Labor coercion

Ec 764

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Reference

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Domar (1970): relative scarcity of land and labor

- Serfdom: labor attached to land. Before 1500 no serfdom in Moscovy.
- Kliuchevsky (1906-1960). *A History of Russia*, 1960 transl., Hogarth.
- Before 1550 Russian peasants were free men; a hundred years later they were serfs.
- Serfdom was instituted within one century.
  Main contributors to new wars in 2d half of XV received land from which they taxed farmers. Tax competition. Land was free, even more so because of newly conquered areas in the east and southeast.
- Government gave something free: land. To be effective it should give something valuable: labor.
  Government gradually restricted the freedom of peasants (in debt with more incentive to move).
  Serfdom by middle of XVII with expansion after.

The Acemoglu-Wolitsky model

- Theoretical model...
- Mass 1 of (coercive) producers. Each has a project with a random outcome:
  - If successful, yield x units of a unique good t, with cdf $F(x)$ and support $(\underline{x}, \bar{x})$, $\underline{x} > 0$.
  - If unsuccessful, yields 0. Probability of success is equal to a (effort) chosen by the worker (serf).
  - Mass $L < 1$ of workers. A lord gets one worker with prob. L
- Output is verifiable ($\neq$ Mayshar et al.), but effort a is not.
  - Contract is a wage-punishment pair (w^y, p^y), with $y \in \{0, y^h\}$ and $y^h = x$.
- The landlord maximizes $$a(Px - w^h) + (1-a)(-w^\ell) - \eta\chi(g), \tag{1}$$
  - subject to the participation constraint
    $$a(w^h - p^h) + (1-a)(w^\ell - p^\ell) - c(a) \geq \bar{u} - g, \quad \text{(serf payoff} \geq \text{payoff of quitting)},$$
  - and the ICC constraint
    $$a \in arg\ max\ \tilde{a}(w^h - p^h) + (1-\tilde{a})(w^\ell - p^\ell) - c(\tilde{a}).$$

Discussion of assumptions

- "contract" prevents running away
- Moral hazard and workers cannot be paid a negative wage. No enforcement of "first-best". Coercion would be a separate problem.
-

Complements to the model

Aggregate production QL with

$$Q = \int_{\underline{x}}^{\bar{x}} a(x) x dF(x). \tag{2}$$

$$P = P(QL). \tag{3}$$

Escaping to another lord γ, to the "city" $1-\gamma$.

$$\bar{u} = \gamma \int_{\underline{x}}^{\bar{x}} (\bar{u} - g(x)) dF(x) + (1-\gamma)\tilde{u}, \qquad \tilde{u} \quad \text{exogenous.} \tag{4}$$

A-W 2

Aggregate level of coercion: $$G = \int_{\underline{x}}^{\bar{x}} g(x)dF(x). \tag{5}$$

Outside option: $$\bar{u} = \tilde{u} - \frac{\gamma}{1-\gamma}G. \tag{6}$$

Assumption 1 $$P\Big(L\int_{\underline{x}}^{\bar{x}} xdF(x).\Big)\underline{x} > \tilde{u} + c'(0).$$

- **Remarks**
  - If L increases, less coercion
  - If $\tilde{u}$ increases, less coercion.

Proposition 1

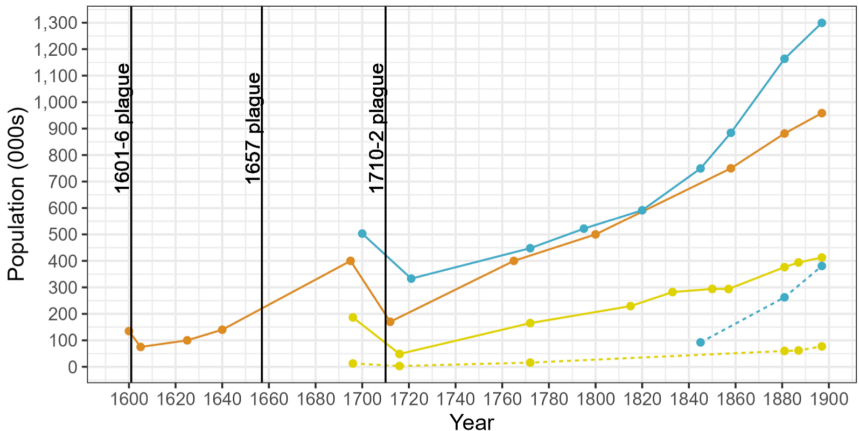
Under Assumption 1, in an equiilibriumn contract, for a producer of type x,

$$w^{\ell} = p^{h} = 0, w^{h} = (1-a)c'(a) + c(a) + \bar{u} - g \geq 0, \qquad p^{\ell} = ac'(a) - c(a) - (\bar{u} - g) \geq 0.$$

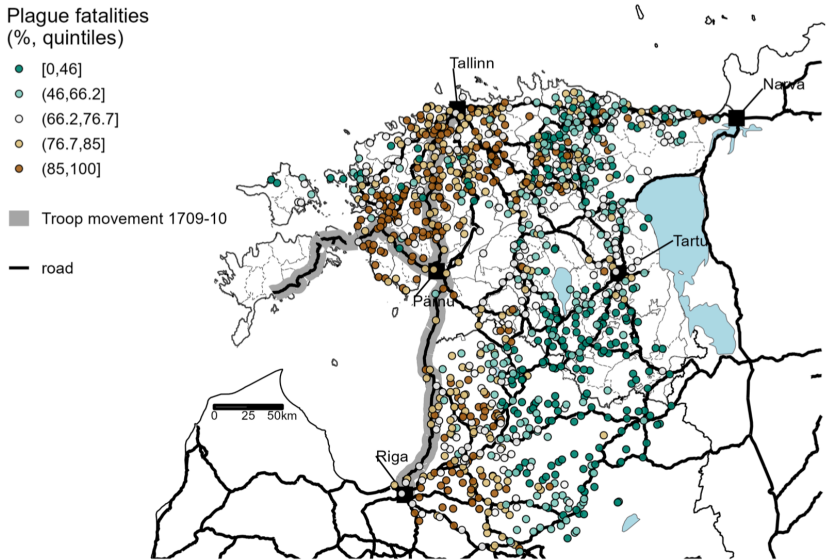
Estonia: Raster (2022)

- Intro: really bad.
- Data: one register
- Method
- Results
- Discussion

Estonia: Raster (2022)



Plague deaths, 1710-12

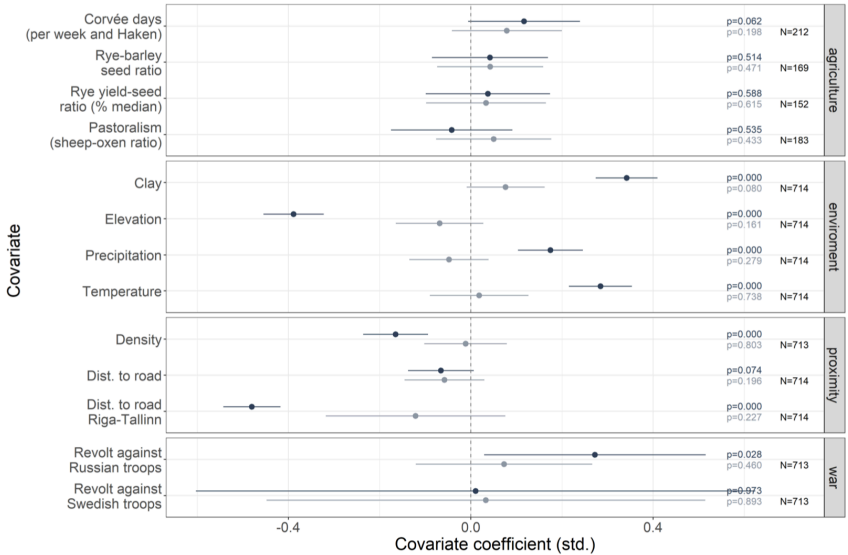


Regressions

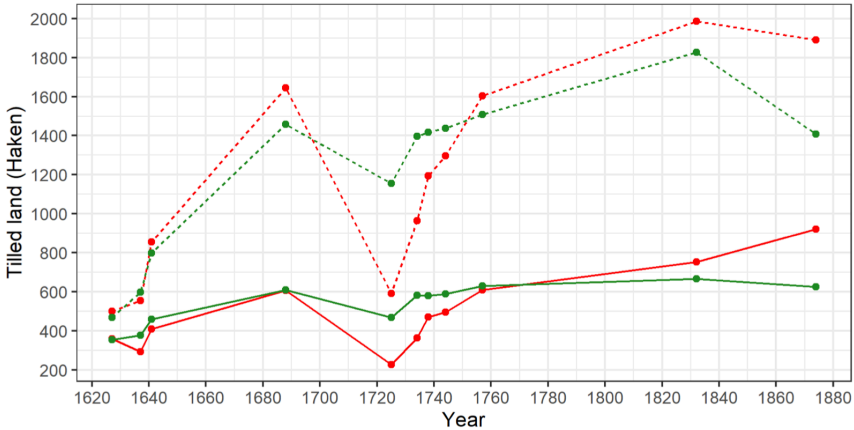
$$Y_{it} = \beta_0 + \beta_1 S_{it} + \theta C'_{ict} + \epsilon_t, \tag{7}$$

$$S = -\Big(\frac{P_{it} - P_{i,t-1}}{P_{it}}\Big). \tag{8}$$

Plague deaths, 1710-12



Tilled land, Northern Livonia, 1627-1881



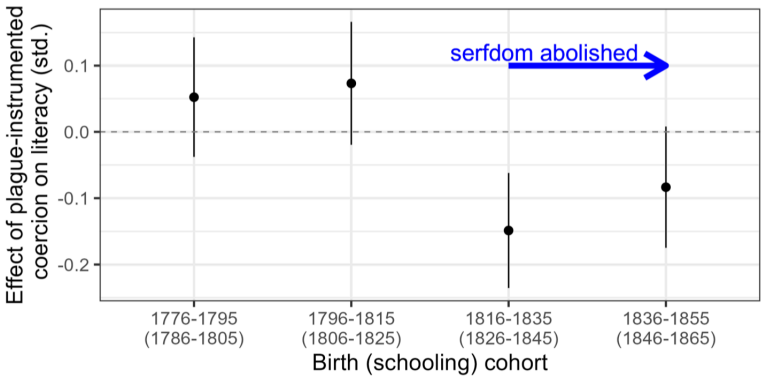
Effect of labor scarcity on coercion

	Corvee days/haken/week			
	1638	1688	1732	1732 IV
Δ% pop reduction 1601-6 plague	0.068***			
	(0.023)			
Δ% pop reduction 1657 plague		0.384**		
		(0.184)		
Δ% pop reduction 1710-2 plague			4.307***	9.390**
			(0.455)	(4.543)
N	99	240	460	391
Adj R^2	−0.060	0.000	0.050	0.060
Mean dep var.	7.086	24.102	27.495	26.855
SD dep var.	4.409	12.335	9.253	8.045
Mean exp. var	−0.235	−0.758	0.354	0.345
SD exp var	3.354	1.422	0.514	0.565
F-stat 1st stage				11.44

Notes: At manor level. Clustered standard error and fixed effects at the parish level. IV: reduction in land is instrumented by 1710-2 plague deaths. Haken≈ 6ha, avg. HH .25-.5 haken. $^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$

Effect of plague-instrumented coercion on literacy of recruits b

Figure 10: Effect of plague-instrumented coercion on literacy of recruits born 1776-1855, Estonia



Effect of instrumented coercion on trust in 2013

	Trust in (std.)		
	Others	Political system	Legal system
Coercion (std).	-0.08^{***}	-0.04	-0.06^{**}
	(0.03)	(0.03)	(0.03)
Male (0/1)	-0.14^{***}	-0.16^{***}	-0.15^{***}
	(0.05)	(0.04)	(0.05)
Age (years)	-0.00^{***}	-0.01^{***}	-0.01^{***}
	(0.00)	(0.00)	(0.00)
Russian speak. (0/1)	-0.56^{**}	-0.80^{***}	-0.46^{*}
	(0.26)	(0.21)	(0.25)
County FE	Y	Y	Y
Education	Y	Y	Y
Income	Y	Y	Y
Adj. R^2	0.04	0.10	0.08
N	1822	1761	1727