

State Capacity and the Social Contract

85th International Atlantic Economic Conference

Tim Besley

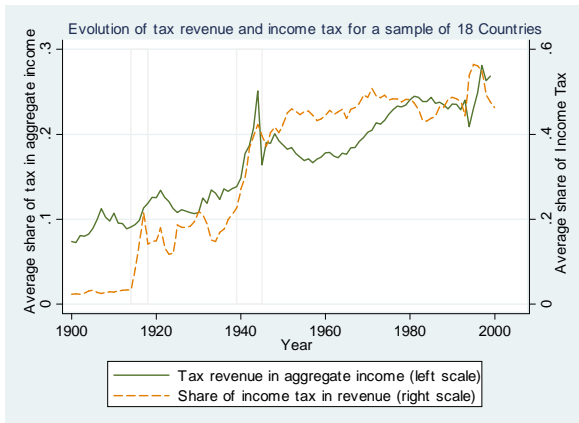
March 2018

Motivation

- ▶ How do states become successful?
- ▶ Traditionally economic analysis assumes state capacities
 - ▶ to tax
 - ▶ to enforce laws
 - ▶ to spend wisely
- ▶ But more recently, what determines these capacities has become a research topic.
 - ▶ Much focus on the role of institutions in shaping incentives to invest in state capacity.

Fiscal Capacity

- ▶ The increase in the capacity of the state to generate public revenues is one of the most striking facts of the 20th century



Taxes and share of income tax over time

Countries in time series are: Argentina, Australia, Brazil, Canada, Chile, Colombia, Denmark, Finland, Ireland, Japan, Mexico, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, and the United States.

Establishing a Social Order

- ▶ Hobbes gave a sharp characterization of the problem of social order
 - ▶ life without a state would be "nasty, brutish and short"
 - ▶ a world of anarchy
- ▶ Government needed to establish order, to tax and provide public goods
- ▶ Huge variation in state effectiveness around the world
 - ▶ Somalia to Denmark

Two Views of the State

View 1: *Force Majeur* (Leviathan)

- ▶ the state is an institution which monopolizes the power to coerce
 - ▶ the strength of the state rests on building coercive institutions
 - ▶ force is the solution to Hobbesian anarchy

View 2: Social Contract

- ▶ The state is about creating a sense of voluntary compliance through a shared sense of obligation
 - ▶ the strength of the state rests on inculcating a form of civic-mindedness (normative order)
 - ▶ cooperative norms/socialization are the solution to Hobbesian anarchy
 - ▶ emphasizes the power/importance of civic culture

This Presentation

Will build a model where both views of state development are combined

- ▶ States have access to a coercive technology to enforce payment of taxes
- ▶ Some citizens are civic-minded and are willing to comply with taxes
 - ▶ this is based on (intrinsic) reciprocity
 - ▶ i.e. the state spending on public goods not transfers
- ▶ Over time, the civic culture evolves based on a simple Darwinian dynamic

This Presentation

- ▶ In this framework a social contract emerges alongside the development of coercive power
- ▶ Institutions which constrain executive power foster civic culture
 - ▶ this leads to a tax system which is based on quasi-voluntary compliance
- ▶ However, there are institutional and economic preconditions for the emergence of a social contract
- ▶ Also show that formal coercion and civic culture are complements in the limit as a civic culture becomes strong

Building Blocks

- ▶ The Idea of a Social Contract
- ▶ Economics of State Capacity
- ▶ Reciprocity
- ▶ Civic-culture
- ▶ Cultural evolution

The Idea of a Social Contract

- ▶ Long history in political thought:
 - ▶ Grotius, Hobbes, Pufendorf, Locke, Rousseau, and Kant
- ▶ For Rousseau and Locke political rights constitute a form of exchange where a citizen accepts obligations in exchange for a benign social order.
 - ▶ If government fails to deliver “natural rights” (Locke) or “general will” (Rousseau), citizens can legitimately withdraw their cooperation.
 - ▶ For Locke state capacity means “morally sanctioned” capacity
- ▶ More recently social contract ideas influenced Buchanan
 - ▶ emphasized the normative ideal of state formation as voluntary exchange
 - ▶ rooted in the Wicksellian “ideal” of unanimity rule
- ▶ Levy (1988) applied these ideas to building state capacity
 - ▶ emphasizes quasi-voluntary compliance
- ▶ Approaches to social contract using repeated games in Binmore (1994, 1998) and Acemoglu (2005)

Economics of State Capacity

Besley and Persson (2009, 2011)

- ▶ Normally characterized as enhancing coercive power of the state
 - ▶ raising taxes
 - ▶ enforcing laws
 - ▶ maintaining law and order
- ▶ Strategic investments in state capacity are influenced by
 - ▶ economic conditions
 - ▶ cohesiveness of institutions
 - ▶ value of public goods
 - ▶ political stability

Reciprocity

Two modelling approaches:

- ▶ Reciprocity is a feature of equilibrium play
 - ▶ repeated interaction facilitates compliance
 - ▶ can work with standard self-interested motives e.g. Binmore (1994, 1998)
- ▶ Intrinsic reciprocity
 - ▶ Citizens have a hard-wired sense of reciprocity
 - ▶ emphasized in evolutionary biology e.g. Trivers (1971)
 - ▶ evidence of reciprocal motives in experiments even without repeated play e.g. Fehr and Gaechter (2000)

Civic Culture

- ▶ Basic idea is that values sustain effective governance
 - ▶ and can sustain institutions such as democracy
 - ▶ rhetoric of politicians

"The first requisite of a good citizen in this Republic of ours is that he shall be able and willing to pull his weight" (Teddy Roosevelt)

"Ask not what your country can do for you but what you can do for your country" JFK

Civic Culture

- ▶ Locus classicus is Montesquieu (1748)
- ▶ Parsons (1937)
 - ▶ social action motivate by “common value integration”
- ▶ Almond and Verba (1963) is a classic modern account
 - ▶ They discuss *participant cultures* where the citizen is expected to have “the virtues of the subject – to obey the law, to be loyal – but he is also expected to take some part in the formation of decisions” (pg. 118).
- ▶ Putnam (1988)’s account of the underpinnings of functional democracy draws on importance of cultural underpinnings of democratic institutions

Cultural Evolution

Models based on social learning

- ▶ Cavalli-Sforza and Feldmann (1981), Boyd and Richerson (1985)

Models based on evolution of preferences

- ▶ Guth and Yaari (1982), Dekel et al (2007), Alger and Weibull (2013)
 - ▶ applied to reciprocity by Sethi and Somanatham (2000)

Strategic models in economics

- ▶ Bisin and Verdier (2000), Tabellini (2008)

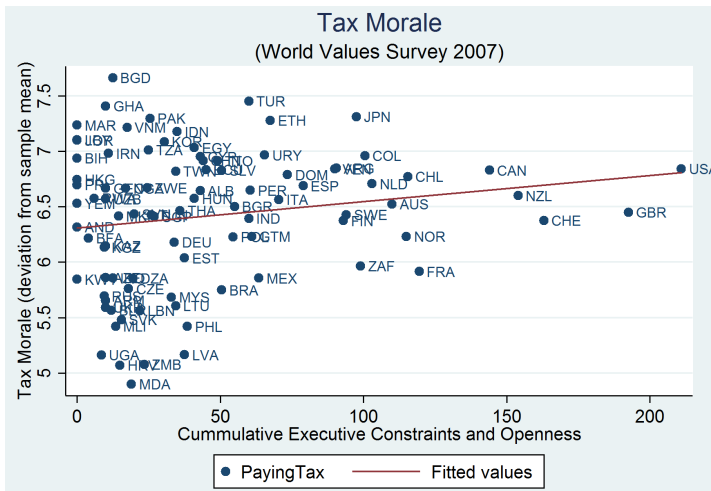
WVS question

"Is it justifiable to cheat on your taxes if you have a chance?"

- ▶ answer on 10 point scale
- ▶ asked in all six survey waves across 94 countries
 - ▶ about 250,000 observations
- ▶ Variation across individuals
- ▶ Justifiable cheating
 - ▶ decreasing in income
 - ▶ decreasing in education
 - ▶ more prevalent among men

WVS question

"Is it justifiable to cheat on your taxes if you have a chance?"
Strong (and "robust") correlation with institutions:



Roadmap

- ▶ **Basic model of taxation and public spending**
- ▶ Optimal policy with civic culture
- ▶ Evolution of civic culture and dynamics of state capacity
- ▶ Role of preferences, institutions and coercion
- ▶ Fiscal capacity investment

Basics

There is a continuum of citizens of size one.

- ▶ same level of private income w .
- ▶ $e < 1$ of the population is an governing elite.

Among the non-elite:

- ▶ fraction μ are “civic-minded” or “virtuous”, V
- ▶ fraction $(1 - \mu)$ are “materialists”, M .

Basics

Preferences

$$\alpha G + z \quad (1)$$

where G is a public good and z is private consumption.

- ▶ Value of public goods, α , is stochastic:
 - ▶ $\alpha \in [1, A]$; it is drawn afresh each period and is iid with cdf $H(\alpha)$.
 - ▶ $\alpha > 1$ makes public goods more valuable than private income.
 - ▶ but whether this is the priority of government depends on institutions

Basics

Taxpayer citizens must decide how much income to declare as taxable

- ▶ denote by $x \in [0, w]$.
- ▶ The material cost of not complying with their taxes is $\tau C(w - x)$ where

$$C(w - x) = \begin{cases} \frac{(w-x)^2}{2} & \text{if } w > x \\ 0 & \text{otherwise.} \end{cases}$$

- ▶ and τ is an index of coercive power.

Policy

Elite choose $\{t, G, b, B\}$

- ▶ t – income tax rate; G – public goods; b – transfers to non-elite; B – transfers to the elite
- ▶ institutions constrain: $b = \sigma B$ with $\sigma \leq 1$.

Elite preferences:

$$\alpha G + B + w$$

Government budget constraint

$$B [e + (1 - e) \sigma] = tX - G$$

- ▶ where X is the amount of tax declared to the tax authorities by the citizens.

Let $\theta(\sigma) = [e + (1 - e) \sigma]^{-1}$

Civic Culture

For non-elites preferences are

$$\alpha G + w - x [t - \lambda [G - B]] - \tau C (w - x) + b. \quad (2)$$

where $\lambda = 0$ for materialists and $\lambda > 0$ for civic-minded citizens.

- ▶ The term

$$x\lambda [G - B]$$

capture civic-mindedness among citizens who are more willing to pay taxes when there is public goods provision.

- ▶ Two elements of reciprocity with willingness to pay taxes
 - ▶ higher when used to finance public goods, G .
 - ▶ lower when used for transfers to the elite, B .
- ▶ Tax compliance will now depend on the how the state allocates resources (cf Levy)

Tax Compliance

- ▶ Choice of tax payment, x , minimizes

$$x [t - \lambda [G - B]] + \tau C (w - x).$$

- ▶ Thus:

$$\hat{x}(z) = w - z$$

where

$$z = \max \left\{ \frac{t - \lambda [G - B]}{\tau}, 0 \right\}$$

- ▶ Tax compliance:
 - ▶ decreasing in t and increasing in τ whenever $z > 0$.
 - ▶ increasing in G and decreasing in B for civic-minded whenever $z > 0$.

Fiscal Capacity

What is the maximum tax revenue that a government can raise?

- ▶ Total tax declared is

$$X(t, \lambda [G - B], \mu, \tau) = (1 - e) \left[w - \mu \left[\max \left\{ \frac{t - \lambda [G - B]}{\tau}, 0 \right\} \right] \right]$$

- ▶ Total tax revenue is:

$$T(t, z, \mu, \tau) = tX(t, z, \mu, \tau)$$

where $z = \lambda [G - B]$.

- ▶ Let

$$\hat{t}(z, \mu, \tau) = \arg \max_{t \geq 0} \{ T(t, z, \mu, \tau) \} = \frac{1}{2} [\tau w + \mu \lambda z] .$$

- ▶ the revenue maximizing tax rate is increasing in μ and z .
- ▶ Observe that $T(\hat{t}(z, \mu, \tau), z, \mu, \tau) = \frac{1-e}{4\tau} [\tau w + \mu \lambda z]^2$ is increasing and convex in z .

Roadmap

- ▶ Basic model of taxation and public spending
- ▶ **Optimal policy with civic culture**
- ▶ Evolution of civic culture and dynamics of state capacity
- ▶ Role of preferences, institutions and coercion
- ▶ Fiscal capacity investment

Optimal Policy

- ▶ $\{G^*(\alpha, \sigma), B^*(\sigma, \alpha)\}$ maximizes

$$\alpha G + B$$

subject to

$$[T(t, \lambda[G - B], \mu, \tau) - G]\theta(\sigma) = B.$$

- ▶ Define

$$T_H(\mu, \tau) = T(\hat{t}(\lambda T_H(\mu, \tau), \mu, \tau), \lambda T_H(\mu, \tau), \mu, \tau)$$

and

$$T_L(\mu, \tau) = T(\hat{t}(-\lambda T_L(\mu, \tau), \mu, \tau), -\lambda T_L(\mu, \tau), \mu, \tau).$$

Optimal Policy

Proposition

Optimal public expenditures depend on the realization of α given $\{\sigma, \mu, \tau\}$ as follows:

1. *If $1 \geq \theta(\sigma) \left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$, then for $\alpha \in [1, A]$, then $G^*(\alpha, \sigma) = T_H(\mu, \tau)$ and $B^*(\alpha, \sigma) = 0$.*
2. *If $A > \theta(\sigma) \left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right] > 1$ then then:*
 - 2.1 *for $\alpha \geq \theta(\sigma) \left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$, then $G^*(\alpha, \sigma) = T_H(\mu, \tau)$ and $B^*(\alpha, \sigma) = 0$;*
 - 2.2 *for $\alpha < \theta(\sigma) \left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$, then $G^*(\alpha, \sigma) = 0$ and $B^*(\alpha, \sigma) = \theta(\sigma) T_L(\mu, \tau)$*
3. *If $A < \theta(\sigma) \left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$ then for $\alpha \in [1, A]$, then $G^*(\alpha, \sigma) = 0$ and $B^*(\alpha, \sigma) = \theta(\sigma) T_L(\mu, \tau)$.*

Optimal Policy

- ▶ For fixed tax revenues elite prefer to spend on transfers if $\alpha < \theta(\sigma)$
- ▶ But the level of tax revenues depends on choice as civic minded citizens reward or punish based policy choice
- ▶ So critical value of $\alpha = \theta(\sigma) \left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$.
 - ▶ if $\left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$ is low, then the civic-culture creates a form of “soft power” which reinforces incentives to spend on public goods.
- ▶ Since $\left[\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right]$ is decreasing in μ and increasing in τ
 - ▶ a stronger civic culture generates more incentive for public goods provision
 - ▶ greater coercion generates less of an incentive for public goods provision
 - ▶ although more public goods conditional on spending on public goods

Roadmap

- ▶ Basic model of taxation and public spending
- ▶ Optimal policy with civic culture
- ▶ Evolution of civic culture and dynamics of state capacity
- ▶ Role of preferences, institutions and coercion
- ▶ Fiscal capacity investment

Evolution of Civic Culture

Let $U^J(\mu_s; \sigma, \tau)$ be the expected utility of being a type $J \in \{M, S\}$ when there is a fraction μ_s of civic minded types in the population.

- ▶ Use standard replicator dynamic where

$$\begin{aligned}\mu_{s+1} - \mu_s &= \mu_s \phi \left[U^M(\mu_s; \sigma, \tau) - \bar{U}(\mu_s; \sigma, \tau) \right] \\ &= \mu_s (1 - \mu_s) \phi \left[U^M(\mu_s; \sigma, \tau) - U^S(\mu_s; \sigma, \tau) \right] \\ &= \mu_s (1 - \mu_s) \phi \bar{\Delta}(\mu_s; \sigma, \tau).\end{aligned}$$

Hence, we need to explore how the fraction of civic minded types affects this expected utility difference.

- ▶ Three candidate steady states for the fraction of civic minded citizens: $\mu = 1$, $\mu = 0$ and $\Delta(\mu; \sigma, \tau) = 0$.
 - ▶ If $\Delta(\cdot; \sigma, \tau)$ is increasing then any interior steady state is unstable under any reasonable adjustment dynamics.

Evolution of Civic Culture

- ▶ Compliance utility is

$$v(z) = \frac{1}{2}z^2.$$

where $z = \max \left\{ \frac{t - \lambda[G - B]}{\tau}, 0 \right\}$.

- ▶ Overall payoffs are

$$\alpha G^*(\alpha, \sigma) + \sigma B^*(\alpha, \sigma) + w - \tau v(z^*(\alpha, \lambda))$$

where

$$z^*(\alpha, \lambda) = \max \left\{ \frac{t^*(\alpha, \sigma) - \lambda [G^*(\alpha, \sigma) - B^*(\alpha, \sigma)]}{\tau}, 0 \right\}$$

and $\lambda = 0$ for the materialistic citizens.

- ▶ Thus:

$$\Delta(\alpha, \sigma) = v \left(\max \left\{ \frac{t^*(\alpha, \sigma) - \lambda [G^*(\alpha, \sigma) - B^*(\alpha, \sigma)]}{\tau}, 0 \right\} \right) - \tau \left[v \left(\frac{t}{\tau} \right) - v \left(\frac{t^*(\alpha, \sigma)}{\tau} \right) \right]$$

- ▶ Civic-minded citizens' compliance utility depends on α .

Evolution of Civic Culture

► Let

$$\rho(\sigma, \mu, \tau) = H\left(\theta(\sigma) \frac{T_L(\mu, \tau)}{T_H(\mu, \tau)}\right)$$

► Then

$$\begin{aligned}\bar{\Delta}(\mu; \sigma, \tau) &= \tau[\rho(\sigma, \mu, \tau) v\left(\frac{t_L(\mu, \tau)}{\tau}\right) + (1 - \rho(\sigma, \mu, \tau) v\left(\frac{t_H(\mu, \tau)}{\tau}\right))] \\ &\quad - \left[\rho(\sigma, \mu, \tau) v\left(\max\left\{\frac{t_L(\mu, \tau) - \lambda T_L(\mu, \tau)}{\tau}, 0\right\}\right) + (1 - \rho(\sigma, \mu, \tau) v\left(\max\left\{\frac{t_H(\mu, \tau) + \lambda T_H(\mu, \tau)}{\tau}, 0\right\}\right))\right]\end{aligned}$$

► which is ambiguous in sign but increasing in μ , τ and σ .

Evolution of Civic Culture

- ▶ If $\rho(\sigma, \mu, \tau) = 1$, then all spending is on transfers and $\bar{\Delta}(\mu; \sigma, \tau) > 0$
 - ▶ psychological fitness advantage to materialists
- ▶ If $\rho(\sigma, \mu, \tau) = 0$, then all spending is on public goods and $\bar{\Delta}(\mu; \sigma, \tau) < 0$
 - ▶ psychological fitness advantage to civic-minded

Proposition

Long-run civic cultures emerge as follows

1. If $\theta(\sigma) > 1$, then $\mu \rightarrow 1$ in the long-run
2. If $\theta(\sigma) \frac{T_L(1, \tau)}{T_H(1, \tau)} < 1$, then $\mu \rightarrow 0$ in the long run
3. For $\theta(\sigma) \frac{T_L(1, \tau)}{T_H(1, \tau)} > 1 > \theta(\sigma)$, there exists a critical value of $\hat{\mu}(\sigma, \tau)$ which is decreasing in σ and τ such that a civic culture emerges and in the long run $\mu \rightarrow 1$ if and only if $\mu \geq \hat{\mu}(\sigma, \tau)$.

Evolution of Civic Culture

- ▶ In first case, institutions suffice to encourage provision of public goods
 - ▶ civic-culture follows but it does not affect the provision of public goods
 - ▶ but state capacity grows along the dynamic path until $\mu = 1$
- ▶ In second case, even the strongest civic-culture will not induce the government to provide public goods
 - ▶ state capacity grows weaker so elite have less tax revenue to use as transfers over time
- ▶ Third case shows hysteresis
 - ▶ civic culture now affects whether public goods are provided
 - ▶ strong/weak civic cultures are self-enforcing over time

Fiscal Capacity and Civic Culture

- ▶ In this model, fiscal capacity either grows or diminishes over time without investments in coercion
- ▶ There is a positive correlation between states that raise more revenue and provide public goods
 - ▶ but the correlation is not causal
 - ▶ the fundamentals that determine this are $\{\sigma, \tau\}$ and distribution of α

Roadmap

- ▶ Basic model of taxation and public spending
- ▶ Optimal policy with civic culture
- ▶ Evolution of civic culture and dynamics of state capacity
- ▶ **Role of preferences, institutions and coercion**
- ▶ Fiscal capacity investment

The Tilly Hypothesis Revisited

- ▶ Demand for public goods can affect the time path of civic culture and fiscal capacity
 - ▶ Consider what happens with a first order stochastically dominating shift in α
- ▶ Consistent with the Tilly hypothesis
 - ▶ positive shocks to the distribution of α lead to increases in state capacity over time
 - ▶ but working through civic culture
 - ▶ but relevant only in case 3 of the Proposition above
 - ▶ interacts with critical junctures (i.e. close to $\hat{\mu}$)

The Role of Institutions

- ▶ Cohesive institutions are a complement with civic culture
 - ▶ it constrains government to spend more on public goods and increases the payoff from being a civic-minded citizen
 - ▶ works entirely through $\rho(\sigma, \mu, \tau)$
 - ▶ So $\sigma = 0$, is least propitious case for building a civic culture and increasing fiscal capacity
- ▶ We would expect reforms that increase cohesiveness to strengthen civic culture as a by-product
 - ▶ so complementarity between formal and informal institutions
 - ▶ i.e. institutional constraints strengthen the social contract
 - ▶ captures quasi-voluntary compliance

Civic Culture and Benevolent Government

Ideas are relevant even with benevolent government

- ▶ A benevolent government choose $\{G(\alpha), B(\alpha)\}$ to maximize

$$\alpha G + B$$

subject to

$$[T(t, \lambda [G - B], \mu, \tau) - G] = B.$$

which implies that $G = T_H(\mu, \tau)$ since $\alpha > 1$.

- ▶ So civic culture always converges to $\mu = 1$

Roadmap

- ▶ Basic model of taxation and public spending
- ▶ Optimal policy with civic culture
- ▶ Evolution of civic culture and dynamics of state capacity
- ▶ Role of preferences, institutions and coercion
- ▶ **Fiscal capacity investment**

Fiscal Capacity Investment

Now explore the interplay between investing in coercive power and civic culture

- ▶ Study the decision to invest in τ by a strategically minded government
 - ▶ as in Besley/Persson model, these investments are costly
- ▶ In addition to standard considerations will also have an impact via $\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)}$
 - ▶ Will explore whether coercive power and civic culture are complements or substitutes

Fiscal Capacity Investment

- ▶ Let

$$W(\alpha, \sigma) = \alpha G^*(\alpha) + \theta(\sigma) B^*(\alpha)$$

with

$$\begin{aligned} E[W(\alpha, \sigma) : \mu, \tau] &= E\left(\alpha : \alpha \geq \theta(\sigma) \frac{T_L(\mu, \tau)}{T_H(\mu, \tau)}\right) T_H(\mu, \tau) \\ &\quad + H\left(\theta(\sigma) \frac{T_L(\mu, \tau)}{T_H(\mu, \tau)}\right) \theta(\sigma) T_L(\mu, \tau). \end{aligned}$$

- ▶ Define

$$\lambda_s(\sigma, \mu, \alpha) = \begin{cases} \alpha & \text{if } \alpha \geq \theta(\sigma) \frac{T_L(\mu, \tau_s)}{T_H(\mu, \tau_s)} \\ \theta(\sigma) & \text{otherwise.} \end{cases}$$

Suppose that investments in fiscal capacity cost $F(\tau_s - \tau_{s-1})$.

Fiscal Capacity Investment

- ▶ Optimal investment

$$\tau_s \in \arg \max \{ \bar{W}(\sigma, \mu, \tau) - \lambda_s(\sigma, \mu) F(\tau_s - \tau_{s-1}) \}$$

- ▶ Euler equation:

$$\begin{aligned} & E \left(\alpha : \alpha \geq \theta(\sigma) \frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right) \frac{\partial T_H(\mu, \tau)}{\partial \tau} \\ & + H \left(\theta(\sigma) \frac{T_L(\mu, \tau)}{T_H(\mu, \tau)} \right) \theta(\sigma) \frac{\partial T_L(\mu, \tau)}{\partial \tau} \\ & \leq \lambda_{s-1}(\sigma, \mu, \alpha) F'(\tau_s - \tau_{s-1}) \end{aligned}$$

- ▶ LHS is marginal value of extra tax revenue
- ▶ RHS is marginal cost of investment

Fiscal Capacity Investment

- ▶ Interested in knowing whether the LHS is increasing or decreasing in μ .

- ▶ Higher μ reduces $\frac{T_L(\mu, \tau)}{T_H(\mu, \tau)}$

- ▶
$$\frac{\partial T_H(\mu, \tau)}{\partial \tau} = \frac{w}{2\tau} [\tau w + \lambda \mu T_H(\mu, \tau)] > \frac{w}{2\tau} [\tau w - \lambda \mu T_L(\mu, \tau)] = \frac{\partial T_L(\mu, \tau)}{\partial \tau}$$

- ▶ And

- ▶
$$\frac{\partial^2 T_H(\mu, \tau)}{\partial \tau \partial \mu} > 0 > \frac{\partial^2 T_L(\mu, \tau)}{\partial \tau \partial \mu}$$

Fiscal Capacity Investment

This leads to:

Proposition

1. *If $\theta(\sigma) > 1$, then civic culture and fiscal capacity investments are complements*
2. *If $\theta(\sigma) \frac{T_L(1,\tau)}{T_H(1,\tau)} < 1$, then civic culture and fiscal capacity investments are substitutes*
3. *For $\theta(\sigma) \frac{T_L(1,\tau)}{T_H(1,\tau)} > 1 > \theta(\sigma)$, civic culture and fiscal capacity investments are complements for high enough μ and substitutes otherwise*

Complements because of an extra multiplier on fiscal capacity from higher τ when there is a strong civic culture

Summary and Concluding Comments

- ▶ Have developed a model where
 - ▶ state capacity grows with quasi-voluntary compliance
 - ▶ can be interpreted as the development of social contract
 - ▶ this is an alternative view to the standard Weberian idea of growth in coercion
- ▶ Could potentially be developed to consider a wider range of state capacities
- ▶ Part of a broader agenda in which cultural dynamics drive change