Women's Rights and Development

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Motivation

- Over last 200+ years there has been a large expansion in women's economic and political rights.
- Process continues up to today across the world.
- Why did this happen?
- In particular: Why is the expansion of women's rights correlated with increases in income/wealth, decreases in fertility, and other measures of development?

Married Women's Property Rights

- Property rights: the legal rights to acquire, own, sell and transfer property, collect and keep rents, keep one's wages, make contracts, bring lawsuits, and, if seeking divorce, maintain some of the marriage assets and keep control and guardianship of the children.
- Married women did not exercise these rights in full in Europe or US until the legal system was reformed.
- Under the Roman civil law or English common law, women who married lost, if not ownership, then control over their physical property and, upon divorce, lost guardianship over children.

- This changed over time. In particular, married women were granted control over their property and earnings 1850 - 1950 in Europe and US.

E.g.

- France: property rights 1893
  earning rights 1907
- England: 1882
- Sweden: 1874
- US: 1846 - 1920: In all but 4 states, women obtained both property and earnings rights.

Why did married women obtain property rights?

- As husbands, men benefitted (vis a vis their wives) from a patriarchal system.
- As fathers, men hurt by system that favored their sons-in-laws at the expense of their daughters.

Main Hypothesis: Development exacerbated the tension btwn competing interests of man = husband versus man = father, eventually resolving in favor of the latter.

- As fertility ↓ and/or wealth ↑, fathers will attempt to increase their children's utility.
- They do this by ↑ bequests to (or invesments in) their children.
- This primarily benefits their sons and not their daughters since their husbands will extract the gains.
- Assume fathers care about some (weighted) average over the (concave) utility of their children.
- At a critical level of fertility (or wealth), the large disparity between sons' and daughters' welfares will lead men to prefer a system in which women have more control over their own welfare.

What this paper does...

- Develop OLG *Ak* growth model with marriage in which parents care about utility of own consumption and average welfare of their children.
- Patriarchal system: Husband makes all allocation decisions and obtains surplus from marriage.
- Equal rights system: Allocation maximizes the equally weighted utility of both spouses.
- Characterize conditions under which men would have higher welfare by reforming property rights regime.

The model yields 3 main predictions:

- **Fertility**: Lower levels of fertility are associated with earlier reform.

- **Wealth**: The effect of wealth on men's relative preferences for patriarchy vs ER is non-monotonic – first ↑, then ↓. Eventually capital accumulation leads to reform.

- **Wife's welfare**: Legal systems more favorable to women (those influenced by Roman civil law e.g. Napoleonic code or Spanish law), postpone reform.

Empirical work

- I use variation in timing of reform of property rights in US states (1850-1920) to examine empirical validity of model's implications.

I find:

- Robust negative correlation btwn fertility and reform;
- negative correlation btwn existence of legal system that afforded women greater rights and timing of reform;
- Insignificant correlation with per capita income/wealth.

Previous Literature

- Several papers make argument that rights are conceded because it makes those in power better off:
  - Abolition of slavery (inefficiency argument by Fogel & Engerman (1974))
  - Suffrage extensions: e.g. Lizzeri & Persico (2004), Llavador & Oxoby (2005), Ticchi & Vindigni (2006), Justman & Gradstein (1999), Bertocchi (2007).
  - Universal education: Galor & Moav (2006).
  - Child labor laws: Doepke & Zilibotti (2005).
- Women's economic rights:
  - Geddes and Lueck (2002)
  - Doepke and Tertilt (2009)

General Evidence on Paternalism & Girls

Voting preferences and behavior are influenced by the proportion of one's children that are girls.

- Washington (2008): US Congress voting records 1997-98. Finds that, conditional on the total number of children, a US Congressional Representative is more likely to vote liberally on women's issues the greater is the proportion of children that are female.
- Oswald and Podthavee (2006): use the BHPS data to examine preferences towards political parties in the UK. They find that, for a constant family size, parents with more girls have more "left" wing preferences.

The Model

- Married households: husband (h) and wife (w) and $2n$ children. n boys + n girls.
- Individuals share the same (dynastic) utility fn. They care about own consumption & the average utility of their children.

$$U(c_i, U'_h, U'_w) = \log(c_i) + \beta\left(\frac{nU'_h + nU'_w}{2n}\right)$$

- Household begins married life with inherited capital from each spouse.

- *Ak* production.
- Household budget constraint:

$$Ak \geq c_h + c_w + nk'_h + nk'_w$$

where $k = k_i + \tilde{k}_i, \quad i = h, w.$

- Timing: Individuals enter marriage market in first period. In second period, households have children, consume, and bequeath.
- Focus on symmetric equilibria (all parents have the same strategy).

Marriage Market

- Individuals enter marriage market with bequest.
- Assumed unable to write contracts specifying consumption/utility levels.
- Costless search $\Rightarrow$ Accept marriage offer from agent with largest bequest.
- Assume U single < U married.
- Solve for efficient soln by assigning siblings as spouses to one another (n.b.: this is a soln method, not a description of the marriage market!)

No Rights (NR) vs Equal Rights (ER)

- NR: Wife's cons. is set at some exog. low level (women's outside options are low): $c_w = \underline{c}$.

$$V_h(k_h, k_w) = \underset{c_h, k_h', k_w'}{Max} \log c_h + \frac{\beta}{2}\left(V_h(k_h', k_w') + V_w(k_w', k_h')\right)$$

$$V_w(k_w, k_h) = \log \underline{c} + \frac{\beta}{2}\left(V_h(k_h', k_w') + V_w(k_w', k_h')\right)$$

- ER: All marital property is jointly owned. Equil. allocation maximizes:

$$V_h(k_h, k_w) + V_w(k_w, k_h) =$$

$$\underset{c_h, c_w, k_h', k_w'}{Max} \log c_h + \log c_w + \beta[V_h(k_h', k_w') + V_w(k_w', k_h')]$$

Result 1: The husband's and wife's value functions under the NR regime are log-linear in $k - \frac{\underline{c}}{A-n}$:

$$V_h^{NR}(k) = a_h + \frac{1-\frac{\beta}{2}}{1-\beta}\log\left(k - \frac{\underline{c}}{A-n}\right)$$

$$V_w^{NR}(k) = a_w + \frac{\frac{\beta}{2}}{1-\beta}\log\left(k - \frac{\underline{c}}{A-n}\right)$$

In equilibrium:

$$c_h^{NR} = \left(\frac{1-\beta}{1-\frac{\beta}{2}}\right)A\left(k - \frac{\underline{c}}{A-n}\right)$$

$$k'_{NR} \equiv k'_h + k'_w = \frac{\frac{\beta}{2}(Ak-\underline{c})+(1-\beta)\frac{n\underline{c}}{A-n}}{n\left(1-\frac{\beta}{2}\right)}$$

Note: Only total capital to household is determinate (can be divided any given way btwn boys/girls).

Impose 2 conditions on economy:

A1: Husband is at least as well off as wife at t_0:

$$c_h^{NR} > \underline{c} \qquad \Rightarrow$$

$$k_0 > \frac{\underline{c}}{A}\left(\frac{1-\frac{\beta}{2}}{1-\beta} + \frac{A}{A-n}\right)$$

This continues to be true if econ. grows.

A2: The economy grows over time:

$$k'_{NR} > k_{NR}$$

$$\Rightarrow \quad A > \left(\frac{1-\frac{\beta}{2}}{\beta/2}\right)n$$

$$V_h^{ER}(k) = V_w^{ER}(k) = \phi + \frac{1}{1-\beta}\log k$$

In equil.

$$c_h^{ER} = c_w^{ER} = \frac{1-\beta}{2}Ak$$

$$k'_{ER} = \frac{\beta}{n}Ak$$

Comparing Regimes

- $c_h^{NR}(k) > c_h^{ER}(k)$
- $c_w^{NR}(k) < c_w^{ER}(k)$
- $k'_{NR}(k) < k'_{ER}(k)$

Main tension:

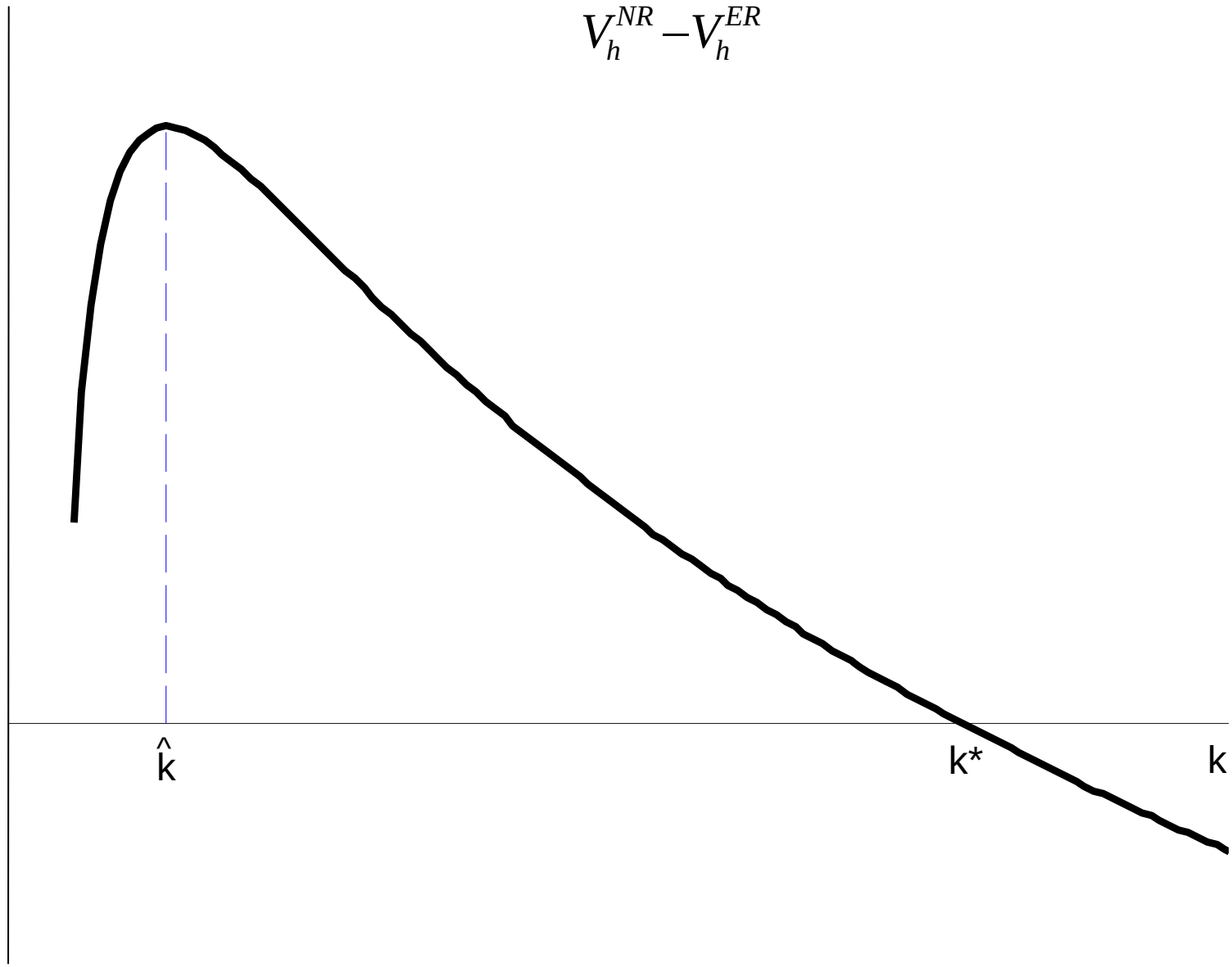
Men consume more under NR but, for a *given level of total investment* in a child's household, k', the utility obtained from their children is lower.

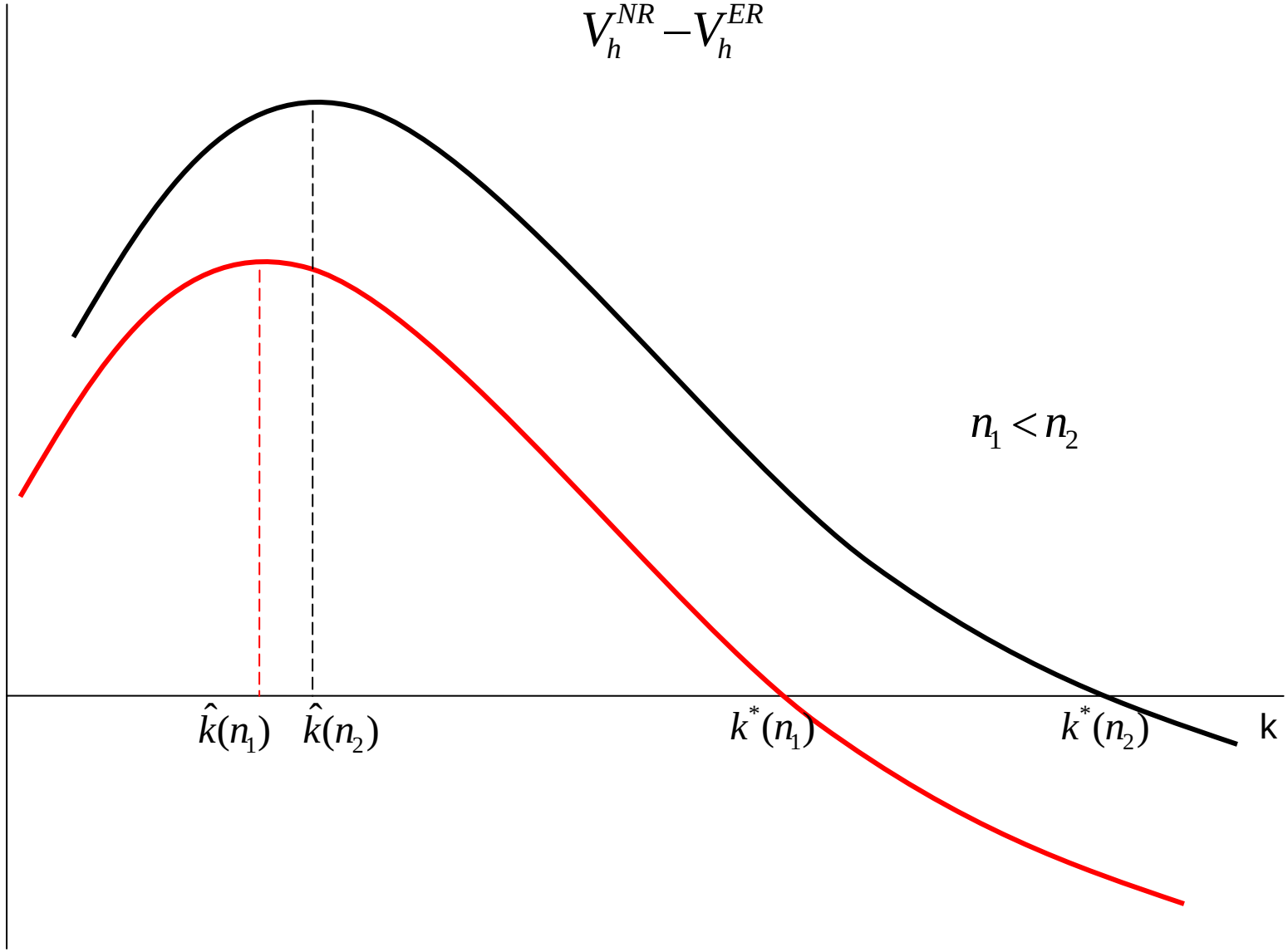
Growth, Fertility, and Regime Change

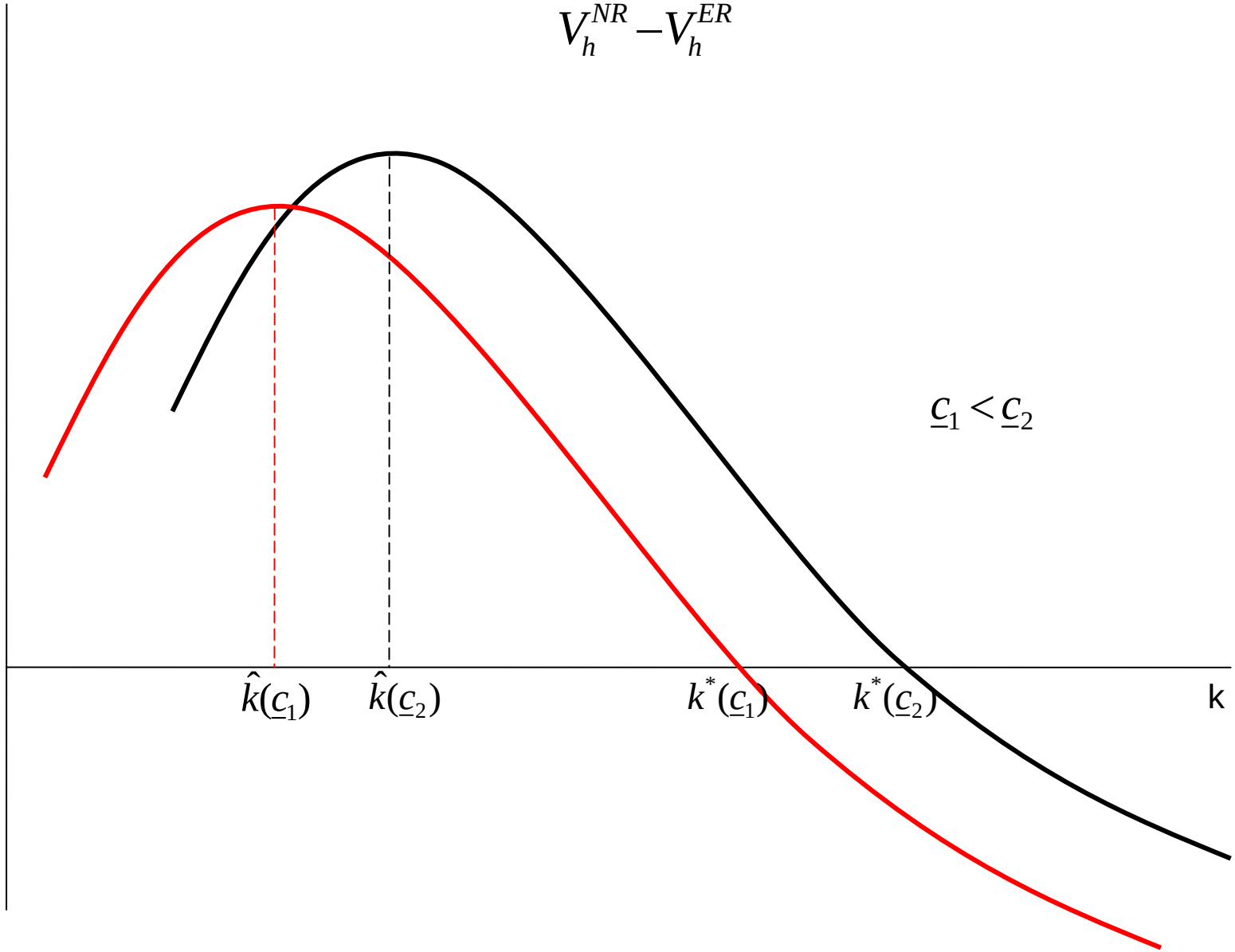
When will men prefer the ER regime to the NR one?

Define $\Delta V_h(k) \equiv V_h^{NR}(k) - V_h^{ER}(k)$

Assume k_0: $\Delta V_h(k_0) > 0$.


$V_h^{NR} - V_h^{ER}$
$\hat{k}$
k*
k


$V_h^{NR} - V_h^{ER}$
$n_1 < n_2$
$\hat{k}(n_1)$
$\hat{k}(n_2)$
$k^*(n_1)$
$k^*(n_2)$
k


$V_h^{NR} - V_h^{ER}$
$\underline{c}_1 < \underline{c}_2$
$\hat{k}(\underline{c}_1)$
$\hat{k}(\underline{c}_2)$
$k^*(\underline{c}_1)$
$k^*(\underline{c}_2)$
k

Model's Implications Robust to:

- Caring less about daughters than sons
- Using different model of parental altruism (only important that parents' care about consumption utility of child)
- Introducing a household public good
- If husband cares about wife's utility, need to drop log formulation.
- Endogenizing fertility
- Stochastic ratio of boys/girls

Heterogeneity

Asymmetry btwn political economy of fertility and wealth.

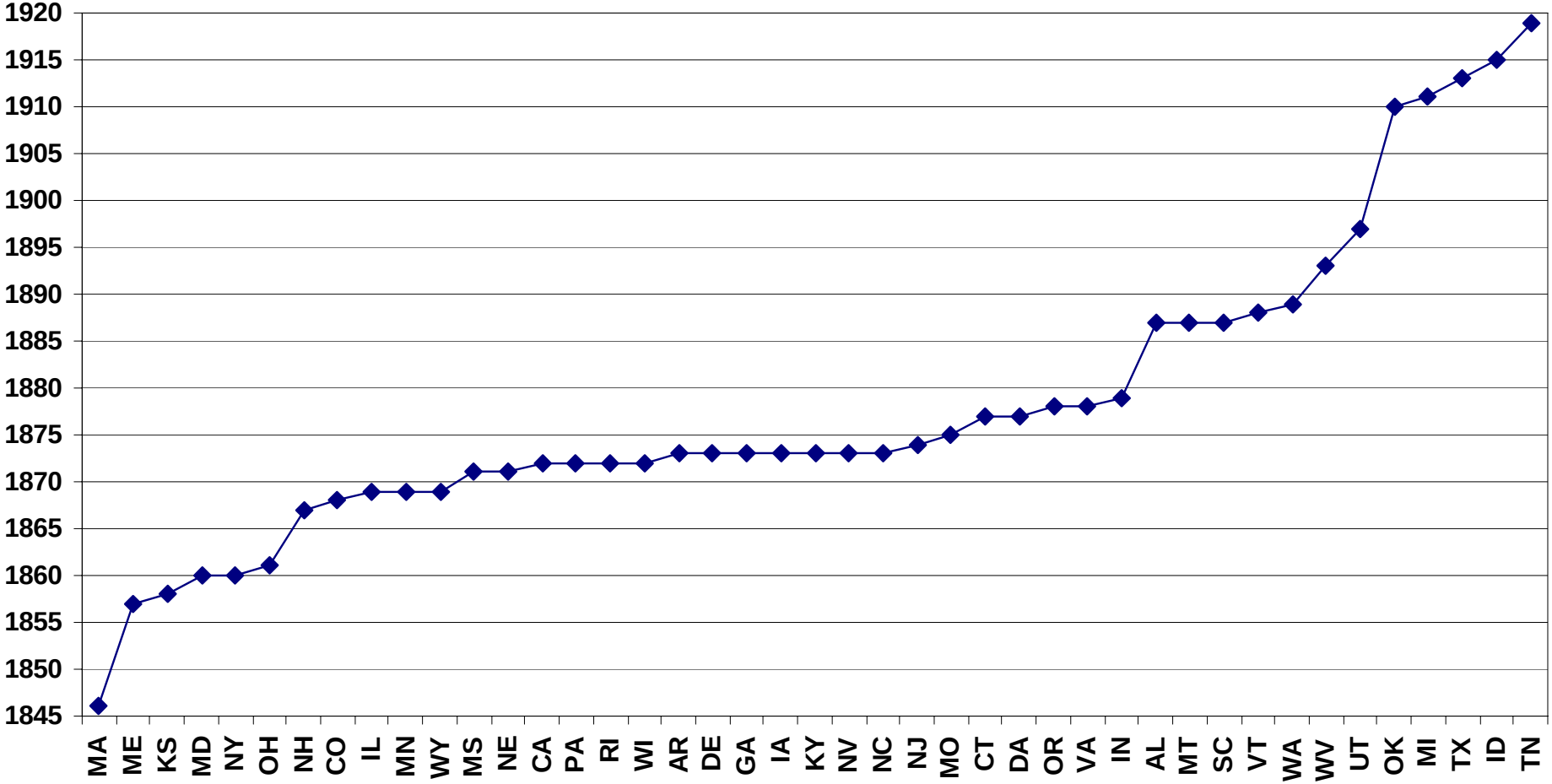
- If, on average, individual fertility falls, all become more in favor of reform.
- If, on average, individual wealth increases, poorer indivs. may become more in favor of patriarchy and richer ones less in favor.

Married Women's Property Rights

- The property rights variable is from Geddes and Lueck (2002) who used legal treatises and original state session laws to determine when a property act gave women management and control of their separate estate and similarly for earnings.

- Dummy variable BOTH takes value of 1 when both estate and earning rights have been granted (and zero otherwise).

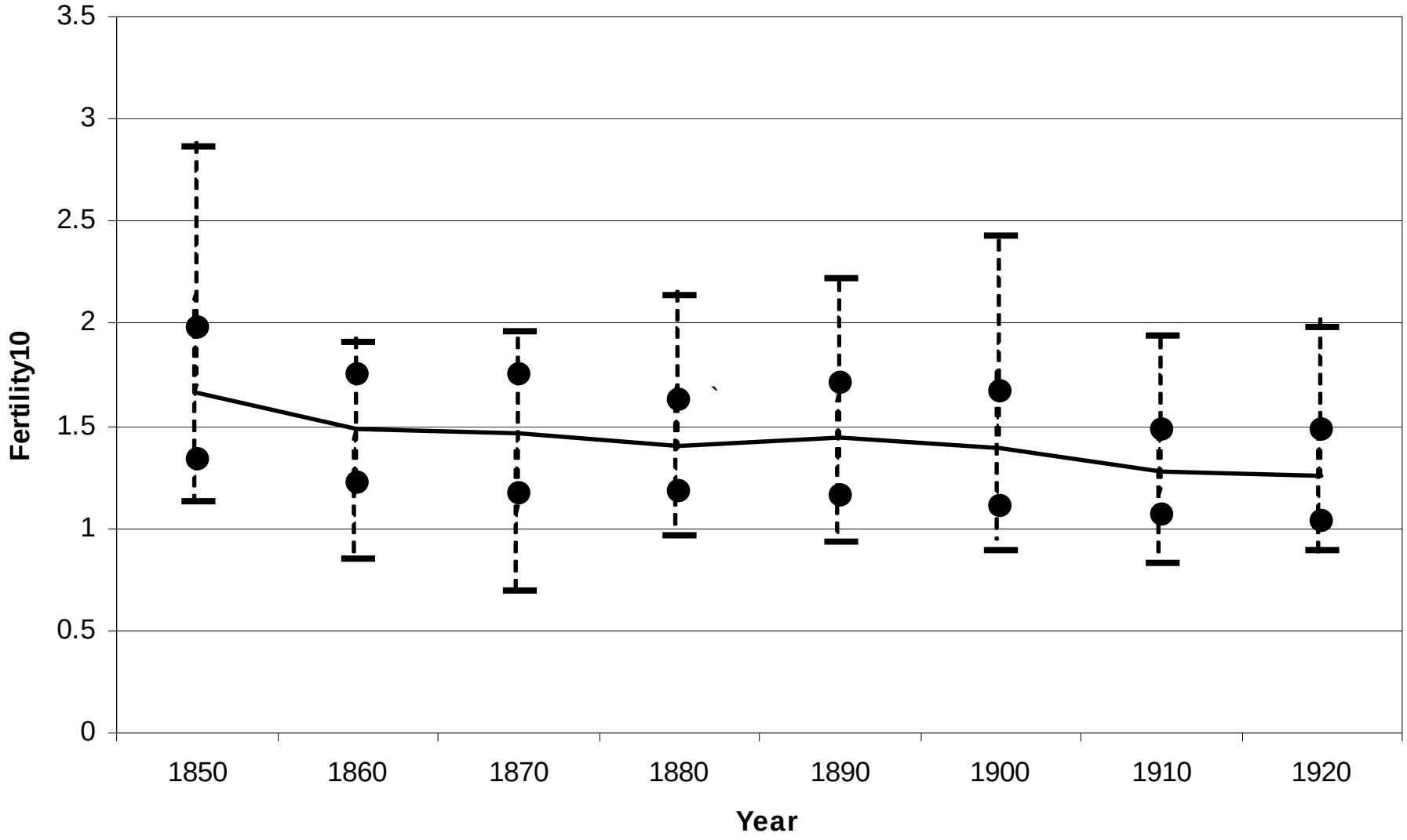
Figure 4
Time-Line: Women's Property Rights (BOTH)



Survival-Fertility

- Theory concerned about *surviving* children, not fertility.
- Use Children(10-19)/Women(20-39) (FERTILITY10). Avg. 1.4 over sample.
- Restrict sample to whites (non-blacks) as white men were in power.

Figure 6
Survival-Fertility Over Time



Other sources of variation across states

- Some states belong to a territory during part of this period. Control for territorial status.
- Some states (12) have equity (chancery) courts. Courts can be used to contract around some of the rigidities of common law. Primarily made use of by wealthy women.
- Some states (8) have community property law (inherited from Spanish Civil law or Napoleonic code). Marital property is jointly owned. Upon death of husband, widow gets 1/2 of marital assets (rather than customary 1/3 awarded by dower in common law system).
- Only 3 states (ID, NV, WA) changed legal system (from common law to community).

Both women's rights?		no		yes	
		mean	# obs	mean	# obs
real wealth per capita	**1850**	4707	33	9586	1
fertility10		1.69	33	1.14	1
community states			4		0
common law states			18		0
real wealth per capita	**1860**	9908	33	6856	5
fertility10		1.53	33	1.32	5
community states			5		0
common law states			20		1
real wealth per capita	**1870**	6162	35	8581	11
fertility10		1.51	35	1.32	11
community states			8		0
common law states			20		6
real wealth per capita	**1880**	7895	15	11511	31
fertility10		1.44	15	1.36	31
community states			6		2
common law states			6		20

Both women's rights?		no		yes			no		yes	
		mean	# obs	mean	# obs		mean	# obs	mean	# obs
real wealth per capita	**1850**	4707	33	9586	1	**1890**	12333	11	15735	37
fertility10		1.69	33	1.14	1		1.57	11	1.38	37
community states			4		0			5		3
common law states			18		0			5		23
real wealth per capita	**1860**	9908	33	6856	5	**1900**	11745	9	16569	39
fertility10		1.53	33	1.32	5		1.49	9	1.34	39
community states			5		0			5		3
common law states			20		1			3		25
real wealth per capita	**1870**	6162	35	8581	11	**1910**	16188	8	21180	40
fertility10		1.51	35	1.32	11		1.35	8	1.25	40
community states			8		0			5		3
common law states			20		6			2		26
real wealth per capita	**1880**	7895	15	11511	31	**1920**	19333	4	23394	44
fertility10		1.44	15	1.36	31		1.33	4	1.24	44
community states			6		2			3		5
common law states			6		20			1		27

Figure 7
US Territory Configuration, September 9 1850

Dep. Variable:	BOTH	BOTH	BOTH
Method:	PROBIT	PROBIT	OLS
FERTILITY10		-0.979**	-0.293*
		(5.00)	(2.45)
WEALTHpc	0.224**	0.098	0.027
	(3.53)	(1.64)	(0.39)
WEALTHpc^2			-0.007
			(0.82)
TERRITORY	-0.297+	-0.481**	-0.253*
	(1.76)	(3.22)	(2.28)
EQUITY	0.088	-0.13	
	(1.01)	(1.18)	
COMMUNITY	-0.623**	-0.644**	-0.187+
	(7.27)	(7.46)	(1.76)
CONSTANT			0.542+
			(1.92)
Year dummies	yes	yes	yes
State dummies	no	no	yes
Region dummies	no	no	no
Obs.	356	356	356
Pseudo/Adj. R^2	0.52	0.56	0.65

Dep. Variable:	BOTH	BOTH	BOTH	BOTH
Method:	PROBIT	PROBIT	OLS	OLS
FERTILITY10		-0.979**	-0.293*	-0.347**
		(5.00)	(2.45)	(2.98)
WEALTHpc	0.224**	0.098	0.027	0.036
	(3.53)	(1.64)	(0.39)	(0.54)
WEALTHpc^2			-0.007	-0.004
			(0.82)	(0.47)
TERRITORY	-0.297+	-0.481**	-0.253*	-0.278**
	(1.76)	(3.22)	(2.28)	(3.18)
EQUITY	0.088	-0.13		
	(1.01)	(1.18)		
COMMUNITY	-0.623**	-0.644**	-0.187+	-0.396**
	(7.27)	(7.46)	(1.76)	(5.93)
CONSTANT			0.542+	0.684**
			(1.92)	(3.57)
Year dummies	yes	yes	yes	yes
State dummies	no	no	yes	no
Region dummies	no	no	no	yes
Obs.	356	356	356	356
Pseudo/Adj. R^2	0.52	0.56	0.65	0.57

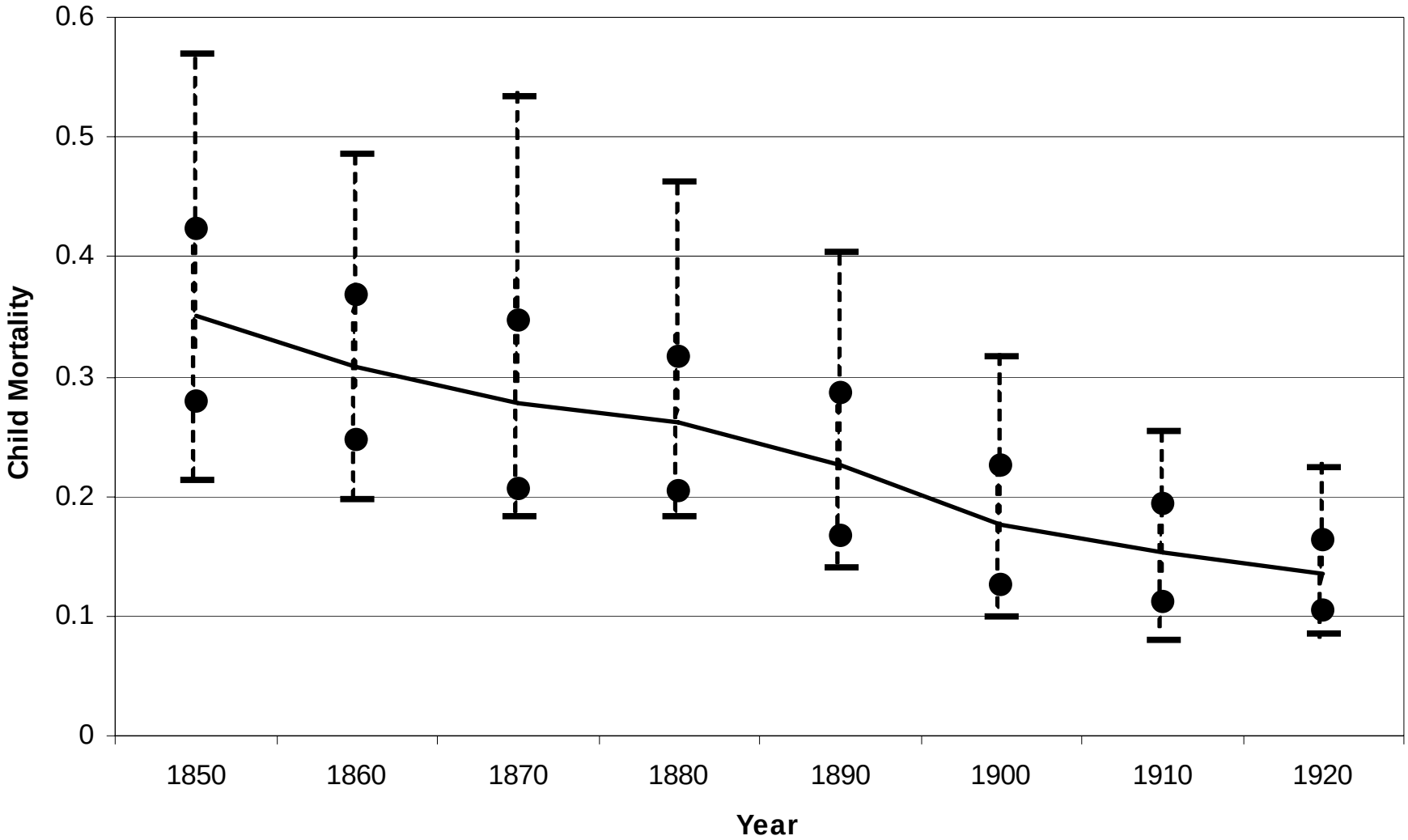
Instrumental Variable

- Fertility is an endogenous variable: potential omitted variable.

- $\frac{surviving\ children}{women} = \frac{ch.born}{women}$ x $(1 - child\ mort.rate)$

- Without time dummies, corr. btwn FERTILITY10 and child mortality is positive. With time dummies, or year by year, corr. is negative.

Figure 8
Child Mortality Over Time



Dep. Variable:	BOTH	BOTH	BOTH	BOTH	FERT10
Method:	PROBIT	PROBIT	OLS	OLS	IV (1st)
FERTILITY10		-0.979**	-0.293*	-0.347**	
		(5.00)	(2.45)	(2.98)	
WEALTHpc	0.224**	0.098	0.027	0.036	-0.117**
	(3.53)	(1.64)	(0.39)	(0.54)	(2.81)
WEALTHpc^2			-0.007	-0.004	0.000
			(0.82)	(0.47)	(0.02)
TERRITORY	-0.297+	-0.481**	-0.253*	-0.278**	-0.162*
	(1.76)	(3.22)	(2.28)	(3.18)	(2.47)
EQUITY	0.088	-0.13			
	(1.01)	(1.18)			
COMMUNITY	-0.623**	-0.644**	-0.187+	-0.396**	-0.211*
	(7.27)	(7.46)	(1.76)	(5.93)	(2.36)
CHILD MORT.					-1.220**
					(3.13)
CONSTANT			0.542+	0.684**	2.307**
			(1.92)	(3.57)	(15.62)
Year dummies	yes	yes	yes	yes	yes
State dummies	no	no	yes	no	yes
Region dummies	no	no	no	yes	no
Obs.	356	356	356	356	356
Pseudo/Adj. R^2	0.52	0.56	0.65	0.57	0.66

Dep. Variable:	BOTH	BOTH	BOTH	BOTH	FERT10	BOTH
Method:	PROBIT	PROBIT	OLS	OLS	IV (1st)	IV (2nd)
FERTILITY10		-0.979**	-0.293*	-0.347**		-1.629*
		(5.00)	(2.45)	(2.98)		(2.40)
WEALTHpc	0.224**	0.098	0.027	0.036	-0.117**	-0.124
	(3.53)	(1.64)	(0.39)	(0.54)	(2.81)	(1.10)
WEALTHpc^2			-0.007	-0.004	0.000	-0.007
			(0.82)	(0.47)	(0.02)	(0.76)
TERRITORY	-0.297+	-0.481**	-0.253*	-0.278**	-0.162*	-0.440**
	(1.76)	(3.22)	(2.28)	(3.18)	(2.47)	(2.77)
EQUITY	0.088	-0.13				
	(1.01)	(1.18)				
COMMUNITY	-0.623**	-0.644**	-0.187+	-0.396**	-0.211*	-0.489*
	(7.27)	(7.46)	(1.76)	(5.93)	(2.36)	(2.43)
CHILD MORT.					-1.220**	
					(3.13)	
CONSTANT			0.542+	0.684**	2.307**	3.087*
			(1.92)	(3.57)	(15.62)	(2.38)
Year dummies	yes	yes	yes	yes	yes	yes
State dummies	no	no	yes	no	yes	yes
Region dummies	no	no	no	yes	no	no
Obs.	356	356	356	356	356	356
Pseudo/Adj. R^2	0.52	0.56	0.65	0.57	0.66	

Endogeneity of child mortality

- Suppose lower child mortality results from greater influence of women (e.g. Miller (2009) shows women's suffrage leads to higher public spending on health and lower child mortality).

- Greater infuence of women would also lead to earlier reform.

- This would lead to negative corr. btwn reform and child mort $\Rightarrow$ a positive coef. on FERTILITY10. This is the opposite of what we find.

- Similar argument for higher wealth/income leading to lower child mortality and to women's rights (the latter being a normal or luxury good). They imply a positive coef. on FERTILITY10. We find negative.

Table 8 - Robustness

OLS: dependent variable = BOTH

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FERTILITY10	-0.317**	-0.274*	-0.295**			-0.304*	-0.281*
	(3.08)	(2.21)	(2.64)			(2.58)	(2.40)
CITY		0.003+					
		(1.90)					
MALE			0.004				
			(0.93)				
CHILDBORN				-0.072*			
				(1.98)			
FERTNEW					-0.152*		
					(2.13)		
FSCHOOL						-0.001	0.01
						(0.57)	(1.29)
MSCHOOL							-0.011
							(1.49)
WEALTHpc	0.026	0.006	0.027	0.001	0.031	0.04	0.042
	(0.40)	(0.08)	(0.40)	(0.01)	(0.45)	(0.58)	(0.62)
WEALTHpc^2	-0.011	-0.004	-0.008	-0.001	-0.006	-0.009	-0.01
	(1.43)	(0.43)	(0.91)	(0.08)	(0.74)	(1.08)	(1.23)
TERRITORY	-0.376**	-0.261*	-0.258*	-0.212+	-0.230*	-0.252*	-0.240*
	(3.47)	(2.37)	(2.19)	(1.69)	(2.06)	(2.19)	(2.03)
COMMUNITY	-0.13	-0.163	-0.218+	-0.14	-0.17	-0.187+	-0.224*
	(1.20)	(1.51)	(1.94)	(1.23)	(1.60)	(1.76)	(2.03)

All specifications include year and state dummies.

Conclusion

Empirical work supports predictions:

- ↓ fertility hastened the expansion of married women's economic rights;
- legal regime more favorable to women is associated with slower reform.
- But, relationship btwn reform and per-capita wealth insignificant → introducing heterogeneous wealth distribution yields results that depend on how preferences are aggregated by the political mechanism.