

- Notice that production in this formulation is deterministic.

- The optimal choice of labour of the producer is given by:

$$e^* = \min\left\{\left[\frac{(1-\tau)\,A}{2}\right]^2, \overline{e}\right\}.$$

- Correspondingly, gross output is $A\sqrt{e^*}$, consumption is $(1-\tau)\,A\sqrt{e^*}$, and net surplus is given by $\min\left\{\left[\frac{(1-\tau)A}{2}\right]^2 + \overline{e}, (1-\tau)\,A\sqrt{\overline{e}}\right\}$.

- Using this, we have the following observation:

Result 1 *Labor supply, output and profits are strictly decreasing in* τ*.*

- This is the standard disincentive effect of any form of "outcome"-based or contingent transfer policy.

Guard Labour

- Suppose labour can also used to reduce the risk of expropriation.

- This potentially creates an additional margin of distortion caused by imperfect property rights: it not only reduces incentives to supply productive labour, it diverts resources (here labour) from productive to unproductive uses.

- However, these efforts are also complementary: more effort to protect property rights will raise the marginal returns from efforts to produce more output.

- Consider the following simple extension of the model: suppose e_1 is productive labour and e_2 is "guard" labour that reduces the probability of expropriation.

- We use a simple technology to describe the probability of expropriation: $\tau(1-\gamma\sqrt{e_2})$, where $\tau \in [0,1]$ and $\gamma \in [0,1]$.

- Otherwise the model is the same as the basic model, with $A\sqrt{e_1}$ denoting expected output.

- Now the producer's decision problem is:

$$\max_{e_1,e_2} \left(1-\tau(1-\gamma\sqrt{e_2})\right) A\sqrt{e_1} + \bar{e} - e_1 - e_2. \qquad (1)$$

- Solving the first order conditions for both effort choices yields:

$$e_1 = \left(\frac{2(1-\tau)A}{4-(\tau\gamma A)^2}\right)^2 \text{ and } e_2 = \left(\frac{\gamma\tau(1-\tau)A^2}{4-(\tau\gamma A)^2}\right)^2. \tag{2}$$

  Several interesting implications follow immediately from these two expressions:

Result 2 *If the insecure asset is involved in the production process, then in the case where the resource constraint is not binding: (i) improved property rights (lower τ) increases productive labor; (ii) there exists $\overline{\tau} \leq 1$ such that guard labor is increasing in τ so long as $\tau \leq \overline{\tau}$ and decreasing otherwise*; *and (iii) economic efficiency is increasing in improved property rights (lower τ).*

- As productive and guard labor are *complementary*: more effort to protect property rights will raise the expected marginal returns from efforts to produce more output.

- The direct effect is negative for the same reasons as in the basic model.

- But there is an indirect effect operating via e_2 in the presence of guard labor.

- However, this effect is always dominated by the direct effect.

- For (ii) observe that an increase in τ raises the expected marginal return from guard labor while lowering e_1.

- The complementarity between e_1 and e_2 means that this tends to reduce the expected marginal return from guard labor.

- For small values of τ the first effect dominates and for larger values of τ, the second effect dominates.

- However, as one would expect, economic efficiency increases when property rights are more secure following the logic of the previous section: namely, because it is a first-order "tax" on output.

- If the resource constraint (i.e., labor endowment) is binding then naturally e_2 will be always increasing in τ and e_1 will be always decreasing in τ

Insecure Property Rights as Barriers to Trade

- Economic efficiency is enhanced by having assets managed by those who can use them most productively.

- But this depends on being able to write efficient contracts to trade.

- In our basic model everyone has the same amount of land, and also, everyone has the same skill level.

- As a result, so long as there is a competitive labour market, there are no efficiency gains from having a land market.

- Now we relax this assumption and allow some agent's to have more land than they want to optimally cultivate themselves, and some agents to have less.

- This creates potential gains from trade via a rental or sales market in land.

- But a necessary (but not sufficient) condition for this to take place is to have well defined property rights in land.

- Otherwise, land will not be offered for rental or sale driven by the fear that they could lose the land with some probability, or equivalently, receive only a fraction of the market returns to land due to imperfect property rights in land.

- This will create an additional margin of distortion due to imperfect property rights: potentially gainful trades will be lost.

- Assume there is a continuum of agents divided into landed (a fraction of δ) and landless (a fraction $(1-\delta)$).

- Suppose that time is infinite and rental contracts involve an up-front payment from the landless farmer to the landlord.

- However, there is a probability τ of losing ownership of the land at the end of the rental contract which we assume to be one period.

- At the beginning of each period a farmer receives a productivity shock $\theta \in \{\underline{\theta}, \overline{\theta}\}$ with $0 \leq \underline{\theta} < \overline{\theta} \leq 1$.

- Let the probability of low productivity $\theta = \underline{\theta}$ be p.

- This is assumed to be distributed independently and identically across individuals, as well as over time (for the same individual).

- Given θ, output is $\theta A\sqrt{e}$.

- Therefore, for a given θ, a producer who owns land chooses:

$$\max_{e} \theta A\sqrt{e} + \overline{e} - e. \tag{3}$$

- This yields, given perfect property rights (and ignoring corner solutions): $e^* = \left[\frac{\theta A}{2}\right]^2$ and $\pi^*(\theta) = \left[\frac{\theta A}{2}\right]^2 + \overline{e}$.

- From now on, we set $\overline{e} = 0$.

- For a landless individual or someone who leases out land, there is an alternative activity which could be thought of as working for a wage, that yields utility $\overline{u} \geq 0$.

- We assume that:

$$\pi^* (\underline{\theta}) > \overline{u}, \tag{4}$$

- That is, any landowner prefers to operate his land to taking the outside opportunity.

- In this situation, there are clearly gains from trade.

- In a given period there is a fraction $p\delta$ of which is low productivity and landed and a fraction $(1-p)(1-\delta)$ which is high productivity and landless.

- Assume that

$$(1-p)(1-\delta) > p\delta \text{ or } 1 > \delta + p. \tag{5}$$

- This says that there are more high productivity and landless than there are low productivity and landed.

- In a perfect rental market land rental will be:

$$r^* = \pi^* \left(\overline{\theta}\right) - \overline{u}. \tag{6}$$

- All land is fully utilized and has high productivity.

- Now let us consider the decision problem when there is a probability τ that the tenant will not return the land.

- Now we contrast two strategies for a low productivity landlord: renting out the land and bearing the risk of losing his land or cultivating it himself.

- As productivity shocks are assumed to be i.i.d. over time, and in any future period when the landowner is lucky and draws $\overline{\theta}$ he would prefer to cultivate the land himself as this way he does not bear the risk of losing it.

- Following this argument, we can now set up two value functions, one which we call V when in the current period land is rented out, and one which we call W when in the current period the landowner cultivates the land himself.

- Then,

$$\begin{aligned} V &= \pi^* \left(\overline{\theta}\right) + \beta \left(1-\tau\right) \left[(1-p)W + pV\right], \qquad (7) \\ W &= \pi^* \left(\overline{\theta}\right) + \beta \left[(1-p)W + pV\right]. \end{aligned}$$

- How do we get V?
  - If he gets a low productivity shock (probability p) he rents out
  - This gets him a rent of $\pi^* \left(\overline{\theta}\right) - \overline{u}$

- He earns $\overline{u}$ by employing his labour somewhere else
- So the net income in the current period is $\pi^* \left(\overline{\theta}\right)$
- With probability $(1 - \tau)$ he gets the land back next period
- Then with probability p he is back in today's situation (i.e., low shock) and expects V or with prob. $(1 - p)$ he has high shock and cultivates himself, which yields W

- How do we get W?
  - If he gets a high productivity shock (probability $1 - p$) he cultivates himself
  - This gets him a profit of $\pi^* \left(\overline{\theta}\right)$

- This is also his net income in the current period
- He keeps his land with certainty.
- In the next period, with probability p he rents out and expects V (i.e., low shock) or with prob. $(1-p)$ he is back in the same situation as today

- Standard recursive formulation in infinitely repeated games

- Solving for W as a function of V yields

$$W = \frac{\pi^* \left(\overline{\theta}\right) + \beta p V}{1 - \beta(1-p)}. \tag{8}$$

- We can now plug W into V, and after some manipulation we obtain

$$V = \frac{1 - \beta\tau(1-p)}{1 - (1-\tau p)\beta}\pi^*\left(\overline{\theta}\right). \tag{9}$$

- Observe that V is decreasing in τ, as we would expect.

- Consider the autarky option whereby a landowner always cultivates his own land.

- Let V' and W' denote his lifetime expected payoff from autarky when, respectively, he has a low and a high productivity shock in the current

period:

$$\begin{aligned} V' &\equiv \pi^*(\underline{\theta}) + \beta\left\{pV' + (1-p)W'\right\} \\ W' &\equiv \pi^*\left(\overline{\theta}\right) + \beta\left\{pV' + (1-p)W'\right\}. \end{aligned} \tag{10}$$

- Solving these, we get:

$$V' = \frac{\pi^*(\underline{\theta})\left(1-\beta(1-p)\right) + \beta(1-p)\pi^*\left(\overline{\theta}\right)}{1-\beta}. \tag{11}$$

- Comparing V and V' we can see that if τ is small then $V > V'$ because in the limit when $\tau = 0$, V has to exceed V' as the land is always with a high productivity producer and the owner gets the full surplus.

- Consider the opposite case when τ is high.

- Now there is a trade-off: with autarky there are periods when the land is used unproductively, and with tenancy, there is a risk that the owner may lose the land.

- We have the following result:

Result 3 *If* $\beta > \frac{1}{2-p}$, then there is a $\hat{\tau} \in (0,1)$ such that for $\tau \geq \hat{\tau}$ *there is no trade in assets and land is cultivated by low productivity farmers.*

- The insecure property rights now lead to no trade and a per capita output loss equal to $\delta p \left[\pi^* \left(\bar{\theta}\right) - \pi^* \left(\underline{\theta}\right)\right]$.

- In this case, a fall in τ constitutes a Pareto improvement because those who rent out their land are better off, while those who rent in land are indifferent.

- In the case $\pi^*(\underline{\theta}) = 0$ the autarky option, in a period the producer receives a low productivity shock, is equivalent to keeping the land idle.

- This is consistent with the fact that in the developing world assets are often kept undeveloped or idle due to insecure property rights.

Property Rights and Agency Costs (The de Soto Effect)

- Influential work by de Soto - the Problem of "Dead Capital":

"What the poor lack is easy access to the property mechanisms that could legally fix the economic potential of their assets so that they could be used to produce, secure, or guarantee greater value in the expanded market...Just as a lake needs hydroelectric plant to produce usable energy, assets need a formal property system to produce significant surplus value." Hernando de Soto, *The Mystery of Capital* (2001)

- This is a very specific story about institutional failure which limits trading possibilities.

- We use the same basic model as above.

- Thus, $\sqrt{e}$ remains the probability that output is A.

- We now assume explicitly that $e \in [0, 1]$ is private information to the producer (borrower) and set $\overline{e} = 0$ for simplicity.

- In addition to committing effort, we now allow the producer to use capital to enhance productivity.

- For simplicity, capital x is a discrete variable that takes on the values 0 and 1.

- When $x = 1$, output is $A(1 + \triangle)$ with probability $\sqrt{e}$ and 0 with probability $1 - \sqrt{e}$.

- Thus, expected output is $A(1 + \triangle)\sqrt{e}$.

- The cost of a unit of capital is ρ, which for now is exogenously given.

- Given this, and absent any frictions, the producer's decision problem is:

$$\max_{e \in (0,1), x \in \{0,1\}} A(1 + \triangle x)\sqrt{e} - e - \rho x. \tag{12}$$

- The optimal choice of effort, e, is given by:

$$e = \left(\frac{A\left(1 + \triangle x\right)}{2} \right)^2. \tag{13}$$

- In this model the capital good x and effort are complements. The expected surplus at the optimal effort level is

$$\frac{1}{4} A^2 (1 + \triangle x)^2 \ - \rho x. \tag{14}$$

- For concreteness sake, we assume

$$\frac{1}{4} \left[A(1 + \triangle) \right]^2 \ - \rho > \frac{1}{4} A^2 \text{ and } \frac{A\left(1 + \triangle\right)}{2} < 1. \tag{15}$$

- The first condition ensures that under the first-best (where effort is observable), it is profitable to use the capital good.

- The second assumption ensures an interior solution for e.

- We will therefore refer to $e^* = \left[\frac{A(1+\triangle)}{2}\right]^2$ as the first-best level of effort.

- We make two key assumptions: (i) effort is unobservable and hence cannot be specified in lending contracts (moral hazard) and (ii) the producer has insufficient wealth to post as a bond in the event that he defaults (limited-liability).

- To capture the latter, we suppose that the producer has an illiquid asset whose value is w.

- Limited liability implies that he can pay only up to $A(1 + \triangle) + w$, when output is high and w when output is low.

- Due toimperfect property rights the collateral value of wealth is $(1 - \tau)w$

- In concrete terms, the parameter τ reflects that in many countries registering assets as property is time consuming and costly.

- We now solve for the optimal debt contract as a function of τ.

- A debt contract is an interested payment on a successful project, denoted by r, and a level of collateral, denoted by c, to be paid if the project is unsuccessful:

- The expected payoff of the producer with a contract (r, c) is:

$$\sqrt{e}\left\{A(1+\triangle)-r\right\}-\left(1-\sqrt{e}\right)c-e \tag{16}$$

- That of a lender is:

$$\sqrt{e}r+\left(1-\sqrt{e}\right)c-\rho. \tag{17}$$

- The producer always has the option of not borrowing x.

- This creates an outside option equal to $\frac{1}{4}A^2$.

- Assumption (15) guarantees that (in principle) there are gains from trade as long as effort can be specified in the contract.

- Given r and c the producer chooses her effort to maximize her expected payoff, which yields the first-order condition:

$$\frac{1}{2\sqrt{e}}\{A(1+\triangle)-(r-c)\}=1. \tag{18}$$

- Solving this yields an optimal effort level:

$$e=\left[\frac{A(1+\triangle)-(r-c)}{2}\right]^2. \tag{19}$$

- Observe that e and r are negatively related, while e and c are positively related as we saw in the model of credit markets with moral hazard in Topic 4

- In addition , the contract also has to satisfy the limited liability constraint:

$$(1-\tau)\,w \geq c. \tag{20}$$

- It is possible to achieve the first-best effort level by setting $r = c$.

- However, since c cannot exceed $(1-\tau)\,w$ this might not be enough for the lender to recover the opportunity cost of capital (ρ).

- If that is the case, then the lender will need to set $r > \rho > c$.

- This will imply that effort will fall below the efficient level.

- Substituting (19) and (20) into the lender's payoff function yields:

$$\max_r \frac{A(1+\triangle)-(r-w(1-\tau))}{2}(r-w(1-\tau))+w(1-\tau)-\rho. \quad (21)$$

- Solving this yields:

$$r=\frac{A(1+\triangle)}{2}+w(1-\tau). \quad (22)$$

- In this case, the lender takes one half the return from a successful project in addition to the value of the pledged collateral.

- The effort level that the producer puts in is therefore:

$$e = \left[\frac{A(1+\triangle)}{4}\right]^2 \tag{23}$$

- It is below the first best level.

- Notice that this result does not depend on the security of collateral – τ.

- The borrower's and the lender's expected payoffs are, respectively: $u \equiv \left\{\frac{A(1+\triangle)}{4}\right\}^2 - w(1-\tau)$ and $\pi \equiv \frac{1}{2}\left\{\frac{A(1+\triangle)}{2}\right\}^2 + w(1-\tau) - \rho$.

- For trade to take place on these terms, we require that $u \geq \frac{1}{4}A^2$.

- This will happen when $w(1-\tau) \leq \frac{A^2}{4}\left[\frac{(1+\triangle)^2}{4} - 1\right] \equiv \underline{\omega}$.

- When the outside option is a binding constraint, then r will be determined by:

$$\left\{\frac{A(1+\triangle) - (r - w(1-\tau))}{2}\right\}^2 - w(1-\tau) = \frac{1}{4}A^2. \qquad (24)$$

- This yields

$$r = A(1+\triangle) - 2\sqrt{\frac{A^2}{4} + w(1-\tau)} + w(1-\tau), \qquad (25)$$

- Effort is equal to $\frac{A^2}{4} + w(1-\tau)$.

- Now effort is a (decreasing) function of the security of collateral.

- We can now define precisely when pledgeable wealth is a constraint on economic efficiency.

- This will be the case if wealth is insufficient for the first best effort level to be attainable, i.e. $\sqrt{\frac{A^2}{4} + w(1-\tau)} \leq \frac{A(1+\triangle)}{2}$ or,

$$w(1-\tau) \leq \frac{A^2}{4}\left[(1+\triangle)^2 - 1\right] \equiv \overline{\omega}. \tag{26}$$

- If $w(1-\tau) > \overline{\omega}$ then we have a first best outcome.

- Evidently, this requires that the availability of illiquid assets (w) has to be large enough.

- However, this is not sufficient – τ must also be far enough away from one.

- An economy is constrained by property rights when $w \geq \overline{\omega} > w(1-\tau)$.

- For $\overline{\omega} > w$ imperfect property rights increase the existing level of inefficiency, while for $w \geq \overline{\omega} > w(1-\tau)$ imperfect property rights create new inefficiencies.

- Our main result drops cleanly out of the analysis.

Result 4 *For $w(1-\tau) \in [\underline{\omega}, \overline{\omega}]$, the interest payment, r, is lower and producer effort is greater after a marginal increase in the security of collateral which increases the level of pledgeable wealth, $w(1-\tau)$. For $w(1-\tau) < \underline{\omega}$,* or *$w(1-\tau) > \overline{\omega}$, marginal improvements in the security of collateral do not affect resource allocation (i.e., loan size and effort) in the credit market. However, in the former case, it has a redistributive effect with lenders gaining relative to borrowers.*

- The result captures the mechanism suggested by de Soto (2000) linking property rights that increase the use of collateral and efficiency.

- However, it also makes precise the range of illiquid wealth for which this argument is relevant.

- If wealth is very low, i.e., $w(1-\tau) < \underline{\omega}$, then the outside option constraint is not binding.

- In this case, the terms of the contract are affected by improvements in property rights, but there is no increase in effort conditional on credit being granted.

- However, improvement in property rights eases the constraint of transferring resources from the borrower to the lender, and this benefits the lender at the expense of the rent that the borrower gets.

- Improving property rights have a purely redistributive effect in this case.

- Similarly, if wealth is very high, the resource allocation is already efficient at the first-best level, and therefore, marginal improvements in property rights will not have any effect.

- The upshot of this discussion is that even where there is a "de Soto effect" on effort observed (or, loan size), we would expect that effect to be heterogeneous with $\partial e/\partial \tau$ being proportional to illiquid wealth w.

- There is also the possibility that improving property rights increases competition.

- High cost lenders can survive because they have low τs (loan sharks)

- Improving property rights will level the playing field

Some Empirical Studies

Some Basic Correlations

- Take a bird's eye view of the quality of property rights using cross-country data.

- To illustrate, we take two measures of property rights regimes using standard sources.

- The first is a measure of the security of property rights from the International Country Risk Guide (ICRG).

- Measured on a scale between 0 and 10 - a higher score corresponds to better protection of property rights.

- Figure 1 shows that this score is positively correlated with income per capita in the year 2000.

- The second measure comes from the World Bank doing business project (www.doingbusiness.org).

- We focus on a measure of the ease with which individuals can register their property, specifically the country's rank on this measure for 172 countries.

- This is a purely administrative dimension to property rights and follows the logic of the de Soto argument

- Figure 2 shows that this too is strongly negatively correlated with income per capita in 2000.

- Thus, this more administrative dimension of property rights is weaker in low-income countries.

- Together these figures illustrate the central proposition that improving property rights is associated with economic development.

- However, they say nothing about the direction of causation.

Empirical Issues

- The first issue is what outcome to focus on.

- In a reduced form sense, all of the theoretical channels identified above would suggest a link between the level of output and property rights.

- In all cases, the level of investments, in the stylized model e, is (weakly) higher when property rights are more secure.

- However, as we showed in the example of guard labor, there can also be a re-allocation of effort to or from more productive activities.

- The two trade channels are quite specific in the way that they suggest that improved property rights will have an impact.

- In the first case, we should see a deepening in rental or sale markets for assets.

- In the second, we should see more use of credit among those whose property rights to collateralizable assets are improved.

- To investigate these ideas empirically requires going beyond looking solely at the effects on output (e.g., asset value)

- A second issue is concerning heterogeneous treatment effects

- To illustrate, consider the basic freedom from expropriation argument:

$$\frac{\partial e^*}{\partial \tau} = -\frac{(1-\tau)\, A^2}{2}. \tag{27}$$

- This implies that factors that make A heterogeneous across producers such as wealth, access to other inputs and/or markets will tend to affect the marginal effect of an improvement in property rights.

- The key issue whether in micro or macro data is how to identify the causal effect of changes in property rights on investment or productivity.

- Macro-evidence tends to look at countries as units of analysis, sometimes regions within countries.

- Micro-evidence looks at the effect of property rights using data on firms and/or households.

- The core empirical approach is to run some kind of regression of the form:

$$y_{it} = \alpha + \beta r_{it} + \gamma x_{it} + \varepsilon_{it} \tag{28}$$

- y_{it} is a measure of an outcome for cross-sectional unit i at date t, r_{it} is a measure of property rights and x_{it} are appropriate controls and ε_{it} is an error term.

- Usual identification conerns: omitted variables could be driving a simple correlation between the two, such as better governance could be driving both secure property rights and a more investment-friendly environment.

- The other issue is that of reverse causality: investment itself could affect the nature of property rights.

- One way out is look for instruments such as Acemoglu, Johnson, Robinson (2001)

- In other cases, there are changes in rights over time and space which allow researchers to explore the implications of changes in rights before and after with an explicit time dimension.