# Rights and Development

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# Why Have Rights Generally Increased Over Time?

Theories can be organized into two categories:

- Rights are won/taken:
  - Threats of revolt or revolution
  - Leaders deposed
- Rights are conceded because it makes (at least some of) those in power better off:
  - Abolition of slavery (inefficient)
  - 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).

# Do Rights Matter?

Some examples:

- Cascio and Washington (2013) examine the impact of VRA of 1965 on state transfers to counties with large black population shares.
  - Use triple differences: counties with higher black population shares in former literacy test states saw greater increases in both voter turnout and state transfers than comparison counties in nonliteracy test states.
- Miller (2013) uses cross-state variation in extending the frachise to women to examine the impact of this right on public health spending.
  - He finds that within a year of suffrage-law enactment, patterns of legislative roll call voting shifted, and local public health spending rose by roughly 35/
- Khan (1996) uses cross-state variation in granting married women property rights to study the effect on women's patenting activity.

# Outline

Goal: *To familiarize you with basic strategic and non-strategic models on the extension of rights (modern political economy).*

I will discuss two examples in depth:

- Rights "taken": franchise extension
  - Model based on Acemglu & Johnson (2000)
- Rights "granted": married women's property rights
  - Fernández (2014): Theory and evidence

# Franchise Extension or Democracy

Why did many Western countries become democratic during the $19^{th}$ century?

- Threat of revolution (e.g. Acemoglu & Robinson (2000))
  - Main idea: franchise extension as a commitment device to future redistribution
  - Argue that in Britain, France, Germany, and Sweden, the threat of revolution was the major factor in the extension of the franchise to the poorer segments of the society.
- Solved inefficient conflicts within the elite (patronage politics) (Lizzeri & Persico (2004), LLavador & Oxoby (2005))
  - Main idea: democracy more efficient for elite than targeted redistribution
  - Show that in England there is a dramatic change in local public spending (as fraction of total govt spending) and composition changes towards local public goods rather than targeted transfers.

# A Basic Model

- Based on Acemoglu-Robinson (2000) and used by authors, with some variations, in many of their subsequent papers

## Population

- Suppose that there are two classes: the *rich elite* with income $y^r$ and the *poor* with income $y^p$, $y^p < y^r$
- Population mass $= 1$. $\lambda =$ prop poor; $1 - \lambda =$ prop rich.
- Mean income $= \overline{y}$

## Taxation

- Taxation: linear income tax $\tau \geq 0$
- Taxation is distortionary: cost is $C(\tau)\overline{y}$ increasing, convex
- Proceeds distributed via lump-sum transfer $T = (\tau - C(\tau))\,\overline{y}$
- Optimal tax for poor: $Max(1-\tau)y^p + T \Rightarrow \tau^p$ $s.t.$ $C'(\tau^p) = \overline{y} - y^p$
- Optimal tax for rich $= 0$

# Preferences and Decisions

- All agents have indirect utility fns that are linear in net income
- All discount future by $\beta \epsilon (0,1)$
- In the absence of democracy or revolution, rich decide tax policy
- Poor agents can revolt; revolution always succeeds.
- Revolution reduces future income to $\mu^i \overline{y}$, $\mu^i \epsilon \{\mu^h, \mu^l = 0\}$
- This income is shared among poor so each poor citizen receives $\frac{\mu^i \overline{y}}{\lambda}$
- The $pr(\mu^i = \mu^h) = q$

# Timing and Equilibrium Concept

At each $t$, if a revolution has not occurred in the past and no democracy:

- $\mu_t$ is revealed
- Rich agents decide whether to extend the franchise
- If franchise is extended, tax rate is decided by majority vote $\Rightarrow \tau = \tau^p$ thereafter (democracy is an absorbing state)
- If franchise not extended, rich elite decides tax
- If no franchise, poor decide whether to revolt
- Revolution is an absorbing state

Equilibrium concept: Markov perfect equilibrium

- Solve for MPE: strategies only depend on current state of the world

# Strategies for $(E, \mu^l)$

Suppose the revolution $R$ occurred at $t$.

Payoffs as of then are:

$$V^p(R, \mu^i) = \sum_{s=t}^{\infty} \beta^{s-t} \cdot \frac{\mu^i \overline{y}}{\lambda} = \frac{\mu^i \overline{y}}{\lambda(1-\beta)} \quad ; \quad V^r(R, \mu^i) = 0$$

- $\Rightarrow$ No revolution when $\mu^i = 0$ (poor better off with zero redistribution)
- $\Rightarrow$ rich set $\tau = 0$.

Payoffs when rich elite $E$ is in power and $\mu = 0$:

$$V^j(E, \mu^l) = y^j + \beta[(1-q)V^j(E, \mu^l) + qV^j(E, \mu^h)] \quad j = r, p$$

# Strategies for $(E, \mu^h)$: The Revolution Constraint

Suppose that for $(E, \mu^h)$, the rich were to set $\tau = 0$ as well.

To make sure that this is not optimal, assume poor prefer revolution in that case:

$$V^p(R, \mu^h) = \frac{\mu^h \overline{y}}{\lambda(1-\beta)} > \frac{y^p}{1-\beta}$$

Note: We can rewrite as $\mu^h \overline{y} > \lambda y^p$ – i.e., inequality must be large enough.

Make stronger assumption that a "bribe" of one period of poor's preferred tax rate is insufficient to forestall revolution:

$$\frac{\mu^h \overline{y}}{\lambda(1-\beta)} > y^p + \tau^p(\overline{y} - y^p) - C(\tau^p)\overline{y} + \beta\left(\frac{y^p}{1-\beta}\right)$$

# Strategies for $(E, \mu^h)$: Redistribution vs Democracy

- The worst possible outcome for rich is revolution as they get zero forever.
- Two alternatives: redistribute using some $\widehat{\tau} \leq \tau^p$ or extend the franchise
- Note that rich always prefer redistribution to democracy since $\tau = 0$ when $\mu = 0$ and for $\mu^h$, $\widehat{\tau} \leq \tau^p$
- For same reason, poor always prefer democracy to redistribution.
- Assume poor prefer democracy to revolution: $\frac{\mu^h \overline{y}}{\lambda(1-\beta)} < \frac{y^p + \tau^p(\overline{y} - y^p) - C(\tau^p)\overline{y}}{1-\beta}$

Payoff from redistribution $\widehat{\tau} \leq \tau^p$ :

$$V^p(E, \mu^h, \widehat{\tau}) = y^p + \tau^p(\overline{y} - y^p) - C(\tau^p)\overline{y} + \beta[(1-q)V^p(E, \mu^l) + qV^p(E, \mu^h, \widehat{\tau})]$$

# Strategies for $(E, \mu^h)$: Redistribution vs Democracy

- Payoff from redistribution

$$V^p(E, \mu^h, \widehat{\tau}) = y^p + \widehat{\tau}(\overline{y} - y^p) - C(\widehat{\tau})\overline{y} + \beta[(1-q)V^p(E, \mu^l) + qV^p(E, \mu^h, \widehat{\tau})]$$

$$V^p(E, \mu^l) = y^p + +\beta[(1-q)V^p(E, \mu^l) + qV^p(E, \mu^h, \widehat{\tau})]$$

Solving, obtain:

$$V^p(E, \mu^h, \widehat{\tau}) = \frac{y^p + (1 - \beta(1-q))[\widehat{\tau}(\overline{y} - y^p) - C(\widehat{\tau})\overline{y}]}{1-\beta}$$

Note: $V^p(E, \mu^h, \widehat{\tau})$ is $\uparrow$ in $q$

- Find lowest $q$, denoted $q^*$, such that $V^p(E, \mu^h, \widehat{\tau} = \tau^p) = V^p(R)$

# Equilibrium Strategies for $(E, \mu^h)$

- The rich:
  - For $q \geq q^*$, the rich set $\widehat{\tau}$ such that $V^p(E, \mu^h, \widehat{\tau}) = V^p(R)$
  - For $q < q^*$, the rich extend the franchise
- The poor:
  - For $q \geq q^*$, the poor revolt if $\tau \leq \widehat{\tau}$
  - For $q < q^*$, the poor revolt if the rich do not extend the franchise

Main Lessons:

- When $q$ is high, the elite engages in temporary redistribution whenever there is a credible threat of revolution
- When $q$ is low, if there is a credible threat of revolution the elite opts to extend the franchise since redistribution is insufficient to forestall revolution.
- Precisely because a credible revolutionary threat is very infrequent, the poor prefer a revolution to redistribution by the elite.
- It is the elite's inability to commit to redistribution when $\mu$ is low ($\mu = 0$) that leads to franchise extension

# Women's Rights: Motivation

Follows Fernández (2009)

- Large expansion in women's rights over last 200+ years
- Process continues up to today across the world
- Why did this happen?
- Why are women's rights positively correlated with development?
  - ↑ income, ↓ fertility
- I study what economists consider a *fundamental* right: property rights

# 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.

- 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.

- Married women did not exercise property rights in full in Europe or US until the legal system was reformed over the second half of 19th c. and 1st half of 20th c.

# US Background

The majority of US states based their marital laws on English common law which, as summarized in the Blackstone Commentaries, stated:

> *By marriage, the husband and wife are one person in law: that is, the very being or legal existence of the woman is suspended during the marriage, or at least is incorporated and consolidated into that of the husband; under whose wing, protection, and cover, she performs every thing; and is therefore called in our law-a feme-covert.*

- Under 19th century common law, a married woman was bound by the rules of coverture (for Roman based laws as well).

# US Background

Under coverture:

- A husband controlled his wife's property and earnings.
- Married women were not permitted to enter into contracts without the consent of their husbands.
- Children were allocated to their father in the (rare) case of divorce.

# 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 exacerbates the tension between competing interests of *man as husband* versus *man as father*

Eventually this leads men to grant women property rights

# Understanding the Mechanism

- As fertility $\downarrow$ and/or wealth $\uparrow$, fathers increase their children's utility.
- They do this by $\uparrow$ bequests to (or invesments in) their children.
- This primarily benefits their sons and not their daughters
- Why?
  - Husbands own or manage their wife's real and personal property
  - They are able to extract the "surplus" from marriage
- Development increases the disparity between the welfare of sons vs daughters
- At a critical level of fertility (or wealth), this leads men to prefer a regime of greater gender equality.

# Predictions

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

- **Wealth**:

  At low levels of wealth, increases in wealth make patriarchy even more attractive.

  At high levels of wealth, increases in wealth diminish the appeal of patriarchy.

  Eventually capital accumulation leads to reform.

- **Wife's welfare**: Legal systems more favorable to women (e.g. those with a community property system), postpone reform.

**I test predictions using variation in reforms across US states: 1850-1920**

# Literature

- Geddes and Lueck (2002): Inefficiency argument. Increasing in $K$. Test using cross-state variation following Khan (1996)
  - I show that this correlation is not robust to fertility
- Doepke-Tertilt (2009)
  - Random matching in marriage leads to underinvestment in public goods (children's education).
  - Women care more about children $\Longrightarrow$ invest more in their education.
  - Men voluntarily give women econ. rights when technological change increases return to education.
  - Why not simply introduce mandatory education?
  - I show that there is no empirically significant correlation between political reform and education reform or levels.

# Mechanism highlighted today: Paternalism

Other evidence on mechanism: Is political behavior influenced by daughters?

- Washington (2008): US Congress voting records 1997-98. Finds that, conditional on the total number of children, a US Congressional Rep. is more likely to vote liberally on women's issues the greater is the proportion of children that are female.

- Oswald and Podthavee (2009): 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

- $Ak$ production.
- Household budget constraint:

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

  where $k = k_h + k_w$

- Timing: Individuals enter marriage market in first period. In second period, households have children, consume, and bequeath.

## The marriage market:

- Individuals enter marriage market with bequest.
- Perfect competition over spouses in large markets
- $\Longrightarrow \exists$ equil. with efficient investment in public good (e.g. children).

# No Property Rights Regime (NR)

- Patriarchal regime: husb. makes allocation decisions: $k = k_h + k_w$
- Wife's cons. is set at some exog. low level (women's outside options are low): $c_w = \underline{c}$.
- Husband max. $U_h = \log(c_h) + \beta\left(\frac{U'_h + U'_w}{2}\right)$ $s.t.$ $c_h \leq Ak - \underline{c} - nk'_h - nk'_w$

$V_i$ must satisfy the recursive relationships:

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

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

Solution "trick": Write maximization problems *as if* siblings married one another.

# Equal Rights Regime (ER)

- All marital property is jointly owned.
- Solve for allocation that maximizes joint welfare placing equal weight on both spouses' utility, in efficient investment equil. (as before):

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

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

$$s.t. \quad A(k_h + k_w) - c_h - c_w - n(k_h' + k_w') \geq 0$$

# Value functions

The value functions under NR regime are log-linear in $k - \frac{\underline{c}}{A-n}$ :

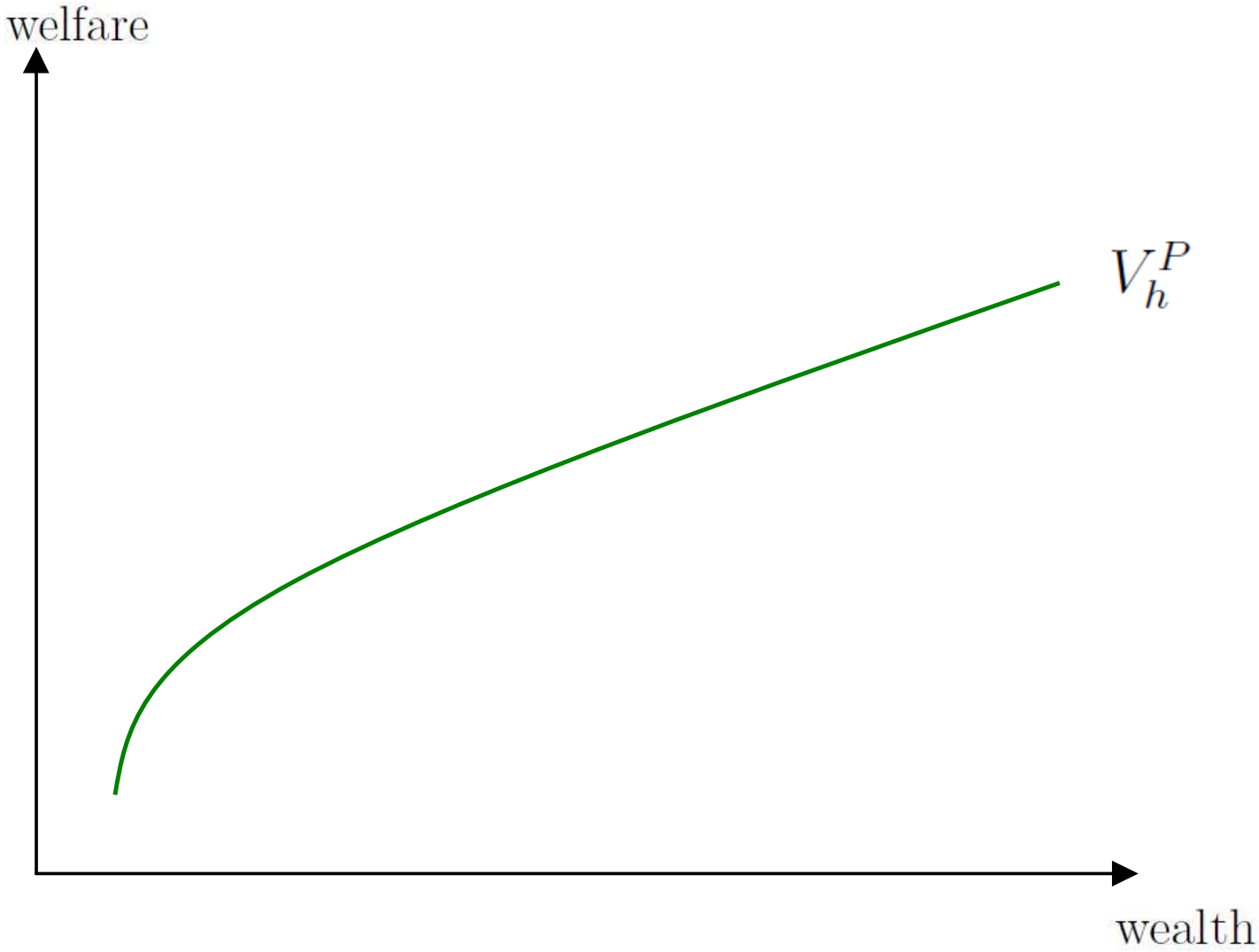
$$V_h^{NR}(k) = a_h + \frac{1-\frac{\beta}{2}}{1-\beta}\log\left(k - \frac{\underline{c}}{A-n}\right)$$

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

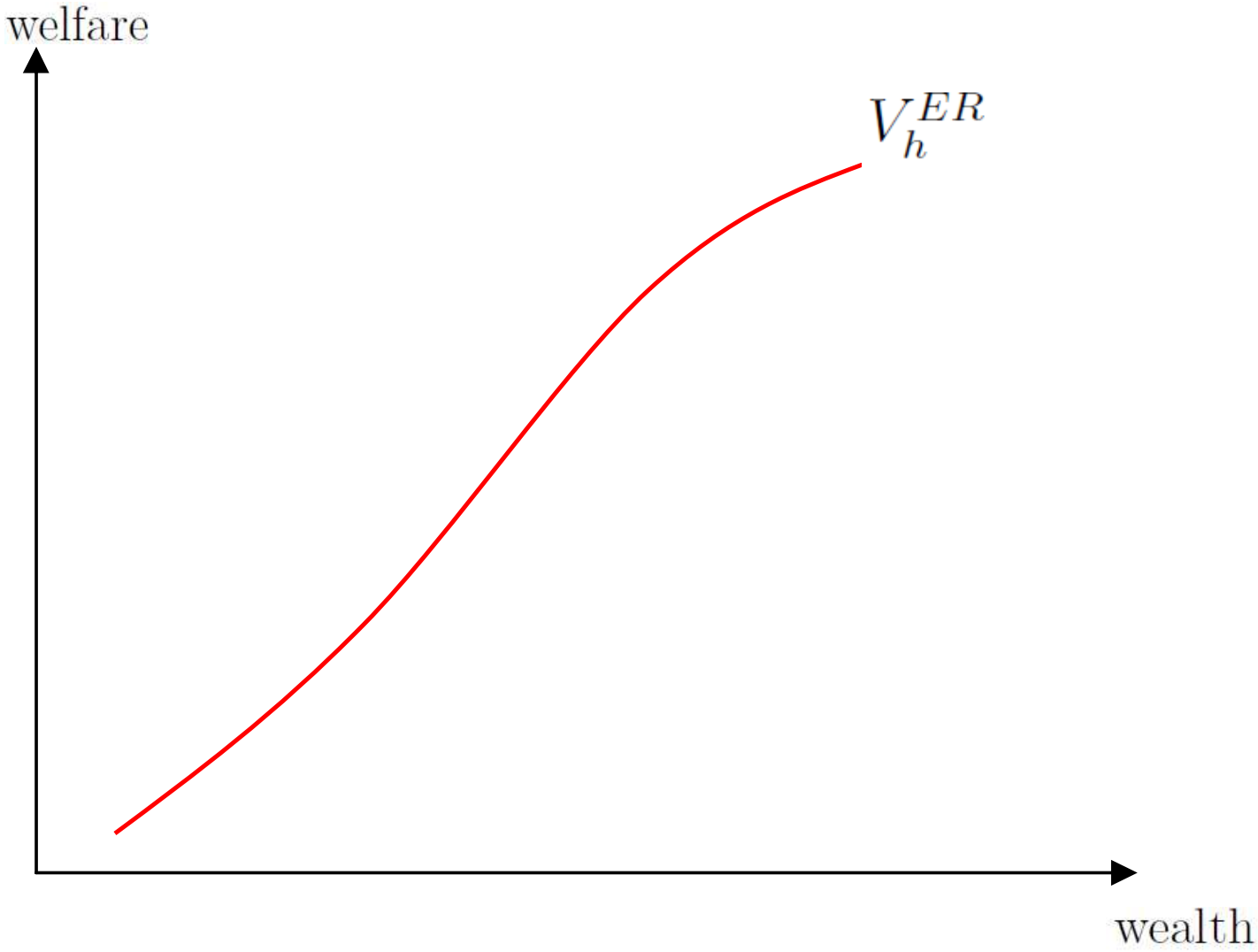
The value functions under ER are log-linear in $k$:

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

# Men's welfare under patriarchy



# Men's welfare under equal property rights



# Comparing Regimes

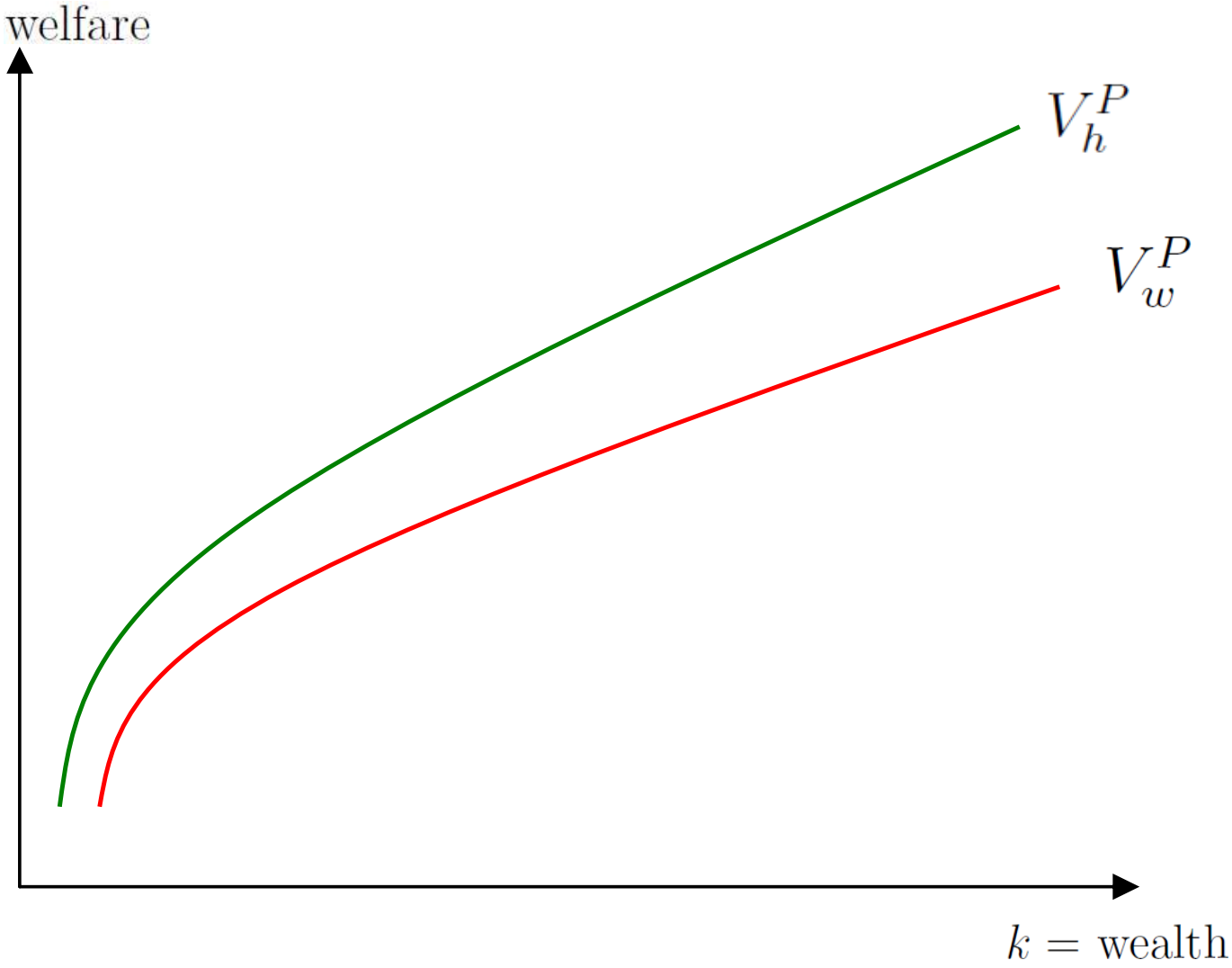
- $c_h^{NR}(k) > c_h^{ER}(k)$
- $V_w^{NR}(k) < V_w^{ER}(k)$
- $k'_{NR}(k) < k'_{ER}(k)$

**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 and the Gender Happiness Gap

As economy grows, welfare of sons and daughers (men & women) $\uparrow$

- Welfare gap between genders increases, however

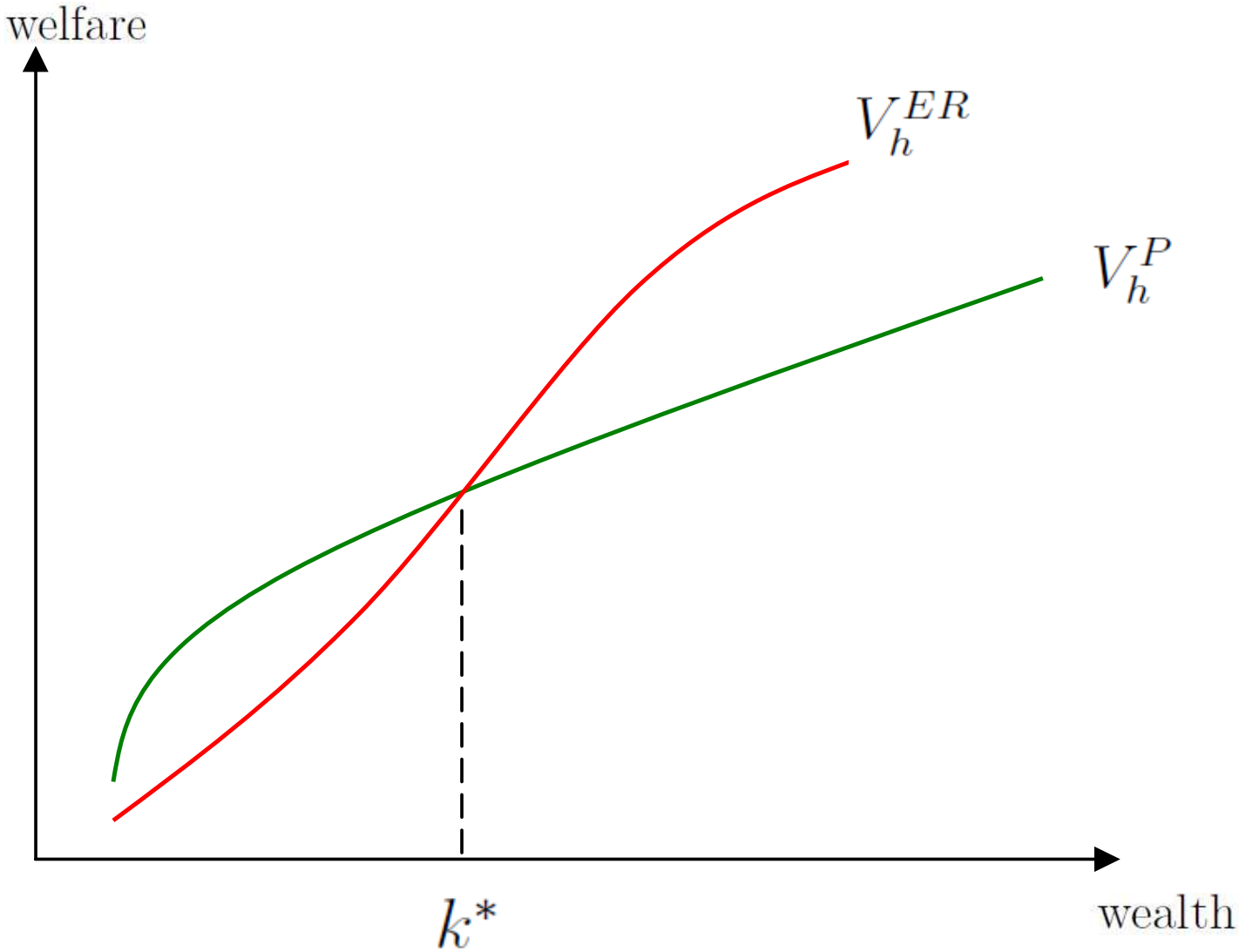

welfare
$V_h^P$
$V_w^P$
$k$ = wealth

# Growth and the Gender Happiness Gap

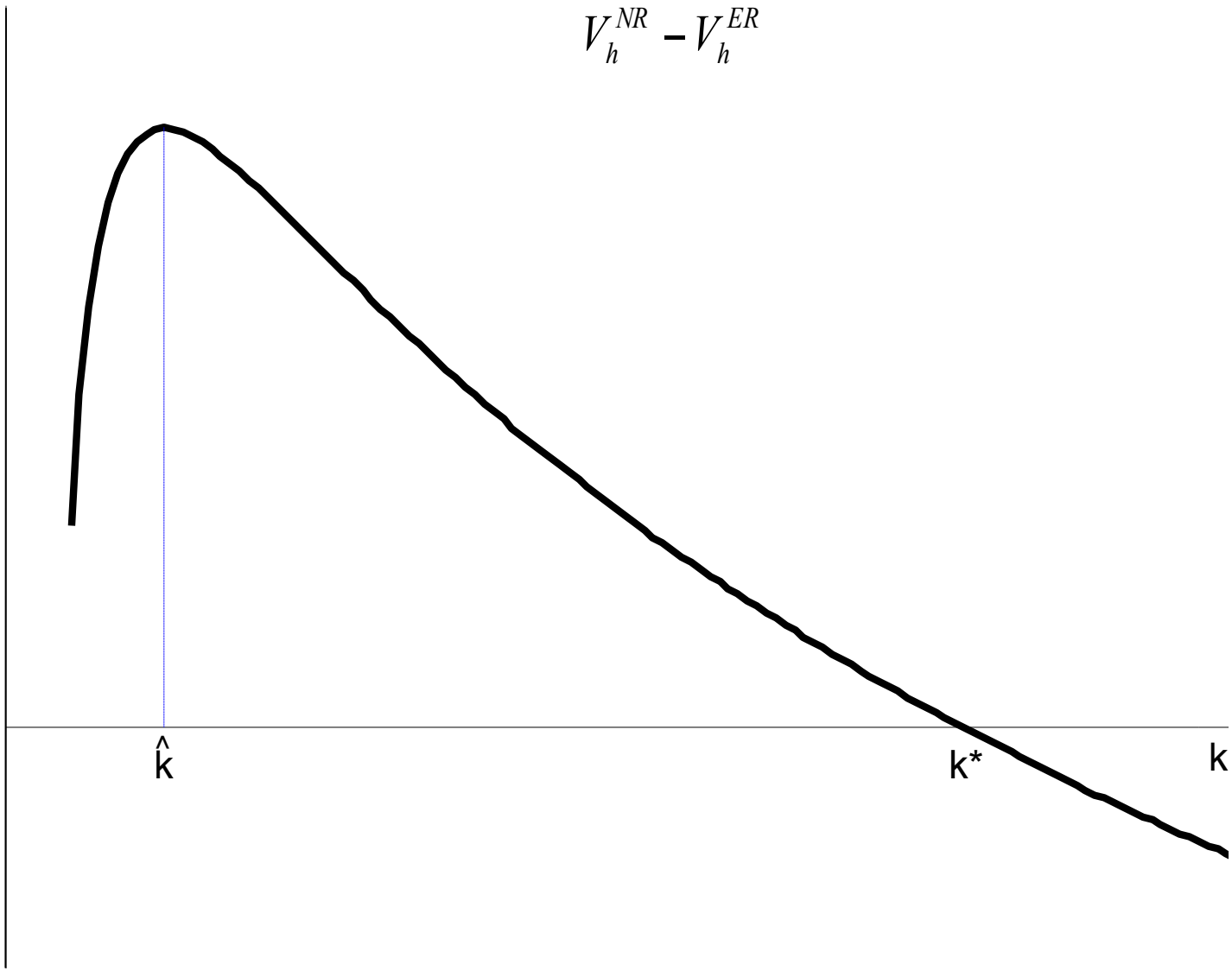
As economy grows, welfare of sons and daughers (men & women) ↑

- Welfare gap between genders increases, however
- Growing welfare gap across children dampens men's welfare gains from growth
- Everything else equal, they would prefer this gap not ↑
  - If they care equally about sons and daughters ⇒ equal welfare best
  - If they favor sons over daughters, still prefer gap not to get "too" large
- How would men fare under a regime that allowed married women to control property? Compare men's welfare under the two regimes.

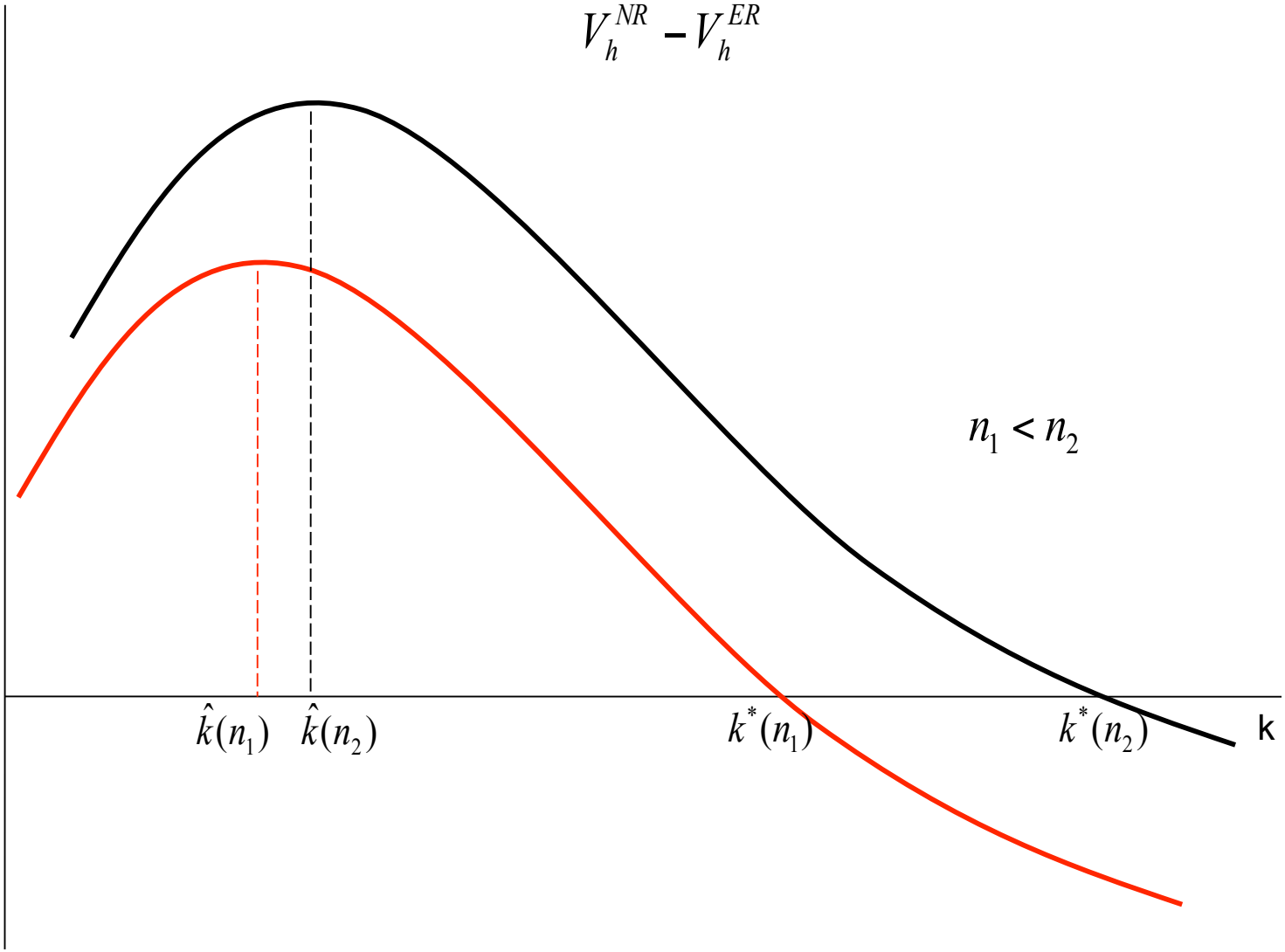
# Growth and Regime Change



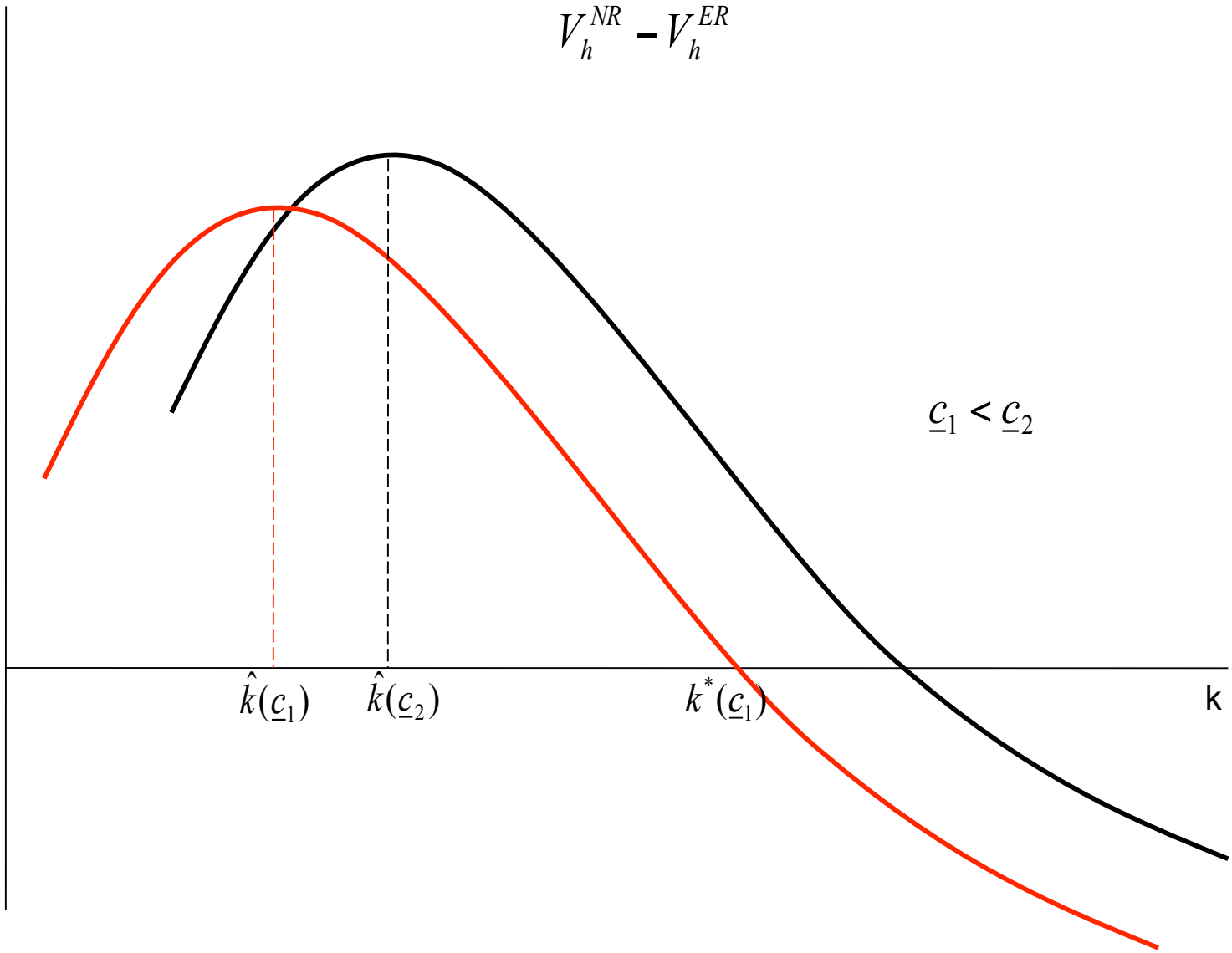
# Growth and Regime Change



# Fertility and Regime Change



# Generosity of Patriarchal System and Regime Change

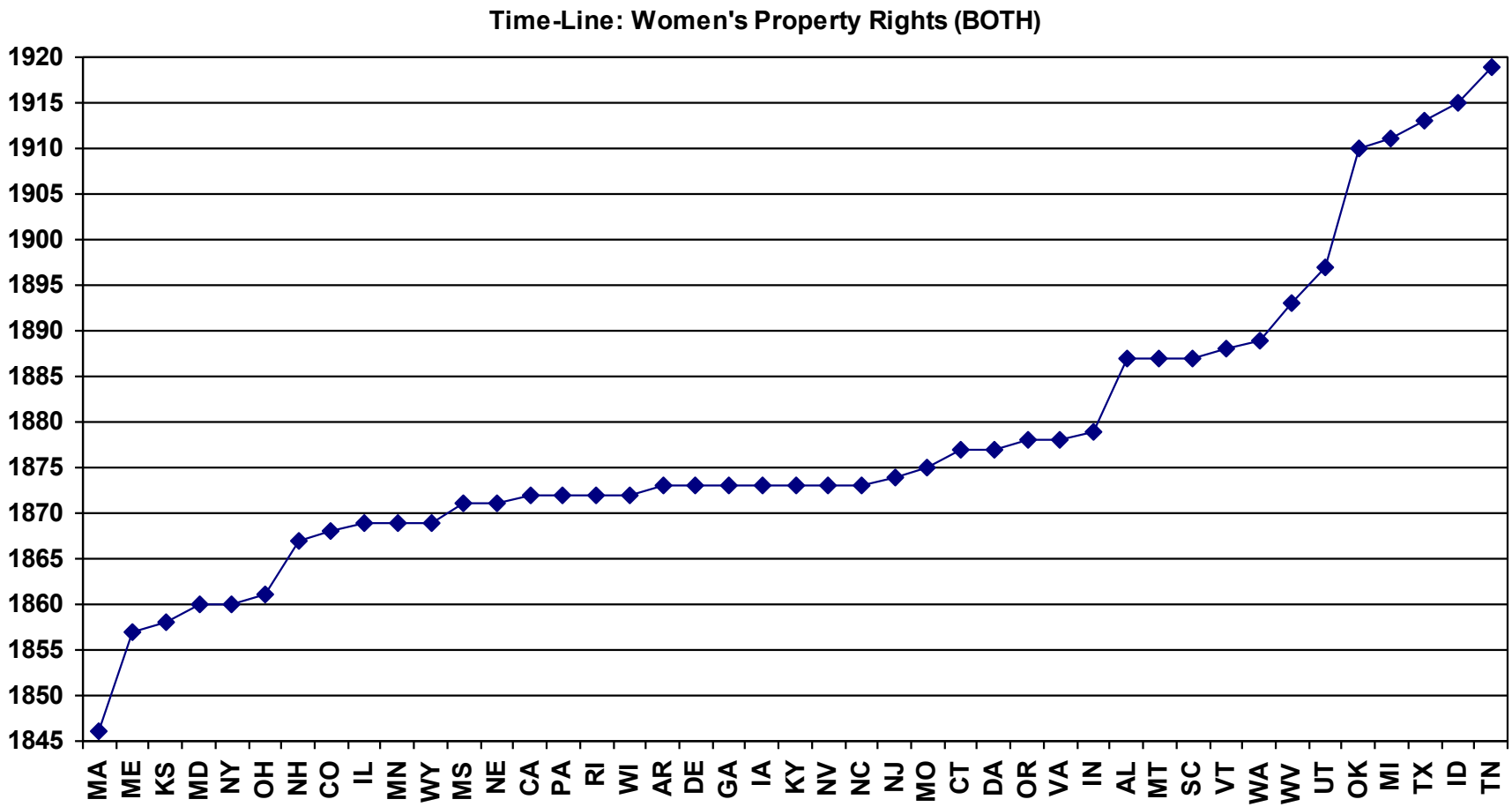


# Empirical Outline

- Historical background and construction of key variables
- Examine relationship between reform and key variables: per capita wealth, survival fertility, and legal system.
- Use infant mortality to proxy for survival-fertility.
- Alternative hypotheses and robustness

# Married Women's Property Rights

- The property rights variable is from Geddes and Lueck (2002).
- Authors 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).
- Considerable time variation in the granting of property rights to women (Alaska and Hawaii excluded).
- First state (BOTH $= 1$): MA 1846; Last: Louisiana 1980.
- By 1920, all states but 4 (Florida, Arizona, New Mexico, and Louisiana) had passed both property acts.
- Analysis restricted to 1850-1920.


Time-Line: Women's Property Rights (BOTH)
1920
1915
1910
1905
1900
1895
1890
1885
1880
1875
1870
1865
1860
1855
1850
1845
MA
ME
KS
MD
NY
OH
NH
CO
IL
MN
WY
MS
NE
CA
PA
RI
WI
AR
DE
GA
IA
KY
NV
NC
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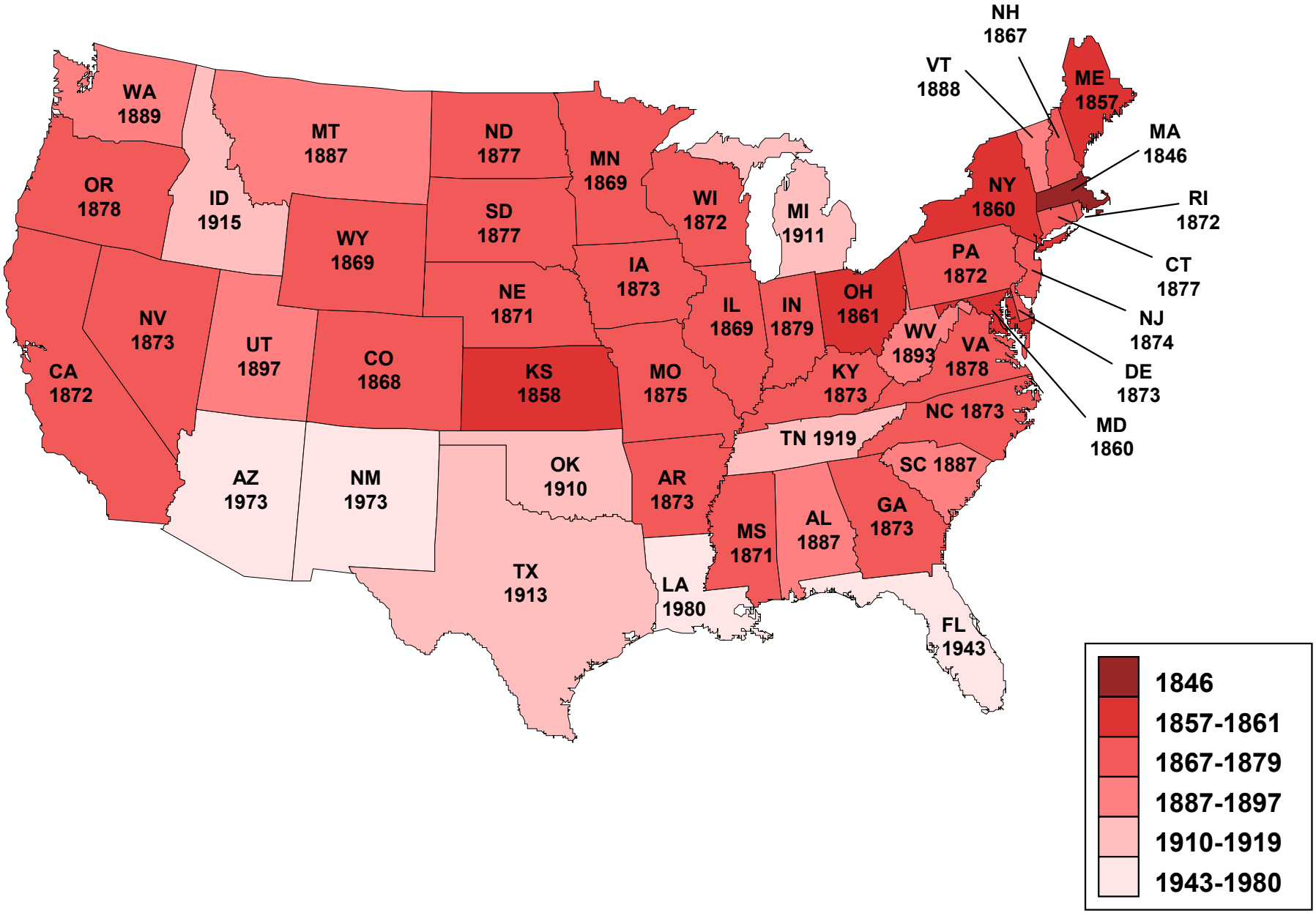
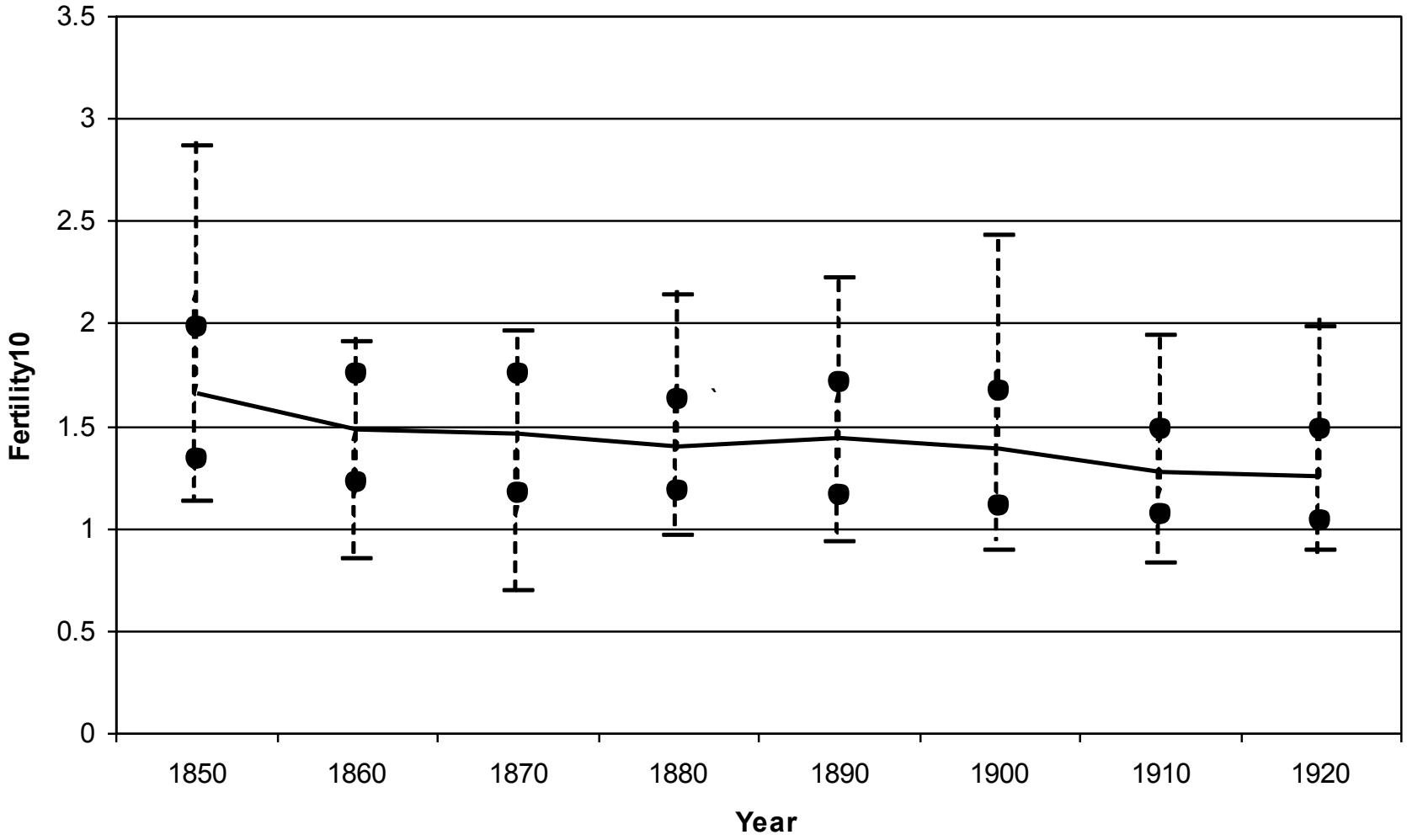

WA 1889
OR 1878
CA 1872
ID 1915
NV 1873
MT 1887
WY 1869
UT 1897
AZ 1973
CO 1868
NM 1973
ND 1877
SD 1877
NE 1871
KS 1858
OK 1910
TX 1913
MN 1869
IA 1873
MO 1875
AR 1873
LA 1980
WI 1872
IL 1869
MS 1871
MI 1911
IN 1879
KY 1873
TN 1919
AL 1887
OH 1861
WV 1893
GA 1873
FL 1943
SC 1887
NC 1873
VA 1878
PA 1872
NY 1860
MD 1860
DE 1873
NJ 1874
CT 1877
RI 1872
MA 1846
VT 1888
NH 1867
ME 1857
1846
1857-1861
1867-1879
1887-1897
1910-1919
1943-1980

# Fertility10

- Mechanism concerns about *surviving* children, not fertility.
- Census did not ask women about how many children they had until 1900.
- 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.

# Fertility10 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).
- Community property states = more generous patriarchal regime
- Only 3 states (ID, NV, WA) changed legal system (from common law to community).

# Benchmark exercise:

Estimate prob. women have **both** property rights in a given state-year.

$$y_{it}^{*} = x_{it}'\beta + d_t + \varepsilon_{it} \quad \text{where } i = 1, ..., n;$$

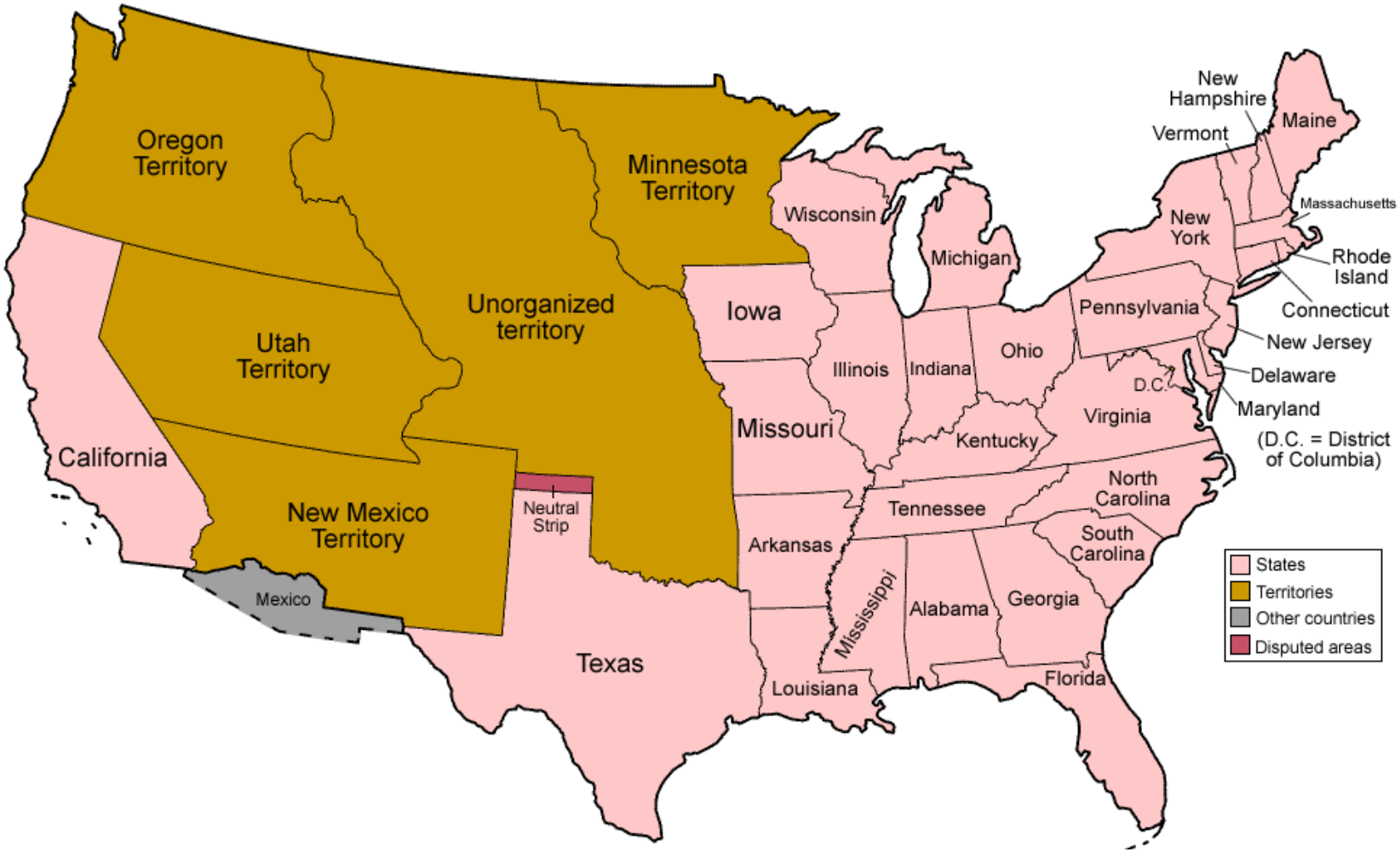
$$y_{it} = \begin{cases} 1 \text{ if } y_{it}^{*} > 0 \\ 0 \text{ if } y_{it}^{*} \leq 0 \end{cases}$$

- $y_{it}$ = observed state law variable "BOTH" in state $i$ at $t$.
- $y_{it}^{*}$ = unobserved legal rights "response"
- $x_{it}$ = column vector of exogenous variables
- $d_t$ = year $t$ dummy, $t = 1850, 1860, ..., 1920$.
- Cluster standard errors at level of state/territory.

| **Dep. Variable:** | **Both** |
|---|---|
| **Method:** | **Probit** |
| **FERTILITY10** | |
| **WEALTHpc** | 0.224** |
| | (3.68) |
| **WEALTHpc$^2$** | |
| **TERRITORY** | -0.297+ |
| | (1.70) |
| **EQUITY** | 0.088 |
| | (0.06) |
| **COMMUNITY** | -0.623*** |
| | (4.24) |
| **CHILD MORT.** | |
| **Year dummies** | yes |
| **State dummies** | no |
| **Region dummies** | no |
| **Obs.** | 356 |

| Dep. Variable: | Both | Both |
|---|---|---|
| Method: | Probit | Probit |
| FERTILITY10 | | -0.979** |
| | | (4.41) |
| WEALTHpc | 0.224** | 0.098 |
| | (3.68) | (1.60) |
| $WEALTHpc^2$ | | |
| TERRITORY | -0.297+ | -0.481** |
| | (1.70) | (4.36) |
| EQUITY | 0.088 | -0.13 |
| | (0.06) | (0.70) |
| COMMUNITY | -0.623*** | -0.644** |
| | (4.24) | (4.76) |
| CHILD MORT. | | |
| Year dummies | yes | yes |
| State dummies | no | no |
| Region dummies | no | no |
| Obs. | 356 | 356 |

# US Territory Configuration, September 9 1850



| Dep. Variable: | Both | Both | Both | Both |
|---|---|---|---|---|
| Method: | Probit | Probit | OLS | OLS |
| FERTILITY10 | | -0.979** | -0.307* | -0.366** |
| | | (4.41) | (2.32) | (3.02) |
| WEALTHpc | 0.224** | 0.098 | 0.022 | 0.009 |
| | (3.68) | (1.60) | (0.32) | (0.29) |
| $WEALTHpc^2$ | | | -0.007 | |
| | | | (0.71) | |
| TERRITORY | -0.297+ | -0.481** | -0.258** | -0.284** |
| | (1.70) | (4.36) | (3.87) | (4.09) |
| EQUITY | 0.088 | -0.13 | | -0.044 |
| | (0.06) | (0.70) | | (0.29) |
| COMMUNITY | -0.623*** | -0.644** | -0.188 | -0.399** |
| | (4.24) | (4.76) | (1.31) | (5.35) |
| CHILD MORT. | | | | |
| Year dummies | yes | yes | yes | yes |
| State dummies | no | no | yes | no |
| Region dummies | no | no | no | yes |
| Obs. | 356 | 356 | 356 | 356 |

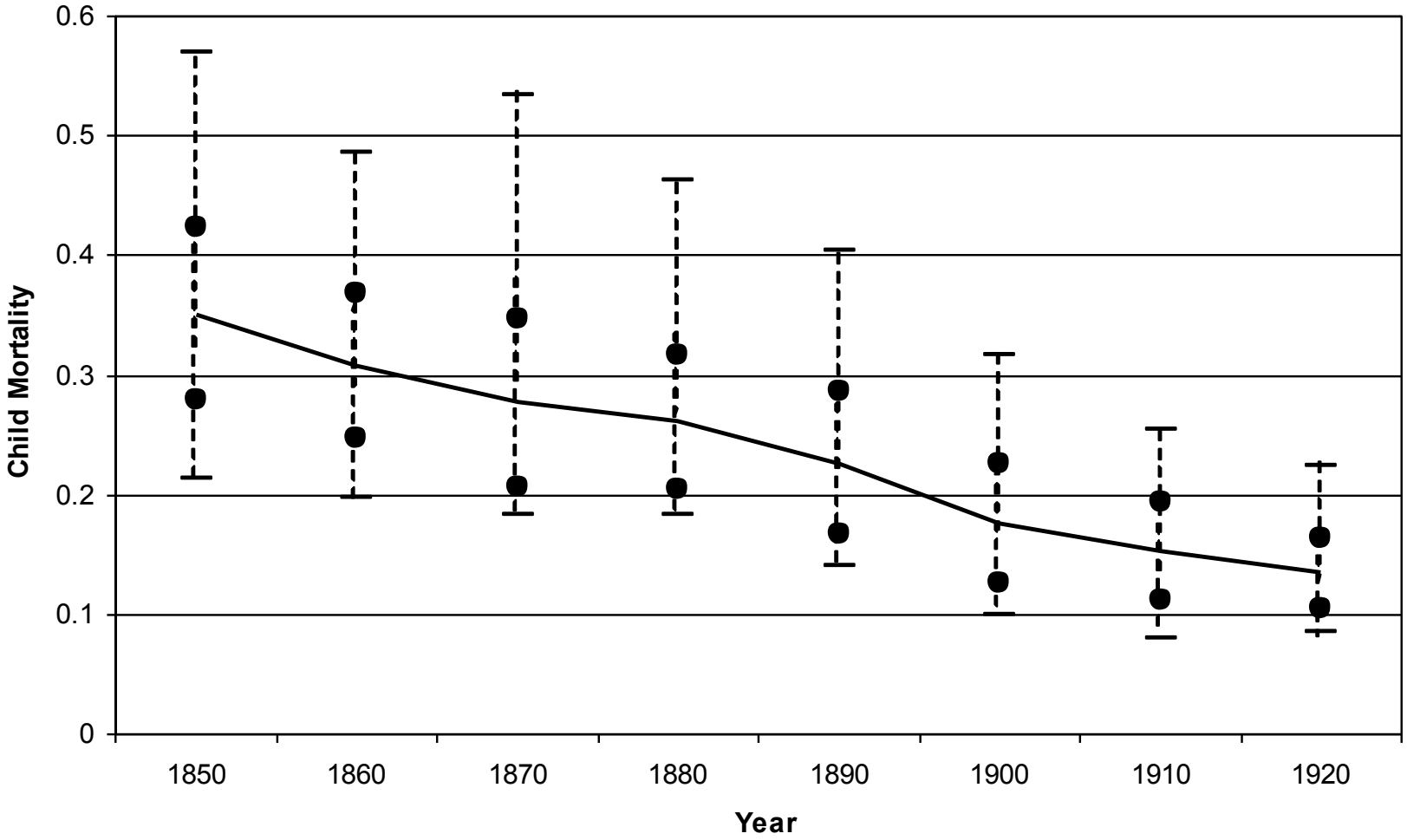
# Using Child Mortality to Proxy for Fertility10

- Fertility is an endogenous variable: potential omitted variable.
- Theory is about surviving children – use child mortality as a proxy for this variable.

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

- Child mortality affects surviving children directly (negatively) and potentially indirectly.
- In any given decade, the correlation between fertility10 and child mortality is negative $\Leftrightarrow$ states with higher child mortality had fewer surviving kids

# Child mortality over time



| Dep. Variable: | Both | Both | Both | Both | Fert10 | Both |
|---|---|---|---|---|---|---|
| Method: | Probit | Probit | OLS | OLS | IV (1st) | IV (2nd) |
| FERTILITY10 | | -0.979** | -0.307* | -0.366** | | -1.737+ |
| | | (4.41) | (2.32) | (3.02) | | (1.78) |
| WEALTHpc | 0.224** | 0.098 | 0.022 | 0.009 | -0.112** | -0.175 |
| | (3.68) | (1.60) | (0.32) | (0.29) | (4.65) | (1.42) |
| $WEALTHpc^2$ | | | -0.007 | | | |
| | | | (0.71) | | | |
| TERRITORY | -0.297+ | -0.481** | -0.258** | -0.284** | -0.153+ | -0.460* |
| | (1.70) | (4.36) | (3.87) | (4.09) | (1.73) | (2.40) |
| EQUITY | 0.088 | -0.13 | | -0.044 | | |
| | (0.06) | (0.70) | | (0.29) | | |
| COMMUNITY | -0.623*** | -0.644** | -0.188 | -0.399** | -0.236+ | -0.530* |
| | (4.24) | (4.76) | (1.31) | (5.35) | (1.95) | (2.19) |
| CHILD MORT. | | | | | -1.109** | |
| | | | | | (4.56) | |
| 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 |

# Endogeneity of child mortality

- Much of the decline in infant mortality came from improvements in overall hygiene, water supply, construction of sewers, and quality and cleanliness of the milk supply
- 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 $\Longrightarrow$ 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.

# Alternative Hypotheses: Schooling

| *Dependent variable = BOTH* | (1) PROBIT | (2) OLS | (3) OLS | (4) OLS | (5) OLS |
|---|---|---|---|---|---|
| **FERTILITY10** | -0.942** | -0.306* | -0.320* | -0.305* | -0.284* |
| | (4.26) | (2.29) | (2.72) | (2.41) | (2.29) |
| **COMPSCHOOL** | 0.138 | 0.061 | | | |
| | (0.88) | (0.71) | | | |
| **COMPSCHOOLYR** | | | -0.007* | | |
| | | | (2.53) | | |
| **FSCHOOL** | | | | -0.001 | 0.009 |
| | | | | (0.29) | (1.14) |
| **MSCHOOL** | | | | | -0.01 |
| | | | | | (1.36) |
| **WEALTHpc** | 0.081 | -0.024 | -0.004 | -0.015 | -0.019 |
| | (1.38) | (0.90) | (0.13) | (0.54) | (0.69) |
| **TERRITORY** | -0.477** | -0.255** | -0.284** | -0.261** | -0.251** |
| | (4.07) | (3.70) | (4.57) | (3.51) | (3.27) |
| **EQUITY** | -0.151 | | -0.088 | | |
| | (0.85) | | (0.59) | | |
| **COMMUNITY** | -0.652** | -0.19 | -0.400** | -0.187 | -0.221 |
| | (5.04) | (1.27) | (6.82) | (1.27) | (1.61) |
| **Year dummies** | yes | yes | yes | yes | yes |
| **State dummies** | no | yes | no | yes | yes |
| **Region dummies** | no | no | yes | no | no |
| **Obs.** | 356 | 356 | 356 | 355 | 355 |

# Alternative Hypotheses and Robustness

| *Dependent variable = BOTH* | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| **FERTILITY10** | -0.272+ | -0.295* | -0.308* | -0.317* | | |
| | (2.01) | (2.36) | (2.28) | (2.36) | | |
| **CITY** | 0.003 | | | | | |
| | (1.39) | | | | | |
| **MALE** | | 0.004 | | | | |
| | | (1.05) | | | | |
| **SUFFRAGE** | | | -0.062 | | | |
| | | | (0.66) | | | |
| **CHILDBORN** | | | | | -0.072* | |
| | | | | | (2.26) | |
| **FERTNEW** | | | | | | -0.153+ |
| | | | | | | (1.83) |
| **WEALTHpc** | -0.017 | -0.019 | -0.016 | -0.039 | -0.004 | -0.008 |
| | (0.66) | (0.67) | (0.58) | (1.33) | (0.13) | (0.29) |
| **TERRITORY** | -0.266** | -0.270** | -0.267** | -0.390** | -0.213** | -0.238** |
| | (3.86) | (3.37) | (4.06) | (4.15) | (2.98) | (3.18) |
| **COMMUNITY** | -0.161 | -0.217 | -0.196 | -0.128 | -0.140 | -0.169 |
| | (1.08) | (1.68) | (1.54) | (0.73) | (1.08) | (1.12) |
| **Timing** | standard | standard | standard | closest date | standard | standard |
| **Obs.** | 356 | 356 | 356 | 356 | 322 | 356 |

# Conclusion

Empirical work supports predictions:

- $\downarrow$ 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. Heterogeneity in household wealth?

# Directions for Future Work

- Slavery
- Divorce
- Gay rights
- Abortion
- Work and physical environment
- Health care, basic income
- Internet access
- Our information
- Our genes