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Yueyan Zhou
University of Auckland
Greta Meggiorini
greta.meggiorini@auckland.ac.nz
University of Auckland

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PROPERTY BEFORE SUFFRAGE: WOMEN'S RIGHTS AND ECONOMIC DEVELOPMENT

YUEYAN ZHOU AND GRETA MEGGIORINI

ABSTRACT. Why did women's property rights generally precede women's suffrage? This paper develops a theory of that sequence. In a political-economy model of long-run growth, men hold political authority and govern the household, but a household forms only with the woman's consent, and her leverage is how long she can hold out. Men concede rights to secure household formation while keeping their authority. Property rights give women ownership, whereas marital power gives husbands control over their wives' earnings. If the first concession becomes necessary before women enter market employment, reducing marital power cannot improve their payoff, whereas a claim to land rents can. Property rights are therefore the first effective concession. As growth raises women's relative productivity, concessions can also extend to marital power, while the value of control declines. Men redistribute within the regime first and share political authority only once it no longer protects any gain. Development thus shapes the order of institutional change, not only its pace. We construct a new chronology of women's rights reforms from the statutes of 25 European countries. Property reform preceded suffrage in every country with a recorded property reform date.

Keywords: gender inequality; institutional change; property rights; suffrage; labor markets.

JEL codes: J16, D72, P16, O11.

Yueyan Zhou: University of Auckland. Email: yueyan.zhou@auckland.ac.nz.
Greta Meggiorini: University of Auckland. Email: greta.meggiorini@auckland.ac.nz. Homepage: sites.google.com/site/gretameggiorini *(Corresponding author).*

1. Introduction

The expansion of women's rights was one of the major institutional transformations that accompanied modern economic development. Yet this transformation did not occur all at once. In many countries, women acquired legally enforceable rights over property decades before enfranchisement. In the European chronology assembled in this paper, the abolition of male preference in land inheritance precedes women's suffrage in every one of the 24 countries with a property date, by a median of almost eight decades. In the United States, daughters inherited on equal terms from statehood, and married women gained control of their earnings before the vote in most states. This sequence raises a basic political–economy question: why did societies in which men retained political authority first concede property rights to women, and why did suffrage follow only later?

Existing theories provide important explanations for why women's rights expand with economic development. In Doepke and Tertilt (2009) and Fernández (2014), development changes men's incentives to support women's economic rights by increasing the importance of daughters' welfare and human-capital investment relative to the benefits men obtain from patriarchal control. Bertocchi (2011) studies the extension of the franchise and shows how industrialization can alter men's incentives to enfranchise women. More broadly, technological change that raises women's relative market productivity has been central to explanations of the long-run evolution of gender inequality (Galor and Weil, 1999; Doepke et al., 2012; Rendall, 2013; Tertilt et al., 2022). Doepke et al. (2012) and Tertilt et al. (2022) document that women's economic rights tended to precede their political rights. We take this ordering as our starting point and ask why, when men still hold political authority, economic rights over property become viable before political rights.

This paper develops a theory in which economic development changes not only the value of women's rights but also the effectiveness of the institutional instruments through which they can be conceded. We follow unified growth theory (Galor and Weil, 1993; Galor, 2011) in modeling development as technological progress that raises women's relative productivity. Men initially hold unilateral authority over household governance and institutions, so women cannot seize rights: any right they obtain must be granted by men. Household formation, however, creates a surplus and requires the consent of both the man and the woman. A woman's leverage is therefore her ability to refuse to form a household, which leaves both single and destroys the surplus for as long as disagreement lasts. Her reservation value depends on who can hold out longer. If she is willing to remain single at least as long as he is willing to remain single to preserve control, her reservation value is her payoff under autonomous governance, and the man either offers autonomy or makes an institutional concession that leaves her equally well off.

The central result rests on an asymmetry between the two concessions men can offer before giving up political authority: a claim to property income and a reduction in the husband's marital power. If concessions first become necessary early in development, when women's relative productivity is low, men assign women no market work, and a reduction in marital power is worthless to a woman. A property claim is different. Land yields rents even when only men work in the market, so a larger property share raises a woman's payoff before she earns anything. The first effective concession is therefore a property right, and men grant it while keeping political authority. As relative productivity rises, women enter market work, a reduction in marital power also raises their payoff, and the two concessions become substitutes. In the numerical illustration, we use a minimal-adjustment rule to trace one path of property and marital-power reforms, while the actual mix can vary across countries.

Suffrage is a separate political transition. Formal political authority is valuable to men since it allows them to select patriarchal household governance. Development raises women's market value, and because women's market work adds most to output when the household is governed autonomously, it erodes the premium men obtain from control. Once the best arrangement men can sustain no longer beats autonomous household governance, political authority protects nothing, and men share it. Because the first property reform occurs while this premium is still positive, political inclusion follows later.

We discipline this mechanism with a new harmonized chronology of first legal codification for 25 European countries, complemented by state-level evidence from the United States. For each country we date four events under common rules: the first statute abolishing male preference in land inheritance, the first statute giving married women control over their own earnings, the first national vote for women on the same terms as men, and the first nationwide equal-pay rule.

As supplementary descriptive evidence, we relate the reforms to the female-to-male human-capital ratio, a proxy for relative productivity. Property reform mostly predates this series, so discrete-time hazard models cover the later stages. They place limits on marital power at the lowest productivity levels, suffrage at higher levels, and equal pay at the highest.

The paper contributes to the literature on women's rights and development in several ways. Most closely, Doepke and Tertilt (2009) and Fernández (2014) explain why men who initially benefit from patriarchy may come to support economic rights for women. We complement their analysis by focusing on the stage at which men still retain political authority and asking why the first effective concession takes the form of property rights rather than political inclusion. Our channel operates alongside paternal motives: development changes the income base on which different concessions operate, so that at low female market productivity property can transfer resources when a reduction in marital power cannot.

The paper also builds on theories of political transition in which those who hold power can redistribute within the existing regime or give up authority over it (Acemoglu and Robinson, 2001; Acemoglu, 2005). In our model, men first concede within the regime, through property rights and marital power, and give up control over the regime itself only with suffrage. Women's leverage here takes a different form. Women do not constitute a disenfranchised majority capable of imposing regime change through revolution. Their leverage derives from the withdrawal of consent to a surplus-producing household relationship. This produces a form of constrained institutional change in which incumbents concede along the least costly effective margin before relinquishing authority itself. Finally, the mechanism complements theories in which structural transformation and technological change improve women's relative economic position (Galor and Weil, 1999; Rendall, 2013; Agte et al., 2024; Bandyopadhyay and Zhou, 2024). Here rising relative female productivity also changes which legal institutions can sustain the prevailing distribution of power.

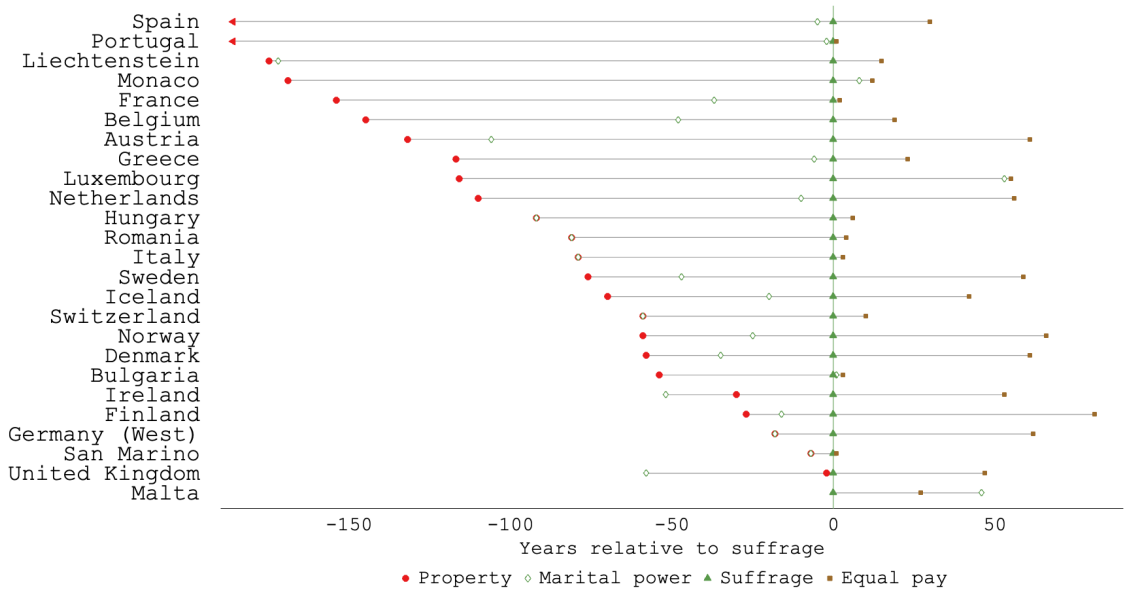
The broader implication is that development can generate an endogenous ordering of institutional reform even when several reforms ultimately move in the same direction. Which right is conceded first depends not only on preferences for reform, but on whether that right has economic value at the prevailing stage of development. This provides an economic rationale for a historical sequence that otherwise appears as a collection of separate legal reforms.

The remainder of the paper proceeds as follows. Section 2 documents the chronology. Section 3 defines the economic and institutional environment. Section 4 derives the holdout problem and the woman's participation constraint. Section 5 characterizes concessions, the control premium, and the political boundary. Section 6 characterizes the institutional path from the first concession to suffrage and presents the numerical illustration. Section 7 reports the descriptive evidence, and Section 8 concludes.

2. Empirical motivation: the sequence of first codification

This section documents the historical ordering that motivates the analysis. We distinguish three categories of women's rights and date each by its first codification. Property rights concern ownership and are dated by the first statute abolishing male preference in land inheritance. Political rights concern control. They have two margins: marital power, the authority that marriage confers on a husband over his wife's resources, and suffrage, dated by women's enfranchisement in national elections. Labor rights are dated by the first nationwide equal-pay rule. Section 3.2 defines property and political rights in the model, together with the labor-market outcome they shape. Figure 1 reports these dates for the European sample. We construct these dates from primary legal sources, including statutes

FIGURE 1. First codification of women's rights in Europe



Note: Dates are measured relative to the year of suffrage in each country. Red circles mark property rights, open green diamonds marital power, green triangles suffrage, and brown squares equal pay. Arrows mark Spain and Portugal, where equal inheritance among sons and daughters long predates the period shown, by 1348 under the *Siete Partidas* and by 1521 under the Portuguese *Ordenações Manuelinas*. No reliable property date is available for Malta.

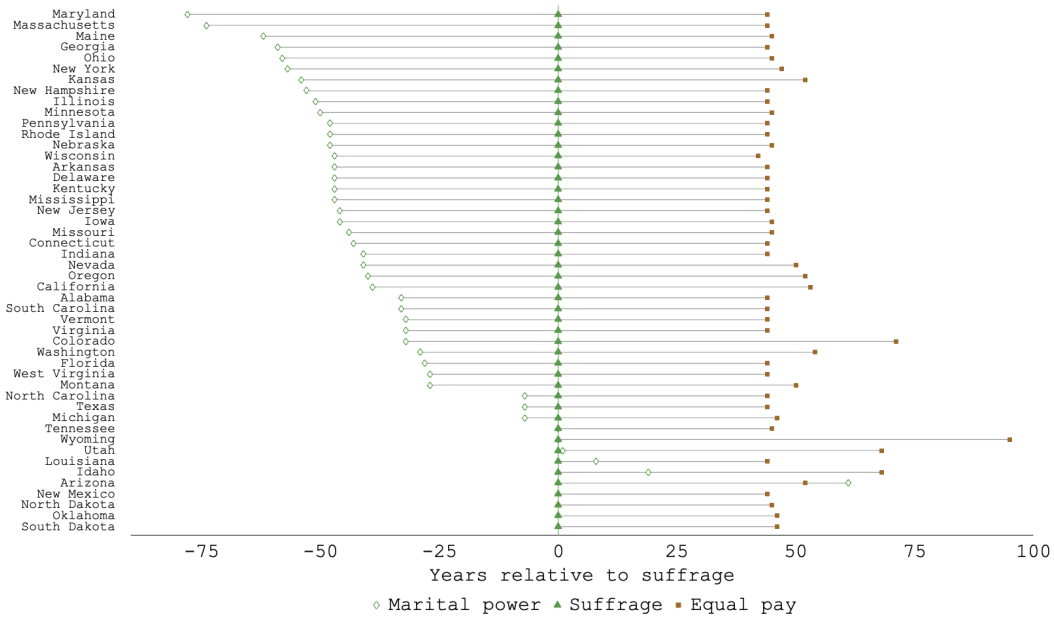
and civil codes, supplemented by legal histories, and Appendix B.1 documents the coding definitions, underlying dates, and sources.[1]

The same broad ordering appears in the United States, where most of these rights were first legislated by individual states. Because most states had abolished primogeniture by the early nineteenth century, or never adopted it, daughters inherited on equal terms with sons from statehood, and the state chronology begins with marital power. We date it by the earnings acts in Geddes and Tennyson (2013). Figure 2 reports the state chronology, using federal enactment dates where no earlier state suffrage or equal-pay law is recorded. Appendix B.1 provides the underlying dates and sources.

Two features of the chronology motivate the theory. First, the order is common. In most European countries and U.S. states, women obtained property rights first, political rights next, and labor rights last. Property law was reformed before suffrage in every European country with a recorded property date, by a median of almost eight decades, and in the United States daughters inherited on equal terms from statehood. Women thus gained ownership before control, and control itself came in two steps. Marital power was usually curtailed no

[1]The European coding file, listing the legal instrument, provision, and sources for each country and reform, is available at https://docs.google.com/spreadsheets/d/1fTQazHd8nkBKIf5trQWG77MccdGzCCO7.

FIGURE 2. First codification of women's rights in U.S. states



Note: Markers as in Figure 1, dated by the first state- or territory-level codification and measured relative to the year of suffrage. The figure includes the 48 contiguous states. No property date is shown because daughters inherited on equal terms with sons from statehood.

earlier than property rights and before the vote (22 of 24 and 21 of 25 European countries).[2] Equal pay came last almost everywhere (24 of 25 European countries and 47 of 48 U.S. states). This regularity holds across common-law and civil-law systems, monarchies and republics, and federal and unitary states, which points to a common economic force rather than country-specific politics. Second, the timing is not common: the stages are separated by lags of several decades that vary widely across countries. A common sequence with country-specific timing is the pattern unified growth theory associates with a single development process through which economies pass at different speeds (Galor, 2011). We therefore model property rights, marital power, and suffrage as stages of a single development process, with women's relative earnings as the accompanying labor-market outcome.

3. Environment

3.1. **Household formation and governance.** The economy is populated by successive generations, indexed by $g = 0, 1, \ldots$, each consisting of equal measures L of adult men, m, and women, f. Within each generation, individuals live for $\kappa + 1$ subperiods, indexed by $j = 0, \ldots, \kappa$, and discount within-generation payoffs by $\beta \in (0, 1]$. There are no intergenerational

[2]The two exceptions to the first comparison, Britain and Ireland, follow the same order once leaseholds are counted. Leasehold land passed as personal property and was divided equally among sons and daughters from 1671 in England and 1695 in Ireland, two centuries before the Married Women's Property Act of 1870.

transfers of private assets, while formal institutions are inherited from one generation to the next, so the sequence of generations traces out the stages of development.

A representative man and woman either form a household, denoted by F, or remain single, denoted by S. Household formation requires both agents' consent. Conditional on formation, regime governance is either patriarchal, P, or autonomous, N. Under P, the man chooses both spouses' time allocations. Under N, each spouse chooses his or her own allocation, taking the other's choice and inherited formal institutions as given. Thus N describes labor-choice autonomy within a formed household. Each agent can refuse a proposed household arrangement, and a prolonged refusal would leave both single. Section 4 derives the woman's reservation value from her option to refuse.

3.2. **Institutional and economic objects.** We distinguish two dimensions of women's rights, property rights and political rights, and one labor-market outcome.

Property rights. Property rights concern ownership. The variable $\gamma \in [0, 1/2]$ is women's share of land and hence of land rents, a claim they hold whether or not they marry, and men hold the residual share $1 - \gamma$. Thus $\gamma = 0$ represents women's exclusion from property, any $\gamma > 0$ partial recognition, and $\gamma = 1/2$ symmetric claims under equal population measures. Its empirical counterpart in Section 2 is the abolition of male preference in land inheritance.

Political rights concern control rather than ownership. They have two margins: control within the household and control over the regime that governs it.

Intra-household political rights: marital power. Marriage gives the husband control over his wife's resources. We index this control by $\rho \in [0, 1]$, the husband's marital power, with the wife retaining $1 - \rho$. Property rights determine what a woman owns, and marital power determines who controls it once she marries. A wife could thus inherit land while her husband managed it and collected its rents. Like property rights, marital power is a formal institution, as in Doepke and Tertilt (2009), but it exists only within a formed household. Its empirical counterpart in Section 2 is the statutory limit on this control.

Regime-level political rights: suffrage. Suffrage transfers authority over household governance. Before the political transition, men hold authority. Afterward, unilateral male authority ends and N is absorbing. Suffrage is thus the democratization margin of Acemoglu and Robinson (2001): authority itself, not only the division of resources, changes hands. Section 5.3 defines the transition at the first state in which the male control premium is no longer positive. A payoff-based index $\phi(s) \in (0, 1]$ tracks this process, with $\phi = 1$ at the transition.

Labor-market outcomes. Women's labor-market position is an equilibrium outcome rather than an institution men choose. It is summarized by the female-to-male earnings ratio derived later in Section 3.4.

Formal property and marital power are inherited. At the beginning of a generation,

$$s = (\gamma_{-1}, \rho_{-1}, A).$$

Suffrage is determined endogenously within the generation and therefore is not part of the inherited state. As rights are extended to women, current institutions (γ, ρ) can move away from their inherited values. After the transition to N, the institutional state is absorbing. Subsequent democratic lawmaking lies outside the mechanism studied here.

3.3. **Time allocation, home production, and preferences.** In each subperiod j of life, each agent $i \in \{m, f\}$ is endowed with one unit of time. Market time is σ_i, nonmarket time is t_i, and

$$\sigma_i + t_i = 1, \qquad t_i \geq \underline{t}_i, \qquad \sigma_i \in [0, \bar{\sigma}_i], \qquad \bar{\sigma}_i \equiv 1 - \underline{t}_i,$$

where $\underline{t}_i \in (0, 1)$ denotes agent i's minimum nonmarket-time requirement, reflecting basic domestic and reproductive responsibilities. We allow $\underline{t}_f \geq \underline{t}_m$, capturing the historically greater child-related burden borne by women.

In a formed household, nonmarket time is transformed into effort, $e_i(\cdot)$, which produces a household public good such as children,

$$h = e_f(t_f) + e_m(t_m).$$

Assumption 1 (Home production). *For each i, e_i is twice continuously differentiable, strictly increasing, and strictly concave on $[\underline{t}_i, 1]$.*

Preferences in a formed household are

$$U_i^F = c_i + h - (1 - \lambda_i)e_i(t_i) = c_i + e_{-i}(t_{-i}) + \lambda_i e_i(t_i), \qquad \lambda_i \in [0, 1), \tag{1}$$

where $-i$ denotes the spouse. The parameter λ_i is the net private value that an agent internalizes from his or her own contribution after effort costs. The benchmark $\lambda_i = 0$ delivers complete free riding. For $\lambda_i > 0$, autonomous home time responds endogenously to the return to market work and the net private value of own home production.

In singlehood no household public good exists, so

$$U_i^S = c_i.$$

Single agents therefore choose maximum feasible market time, $\sigma_i^S = \bar{\sigma}_i$.

3.4. **Market production, wages, and earnings.** The aggregate output is

$$Y = (A\sigma_f L + \sigma_m L)^{\alpha} X^{1-\alpha}, \qquad \alpha \in (0, 1), \tag{2}$$

where X is land and $A \in (0, 1]$ is women's productivity relative to men's, normalized to one. As in Galor and Weil (1993), technological progress raises the return to brain relative to brawn and thereby increases A. Defining effective labor as $H = L(A\sigma_f + \sigma_m)$, competitive

factor pricing implies

$$w = \frac{\partial Y}{\partial H} = \alpha \frac{Y}{H}, \qquad R = (1-\alpha)Y,$$

where w is the wage per efficiency unit and R denotes aggregate land rents. A man's wage rate per unit of market time is w and a woman's is Aw. Per-capita labor earnings are

$$\omega_m = w\sigma_m, \qquad \omega_f = wA\sigma_f, \tag{3}$$

so that the relative earnings ratio satisfies

$$\frac{\omega_f}{\omega_m} = A\frac{\sigma_f}{\sigma_m}. \tag{4}$$

The relative wage rate is A, whereas relative earnings, which summarize *labor-market outcomes*, also depend on relative market time, σ_f/σ_m.

3.5. **Income and feasibility.** Within a formed household, the representative spouses' incomes are

$$\begin{aligned} y_m^F &= \omega_m + (1-\gamma)\frac{R}{L} + \rho\omega_f, \\ y_f^F &= (1-\rho)\omega_f + \gamma\frac{R}{L}, \end{aligned} \tag{5}$$

which sum to output per household pair, Y/L. For simplicity, marital power applies only to the wife's earnings, while property income is assigned by γ.[3] However, in singlehood, marital power is absent:

$$y_m^S = \omega_m + (1-\gamma_{-1})\frac{R}{L}, \qquad y_f^S = \omega_f + \gamma_{-1}\frac{R}{L}.$$

In each subperiod, each agent's consumption is limited by his or her income, $c_i \le y_i$. Since preferences are increasing in private consumption, $c_i = y_i$.

The next section (Section 4) derives the conditions under which men must grant rights to secure household formation. Once granted, these rights are irreversible: current institutions cannot erode women's inherited property claims or increase the husband's marital power. The feasible set under a proposed patriarchal arrangement is therefore

$$\sigma_i \in [0, \bar{\sigma}_i], \qquad \gamma \in [\gamma_{-1}, 1/2], \qquad \rho \in [0, \rho_{-1}].$$

4. Refusal, Holdout, and Regime Sustainability

This section derives the conditions under which men grant rights to secure household formation. By comparing each spouse's holdout capacity, we pin down the woman's reservation value and her resulting participation constraint.

[3] Appendix A.11 shows that extending marital power to the wife's total income leaves the main result unchanged: property rights still precede suffrage. We adopt the current formulation throughout the main text for expositional simplicity.

4.1. **Autonomous Governance.** Under regime N, spouses choose their time allocations noncooperatively. Given inherited institutions, agent i solves

$$\max_{\sigma_i \in [0,\bar{\sigma}_i]} \left\{ y_i^F(\sigma_i, \sigma_{-i}; \gamma_{-1}, \rho_{-1}) + e_{-i}(1-\sigma_{-i}) + \lambda_i e_i (1-\sigma_i) \right\},$$

taking σ_{-i} as given. Each spouse's objective is concave in own market time. In the free-riding benchmark $\lambda_i = 0$ of Section 3.3, own home time carries no private value, so each spouse supplies maximal market time. We work near this benchmark, where the same holds (Appendix A.7). The autonomous equilibrium is then unique, $\boldsymbol{\sigma}^N(s) = (\bar{\sigma}_m, \bar{\sigma}_f)$, and the spouses' incomes are

$$y_m^N = \bar{\omega}_m + (1-\gamma_{-1})\frac{\bar{R}}{L} + \rho_{-1}\bar{\omega}_f, \qquad y_f^N = (1-\rho_{-1})\bar{\omega}_f + \gamma_{-1}\frac{\bar{R}}{L}, \tag{6}$$

where a bar denotes earnings and rents at $(\bar{\sigma}_m, \bar{\sigma}_f)$.

The resulting per-subperiod values, that is, the utilities in Equation (1) evaluated at $c_i = y_i^F$, are

$$\begin{aligned} V_m^N(s) &= y_m^F\big(\boldsymbol{\sigma}^N; \gamma_{-1}, \rho_{-1}\big) + e_f(1-\sigma_f^N) + \lambda_m e_m (1-\sigma_m^N), \\ V_f^N(s) &= y_f^F\big(\boldsymbol{\sigma}^N; \gamma_{-1}, \rho_{-1}\big) + e_m(1-\sigma_m^N) + \lambda_f e_f (1-\sigma_f^N). \end{aligned} \tag{7}$$

4.2. **Uncompensated Patriarchy.** Under regime P, inherited institutions remain unchanged, and the man unilaterally chooses both time allocations:

$$\max_{\sigma_m \in [0,\bar{\sigma}_m],\, \sigma_f \in [0,\bar{\sigma}_f]} \left\{ y_m^F(\sigma_m, \sigma_f; \gamma_{-1}, \rho_{-1}) + e_f(1-\sigma_f) + \lambda_m e_m (1-\sigma_m) \right\}.$$

Let $\boldsymbol{\sigma}^P(s)$ and $V_i^P(s)$ denote the resulting allocation and payoff values, respectively. Because the man can always replicate the autonomous allocation, his choice set under P strictly encompasses that under N.

Lemma 1 (Regime Preferences). *For any given inherited institutions,*

$$V_m^P(s) \geq V_m^N(s),$$

with strict inequality whenever unilateral control allows the man to strictly improve upon the autonomous equilibrium. Throughout, parameters are restricted to the region where this improvement comes at the woman's expense, so that

$$V_f^P(s) \leq V_f^N(s).$$

The male ranking follows directly from revealed preference. The female ranking delineates the conflict region in which unilateral control generates pure distributional losses for the woman (see Appendix A.1 for sufficient conditions).

4.3. **Singlehood.** When preferences over regimes diverge, a prolonged refusal by either agent leaves both single. Single agents set $\sigma_i^S = \bar{\sigma}_i$, keep their own earnings, and receive

$$\begin{aligned} V_m^S(s) &= \omega_m(\bar{\sigma}_m, \bar{\sigma}_f) + (1 - \gamma_{-1})\frac{R(\bar{\sigma}_m, \bar{\sigma}_f)}{L}, \\ V_f^S(s) &= \omega_f(\bar{\sigma}_m, \bar{\sigma}_f) + \gamma_{-1}\frac{R(\bar{\sigma}_m, \bar{\sigma}_f)}{L}. \end{aligned} \tag{8}$$

We focus on states featuring positive joint surplus from household formation alongside governance disagreement:

$$V_m^P \geq V_m^N > V_m^S, \qquad V_f^N \geq V_f^P > V_f^S. \tag{9}$$

4.4. **Timing.** Time is divided into discrete generations, each comprising subperiods $j = 0, \ldots, \kappa$. Within each generation, events proceed as follows.

(1) The inherited state $s = (\gamma_{-1}, \rho_{-1}, A)$ is observed. If men no longer gain from unilateral authority, they share it, and N is absorbing (Section 5.3).
(2) Otherwise, at $j = 0$, the man proposes a governance regime and, under patriarchy, current institutions (γ, ρ).
(3) The woman accepts or refuses. A refusal is settled at once by Assumption 2, and the household forms under the prevailing regime.
(4) Once formed, the household keeps its regime for the rest of the generation. Time allocations are chosen under that regime, and incomes and utilities are realized in each subperiod.
(5) Current institutions, together with the next generation's relative productivity, form its inherited state, and the sequence repeats from step 1.

4.5. **Holdout Capacity and Regime Selection.** Once formed, a household's governance structure is locked for the remainder of the current generation. If either side held out, both would remain single under regime S, so delay is costly to each.

To quantify each agent's capacity to hold out, let $\mathscr{W}_i(T; F \mid s)$ denote the date-zero payoff from T subperiods of singlehood followed by regime $F \in \{P, N\}$:

$$\mathscr{W}_i(T; F \mid s) = \sum_{j=0}^{T-1} \beta^j V_i^S(s) + \sum_{j=T}^{\kappa} \beta^j V_i^F(s), \qquad T \in \{0, \ldots, \kappa + 1\}, \tag{10}$$

where $\beta \in (0, 1]$ is the discount factor, and $B_{\kappa+1} \equiv \sum_{j=0}^{\kappa} \beta^j$.

The man's control-defense horizon, $\tau_m^N(s)$, is the maximum delay he will tolerate to secure P over immediate N:

$$\tau_m^N(s) \equiv \max\left\{T \in \{0, \ldots, \kappa + 1\} : \mathscr{W}_m(T; P \mid s) \geq B_{\kappa+1} V_m^N(s)\right\}. \tag{11}$$

Similarly, the woman's refusal horizon, $\tau_f(s)$, is the maximum delay she will endure to secure N over immediate P:

$$\tau_f(s) \equiv \max\left\{T \in \{0,\dots,\kappa+1\} : \mathscr{W}_f(T; N \mid s) \geq B_{\kappa+1} V_f^P(s)\right\}. \tag{12}$$

Under Equation (9), delay strictly reduces payoffs, rendering both horizons well-defined (see Appendix A.2).

Assumption 2 (Holdout rule). *A refusal is settled before any singlehood is realized. If the woman can hold out at least as long as the man, she secures N. Otherwise, the man secures P:*

$$F(s) = \begin{cases} P, & \text{if } \tau_f(s) < \tau_m^N(s), \\ N, & \text{if } \tau_f(s) \geq \tau_m^N(s). \end{cases} \tag{13}$$

Our subsequent analysis focuses on the states satisfying

$$\tau_f(s) \geq \tau_m^N(s), \tag{14}$$

where the woman's relative holdout capacity allows her to reject P, setting her reservation value to

$$\widehat{V}_f(s) \equiv V_f^N(s). \tag{15}$$

A proposed arrangement is acceptable to her if and only if it provides at least $\widehat{V}_f(s)$, which constitutes her participation constraint.

When $V_f^P(s) < \widehat{V}_f(s)$, uncompensated patriarchy P fails the woman's participation requirement. However, because the man derives a positive surplus from control (Lemma 1), he prefers preserving decision authority over fully surrendering to regime N. Rather than forfeiting this surplus, he can transfer formal rights to satisfy her reservation value while retaining household command. This compromise marks the onset of formal female empowerment, establishing an arrangement we term *Patriarchy with Concessions* (PC). A tuple $(\boldsymbol{\sigma}, \gamma, \rho)$ under PC is feasible if and only if it satisfies both the woman's participation constraint and the man's profitability condition:

$$V_f^{PC}(s; \boldsymbol{\sigma}, \gamma, \rho) \geq \widehat{V}_f(s), \tag{16}$$

$$V_m^{PC}(s; \boldsymbol{\sigma}, \gamma, \rho) \geq V_m^N(s). \tag{17}$$

We defer the explicit characterization of optimal labor allocations and rights under PC to Section 5.

Proposition 2 (Institutional Concessions and Regime Determination)**.** *If Equation (14) holds. Assume that transfers above $\widehat{V}_f(s)$ can be continuously adjusted down to $\widehat{V}_f(s)$ within institutional bounds to increase the man's payoff, and that female indifference is resolved in favor of acceptance. Then:*

(1) The man proposes PC immediately at $j = 0$ if a feasible PC arrangement yields a strict payoff gain over N; otherwise, he offers N.

(2) Whenever PC is chosen, the woman's participation constraint binds:

$$V_f^{PC}(s; \boldsymbol{\sigma}, \gamma, \rho) = \widehat{V}_f(s). \tag{18}$$

If Equation (14) fails ($\tau_f(s) < \tau_m^N(s)$), uncompensated patriarchy P satisfies the woman's participation constraint and is optimally chosen by the man.

5. Institutional equilibrium

Fix an inherited state $s = (\gamma_{-1}, \rho_{-1}, A)$ at which Equation (14) holds, so that the woman's reservation value is $\widehat{V}_f(s) = V_f^N(s)$. This section characterizes the concession problem, how it is implemented through property rights and marital power, and the political boundary.

5.1. The candidate concession problem.

Under a candidate PC, the man chooses time allocations and current institutions:

$$\begin{aligned} \max_{\sigma_m, \sigma_f, \gamma, \rho} \quad & V_m^{PC} = \omega_m + (1-\gamma)\frac{R}{L} + \rho\omega_f + e_f(1-\sigma_f) + \lambda_m e_m(1-\sigma_m) \\ \text{s.t.} \quad & (1-\rho)\omega_f + \gamma\frac{R}{L} + e_m(1-\sigma_m) + \lambda_f e_f(1-\sigma_f) = \widehat{V}_f(s), \\ & \sigma_i \in [0, \bar{\sigma}_i], \qquad \gamma \in [\gamma_{-1}, 1/2], \qquad \rho \in [0, \rho_{-1}]. \end{aligned} \tag{19}$$

All earnings and rents are evaluated at (σ_m, σ_f). By Proposition 2, the woman's participation constraint binds under an implemented PC. The remaining restrictions impose time feasibility, institutional bounds, and irreversibility.

Let $\Sigma(s) \equiv [0, \bar{\sigma}_m] \times [0, \bar{\sigma}_f]$ denote the technically feasible time allocations. For any $\boldsymbol{\sigma} \in \Sigma(s)$, binding participation requires

$$(1-\rho)\omega_f + \gamma\frac{R}{L} + e_m(1-\sigma_m) + \lambda_f e_f(1-\sigma_f) = \widehat{V}_f(s). \tag{20}$$

The market and property income the woman must receive is therefore

$$Q(\boldsymbol{\sigma}; s) \equiv \widehat{V}_f(s) - e_m(1-\sigma_m) - \lambda_f e_f(1-\sigma_f), \tag{21}$$

and implementation requires $\gamma R/L + (1-\rho)\omega_f = Q(\boldsymbol{\sigma}; s)$. With nonnegative rents and market earnings, the lowest and highest amounts attainable within the inherited institutional bounds are

$$\underline{Z}(\sigma; s) = \gamma_{-1}\frac{R(\sigma)}{L} + (1-\rho_{-1})\omega_f(\sigma), \qquad \overline{Z}(\sigma; s) = \frac{1}{2}\frac{R(\sigma)}{L} + \omega_f(\sigma). \tag{22}$$

Proposition 3 (Institutional feasibility)**.** *For a given allocation $\boldsymbol{\sigma} \in \Sigma(s)$, binding participation can be implemented through inherited or more favorable institutions if and only if*

$$Q(\boldsymbol{\sigma}; s) \in [\underline{Z}(\boldsymbol{\sigma}; s), \overline{Z}(\boldsymbol{\sigma}; s)].$$

A positive concession is required if implementation is feasible, $Q(\boldsymbol{\sigma}; s) > \underline{Z}(\boldsymbol{\sigma}; s)$. *If* $Q(\boldsymbol{\sigma}; s) > \overline{Z}(\boldsymbol{\sigma}; s)$, *no admissible pair* (γ, ρ) *can sustain patriarchal governance.*

Let $\mathscr{F}^{PC}(s)$ denote the feasible set of Equation (19). Proposition 3 characterizes its projection onto time allocations:

$$\mathcal{S}^{PC}(s) = \left\{\boldsymbol{\sigma} \in \Sigma(s) : Q(\boldsymbol{\sigma}; s) \in [\underline{Z}(\boldsymbol{\sigma}; s), \overline{Z}(\boldsymbol{\sigma}; s)]\right\}. \tag{23}$$

Thus, the candidate problem is feasible if and only if $\mathcal{S}^{PC}(s) \neq \varnothing$.

Substituting the woman's binding constraint into the man's objective reduces the allocation problem to maximizing household value net of her reservation value

$$\max_{\boldsymbol{\sigma} \in \mathcal{S}^{PC}(s)} \left\{ \frac{Y(\sigma_m, \sigma_f)}{L} + (1+\lambda_f) e_f (1-\sigma_f) + (1+\lambda_m) e_m (1-\sigma_m) - \widehat{V}_f(s) \right\}. \tag{24}$$

The rights instruments redistribute income within the pair and therefore drop out of the reduced objective. The man is the residual claimant to household surplus once the woman's value is fixed.

Assumption 3 (Unique constrained allocation). *The projected set* $\mathcal{S}^{PC}(s)$ *is convex, and the objective in Equation* (24) *is strictly concave on that set.*

Proposition 4 (Existence and allocation uniqueness)**.** *With continuous primitives, if* $\mathcal{S}^{PC}(s) \neq \varnothing$, *the concession problem, Equation* (19), *has a solution. Under Assumption 3, every solution implements the same time allocation and the same payoffs. The institutional pair need not be unique.*

When the solution is interior to $\mathcal{S}^{PC}(s)$, its choices satisfy

$$\frac{\partial (Y/L)}{\partial \sigma_i} = (1+\lambda_i) e_i' (1-\sigma_i), \qquad i \in \{m, f\}, \tag{25}$$

so the marginal product of market time equals the marginal value of nonmarket time. We impose the following condition on the male market time.

Assumption 4 (Male market time). *The unique solution to Equation* (24), *whenever feasible, satisfies*

$$\sigma_m^{PC} = \bar{\sigma}_m.$$

A sufficient condition is that the projected feasible set permits an increase to $\bar{\sigma}_m$ holding σ_f fixed and that

$$\frac{\partial (Y/L)}{\partial \sigma_m} \geq (1+\lambda_m) e_m' (1-\sigma_m)$$

along that segment. Holding inherited institutions fixed, let $\sigma_f^{PC}(A)$ denote the unique female choice. Under the single-crossing condition in Appendix A.4, higher A raises female market time.

5.2. **Institutional implementation.** Suppose the concession problem is feasible, and let $\boldsymbol{\sigma}^{PC}(s) = \left(\sigma_m^{PC}(s), \sigma_f^{PC}(s)\right)$ denote its optimal allocation. For brevity, write

$$Q(s) \equiv Q(\boldsymbol{\sigma}^{PC}(s); s), \qquad \underline{Z}(s) \equiv \underline{Z}(\boldsymbol{\sigma}^{PC}(s); s), \qquad \overline{Z}(s) \equiv \overline{Z}(\boldsymbol{\sigma}^{PC}(s); s).$$

All earnings and rents below are evaluated at this allocation. Since $\boldsymbol{\sigma}^{PC}(s) \in \mathcal{S}^{PC}(s)$, at least one admissible institutional pair satisfies Equation (20) at this allocation.

Holding marital power at its inherited value gives the property-only implementation

$$\gamma^*(s) = \frac{\widehat{V}_f(s) - (1-\rho_{-1})\omega_f - e_m(1-\bar{\sigma}_m) - \lambda_f e_f(1-\sigma_f^{PC})}{R/L}, \tag{26}$$

available when $\gamma^*(s) \in [\gamma_{-1}, 1/2]$. Holding property at its inherited value, and provided $\omega_f > 0$, gives the marital-power implementation

$$\rho^*(s) = 1 - \frac{\widehat{V}_f(s) - \gamma_{-1}R/L - e_m(1-\bar{\sigma}_m) - \lambda_f e_f(1-\sigma_f^{PC})}{\omega_f}, \tag{27}$$

available when $\rho^*(s) \in [0, \rho_{-1}]$.

Proposition 5 (The effective first concession)**.** *Suppose there is a threshold $\underline{A} > 0$ such that*

$$\sigma_f^{PC}(A) = 0 \quad \text{for } A < \underline{A}.$$

For every such state in which $Q(s) > \underline{Z}(s)$:

(i) a reduction in ρ has no effect on women's payoff and cannot relax participation;

(ii) an increase in γ raises women's payoff at rate $R/L > 0$.

Hence property is the only effective institutional concession when female market earnings are zero.

Proposition 5 follows directly from the payoff technology. At zero female earnings, a reduction in the husband's marital power has no payoff effect, whereas a positive property claim transfers nonlabor income. Under the status-quo convention for payoff-irrelevant legal changes, the first effective concession is therefore a property reform. Empirically, a statute that abolishes male preference in inheritance raises γ but need not bring it to $1/2$, because testamentary freedom and custom continue to shape realized holdings.

When $A \geq \underline{A}$, $\omega_f > 0$, and Proposition 3 is satisfied, both instruments can be effective. Equation (20) defines the sustaining set

$$\mathscr{C}(s) \equiv \{(\gamma, \rho) : \text{Equation (20) holds},\ \gamma \in [\gamma_{-1}, 1/2],\ \rho \in [0, \rho_{-1}]\}. \tag{28}$$

Solving for ρ gives the trade-off between property and marital power concessions:

$$\frac{d\rho}{d\gamma} = \frac{R/L}{\omega_f} > 0.$$

Greater property concessions permit smaller reductions in marital power while holding the woman's payoff fixed. All pairs on $\mathscr{C}(s)$ implement the same allocation and payoffs. Thus property is the unique effective margin before female market entry, while the later mix of property and marital power concessions is generally nonunique.

5.3. **The political boundary.** We model suffrage as a discrete change in formal regime-selection authority. To characterize men's incentive to retain this authority, define their maximal payoff under patriarchal control as

$$V_m^{PC,*}(s) \equiv \max\left\{V_m^{PC}(s;\boldsymbol{\sigma},\gamma,\rho) : \left(\boldsymbol{\sigma},\gamma,\rho\right) \in \mathscr{F}^{PC}(s)\right\}.$$

The male control premium relative to immediate autonomy is

$$\Delta_m(s) \equiv V_m^{PC,*}(s) - V_m^{N}(s), \tag{29}$$

which measures men's incentive to retain unilateral regime-selection authority. When $\Delta_m(s) > 0$, the best patriarchal arrangement gives men a strict gain over autonomy, so they retain it. At $\Delta_m(s) = 0$, this gain disappears. Because formal political authority consists only of the right to select household governance (Section 3.2), retaining it no longer provides men with an additional benefit. We therefore adopt a political-selection rule under which men relinquish unilateral authority when the control premium vanishes. This rule is naturally interpreted as the limiting outcome of an arbitrarily small positive cost of maintaining women's political exclusion.

The suffrage threshold is therefore given by

$$\bar{A} \equiv \min\{A \in \mathscr{A} : \Delta_m(\gamma_{-1}, \rho_{-1}, A) \leq 0\}, \tag{30}$$

the first productivity level along the ordered developmental path $\mathscr{A}$ at which unilateral control ceases to yield a strict benefit. Appendix A.7 establishes the existence of this threshold under the maintained assumptions.

Let $\hat{A}$ be the lowest productivity at which the solution of Equation (24) sets $\sigma_f = \bar{\sigma}_f$, assumed to exist within $A \in (0, 1]$. Appendix A.7 shows that the control premium vanishes once $A \geq \widehat{A}$. Provided the developmental path reaches this threshold in finite time, the suffrage transition occurs no later than the first generation in which $A_g \geq \widehat{A}$.

Proposition 6 (Control premium and suffrage)**.** *Suppose $\Delta_m(s)$ is positive at the initial state. Then:*

(i) for $A < \bar{A}$, men retain unilateral regime-selection authority;
(ii) at $A = \bar{A}$, the best PC gives men exactly their payoff under autonomy;
(iii) full suffrage is adopted at $\bar{A}$, and N is absorbing thereafter.

For the numerical figure, define the proximity-to-suffrage index

$$\phi(s) \equiv \min\left\{1, \frac{V_m^N(s)}{V_m^{PC,*}(s)}\right\} \tag{31}$$

whenever $V_m^{PC,*} > 0$; set $\phi = 1$ once $\Delta_m = 0$. The index approaches one as the control premium disappears, with $\phi = 1$ marking the political transition.

5.4. **Labor-market parity.** From Equation (4), the female-to-male earning ratio is

$$\frac{\omega_f}{\omega_m} = A\frac{\sigma_f}{\sigma_m}.$$

Equal legal claims and full suffrage do not by themselves imply equal earnings. Under $A \leq 1$ and $\sigma_f \leq \sigma_m$, parity requires both $A = 1$ and $\sigma_f = \sigma_m$. Thus legal equality and labor-market equality can emerge at different stages of development.

6. Dynamics and an illustrative institutional path

Conditional on the holdout rule, the static model maps inherited institutions and productivity into a unique constrained labor allocation and, once female earnings are positive, a set of sustaining institutional pairs. This section embeds that correspondence in a sequence of generations. It characterizes the institutional path from the first concession to suffrage and then illustrates it numerically.

Generation g inherits

$$s_g = (\gamma_{g-1}, \rho_{g-1}, A_g),$$

and relative female productivity follows

$$A_{g+1} = G(A_g), \qquad G(A_g) \geq A_g.$$

We assume that the developmental path reaches $\widehat{A}$ in finite time: there exists a generation $g^\star < \infty$ such that $A_{g^\star} \geq \widehat{A}$. If a patriarchal arrangement remains sustainable, current concessions become next generation's inherited institutions. At the suffrage threshold $\bar{A}$, the economy enters the absorbing autonomous regime.

6.1. **Property before suffrage.** In our paper, development moves the economy along a single dimension, women's relative productivity A. At low A, the return to women's market work is too small to justify withdrawing their time from the household, so patriarchy keeps them out of the market (Section 5.1). Marital power then has nothing to act on, and property is the only right whose extension raises a woman's payoff.

Proposition 7 (Property before suffrage)**.** *Suppose Equation (14) holds, and let g_P be the first generation that requires a concession, $Q(s_{g_P}) > \underline{Z}(s_{g_P})$. If $A_{g_P} < \underline{A}$, patriarchy keeps women out of market work, so property is the only effective concession. Provided it suffices*

and $\Delta_m(s_{g_P}) > 0$*, the first concession raises* γ *while men retain political authority, and suffrage occurs at a later generation* $\bar{g} > g_P$*.*

Whether property comes first therefore depends on how early in development the first concession is needed. If it is needed while A is still low, marital power has nothing to act on and land is the only margin, which was the situation of the agrarian economies in which these reforms began. The European chronology fits this case. Land reform came no later than the first limit on marital power in 22 of the 24 countries, and in all 24 once leaseholds are counted (Section 2). Had the first concession been needed only after women entered market work, or had the largest property claim been too small to secure participation, a reduction in marital power would have worked as well, and the model would not single out property.

A single concession does not settle the conflict. As long as patriarchy distorts the allocation, the woman works less than she would under autonomy, so the institutions she inherits leave her below her autonomous payoff. The rights granted in one generation raise that payoff for the next, and rising productivity raises it further. Each generation therefore faces a new required concession at inherited institutions, $Q(s_g) - \underline{Z}(s_g)$.

Proposition 8 (Concessions along the path)**.** *Suppose Equation* (14) *holds along the path, Assumption 4 holds, and autonomous spouses supply maximal market time. Then*

$$Q(s_g) - \underline{Z}(s_g) = \int_{\sigma_f^{PC}(s_g)}^{\bar{\sigma}_f} \Big[(1-\rho_{g-1})\frac{\partial \omega_f}{\partial \sigma_f}(x) + \gamma_{g-1}\frac{\partial (R/L)}{\partial \sigma_f}(x) - \lambda_f e_f'(1-x)\Big]dx \;\geq\; 0, \quad (32)$$

with strict inequality whenever patriarchy distorts the allocation, $\sigma_f^{PC}(s_g) < \bar{\sigma}_f$*. Consequently:*

(i) holding marital power at ρ_{g-1}*, the required property share satisfies* $\gamma_g - \gamma_{g-1} = \big[Q(s_g) - \underline{Z}(s_g)\big]/(R/L) \geq 0$*;*

(ii) holding property at γ_{g-1} *and provided* $\omega_f > 0$*, the required marital power satisfies* $\rho_{g-1} - \rho_g = \big[Q(s_g) - \underline{Z}(s_g)\big]/\omega_f \geq 0$*;*

with strict inequalities whenever patriarchy distorts the allocation.

The integrand in Equation (32) is the woman's private marginal return to market time at inherited institutions, and the integral runs over the market time that patriarchy withholds from her. Patriarchy distorts the allocation exactly when the control premium is positive, since a patriarchal arrangement that replicated the autonomous allocation would give men no gain. Before suffrage, rights therefore expand in every generation, and since A_g rises along the path, property rights increase and marital power declines with productivity. When the distortion disappears, the required concession and the premium vanish together, and suffrage follows by Proposition 6.

The two items correspond to the two steps of the minimal-adjustment rule we use to trace one path through $\mathscr{C}(s_g)$. Conditional on continued patriarchy:

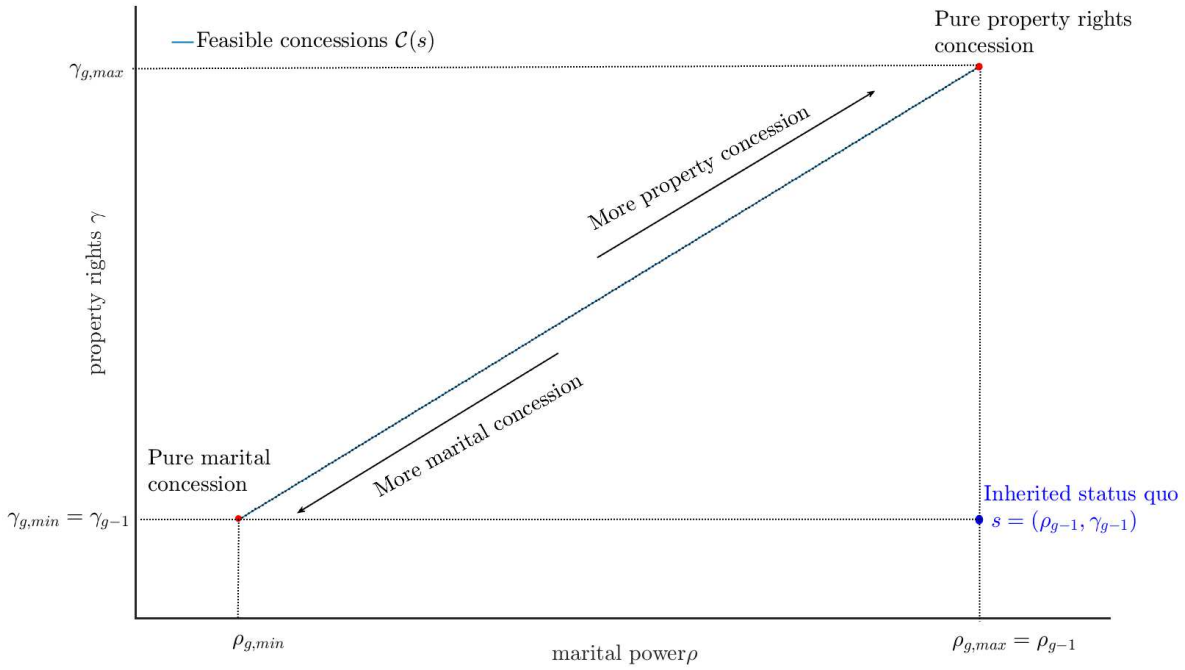


FIGURE 3. A sustaining set and the minimal-adjustment selection

Note: The blue locus is the set $\mathscr{C}(s_t)$ of pairs (γ, ρ) that deliver the same reservation value at the constrained allocation. The vertical projection holds inherited marital power fixed and selects the smallest property adjustment, as under the minimal-adjustment rule used in the simulation.

(1) if participation can be restored by changing γ while holding $\rho = \rho_{g-1}$, choose the smallest such increase in γ, as in Proposition 8(i);
(2) otherwise set $\gamma = 1/2$ and choose the smallest reduction in ρ that restores participation, as in Proposition 8(ii).

Other selections can combine the two concessions after female market entry without changing the initial property reform or the suffrage threshold.

6.2. **Numerical benchmark.** The numerical path uses

$$e_i(t_i) = \nu_i t_i^{\eta}, \qquad A_g = \min\{A_0 + \xi g, 1\},$$

with $\lambda_i > 0$ and the parameter values in Table 1. The discount factor β and horizon κ enter only through the holdout horizons, Equation (14), under which the participation target is $\widehat{V}_f = V_f^N$. The analytical environment also accommodates $\lambda_i = 0$.

Figure 4 reports the resulting path. Panel (a) shows that $\tau_f \geq \tau_m^N$ at every state before the political transition, so the woman's reservation value is V_f^N throughout. Panel (b) traces the institutions. At low A_g, women do no market work, a fall in ρ is ineffective, and the required concession is a property right. After female market entry, both instruments can

TABLE 1. Parameters for the numerical illustration

Parameter	Description	Value
ξ	Productivity increment	0.05
α	Labor share	0.70
η	Curvature of home production	0.05
ν_f, ν_m	Home-production efficiency	1.20, 0.20
λ_f, λ_m	Own-contribution internalization	0.02
$\underline{t}_f$, $\underline{t}_m$	Minimum nonmarket time	0.20, 0.15
X/L	Land per capita	0.17
β	Per-subperiod discount factor	0.90
κ	Within-generation horizon	50
A_0	Initial relative female productivity	0.10
γ_0	Initial property claim	0
ρ_0	Initial marital power	0.60

support participation. Under the minimal-adjustment rule, the path continues along the property margin until $\gamma = 1/2$ and then reduces ρ. At $\bar{A}$, the control premium reaches zero and suffrage is adopted. Relative earnings continue to rise afterward but approach $(1-\underline{t}_f)/(1-\underline{t}_m) < 1$ even at $A = 1$, owing to the asymmetry in minimum nonmarket time ($\underline{t}_f > \underline{t}_m$). Full earnings parity therefore requires an equal division of minimum nonmarket time, consistent with evidence that much of the remaining gender gap in earnings reflects the unequal division of childcare (Kleven et al., 2019; Goldin, 2021).

The ordering of the first concession and of suffrage follows from Propositions 5–7. The division between γ_g and ρ_g and the dates of the transitions reflect the parameterization and the selection rule. Appendix A.10 discusses robustness to the holdout and home-production parameters.

7. Reform stages and female relative productivity

Section 2 documents the historical ordering of reforms. This section provides supporting evidence for the theory. It examines that ordering within countries and, as supplementary description, relates the later stages to female relative productivity.

7.1. **Sample and measurement.** The legal chronology covers 25 European countries. All reform dates are those of Section 2, each the year in which the first nationally binding statute, legal code, or constitutional provision recognizing the right entered into force. Property rights concern ownership. They are measured by land inheritance and dated to the first provision that abolished the priority of sons over daughters, including married daughters, in intestate succession to at least some category of land. Marital power is the husband's control over household resources. Consistent with the baseline model, which applies marital power to the wife's earnings, we date its first limit by the statute allowing married women to control their

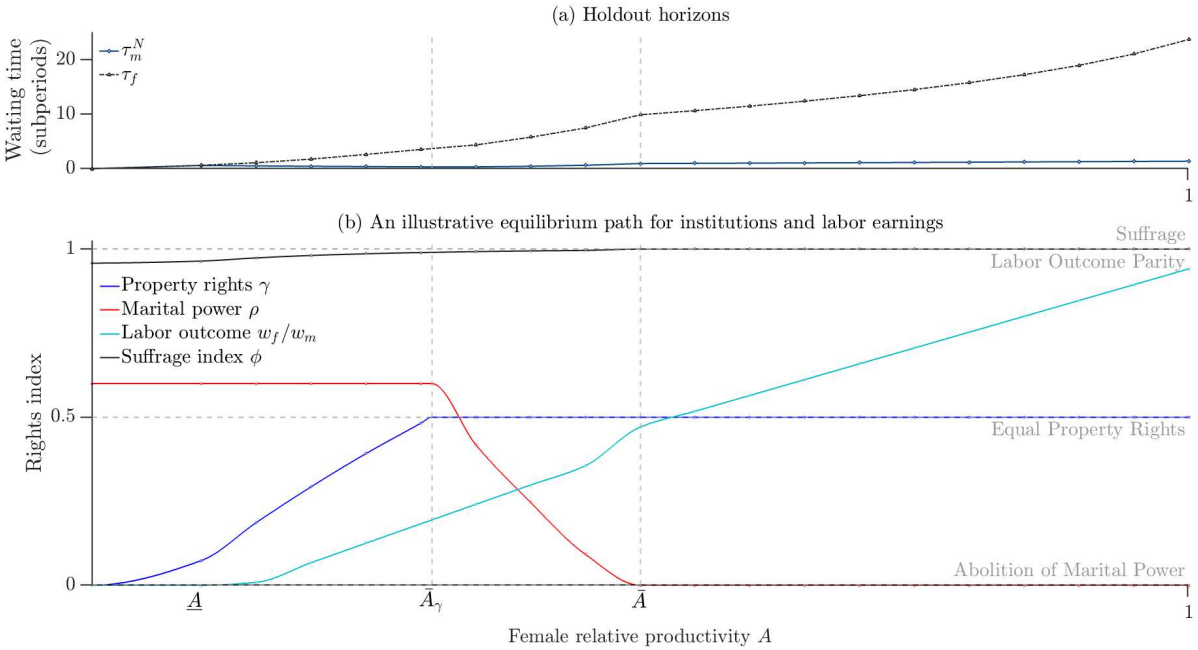


FIGURE 4. An illustrative institutional path and holdout horizons

Note: Panel (a) plots τ_m^N (blue solid line, Equation (11)) and τ_f (black dash-dotted line, Equation (12)). Panel (b) plots property rights γ (blue), the husband's marital power ρ (red), relative earnings ω_f/ω_m (cyan), and proximity to suffrage ϕ (black). Horizontal dashed lines mark equal property claims ($\gamma = 1/2$), the abolition of marital power ($\rho = 0$), and the value one for suffrage and earnings parity ($\phi = 1$ and $\omega_f/\omega_m = 1$). On the horizontal axis, $\underline{A}$ marks female market entry, $\bar{A}_\gamma$ the level at which property claims reach parity, and $\bar{A}$ the level at which suffrage is adopted. Vertical dashed lines mark $\bar{A}_\gamma$ and $\bar{A}$. Within the generation in which property claims reach parity, the figure shows γ reaching $1/2$ before ρ falls, as under the minimal-adjustment rule.

own earnings without their husbands' consent. Among the forms of this control, earnings are also the one that can be dated most consistently across countries. Extending marital power to all of the wife's resources leaves the order of reforms unchanged (Section 3.5 and Appendix A.11). Suffrage is the first national vote for women on the same terms as men, and equal pay the first nationwide equal-pay rule.

Female relative productivity is proxied by the female-to-male human capital ratio constructed from Lee and Lee (2016). The measure provides a reduced-form empirical counterpart to the model's A, capturing a slow-moving determinant of women's relative productivity in market work. The series begins in 1870 and is available for 21 of the 25 countries.

7.2. **The order of reforms.** Table 2 compares the dates of each pair of consecutive reforms within countries. Under the null that either order is equally likely, the number of countries in which the earlier stage comes first follows a binomial distribution, and countries in which the two reforms coincide carry no information about the order. Every comparison rejects

TABLE 2. The order of reforms within countries

	Earlier	Later	Same year	One-sided p
Property reform → marital power	16	2	6	< 0.001
Marital power → suffrage	21	4	0	< 0.001
Suffrage → equal pay	25	0	0	< 0.001
Property reform → suffrage	24	0	0	< 0.001

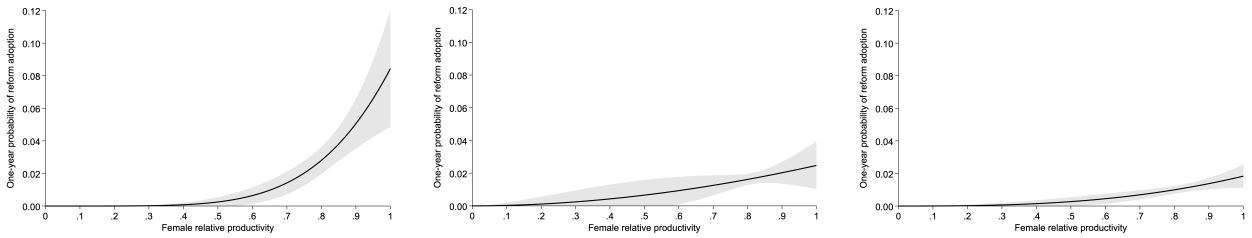
Note: Counts of European countries by the order of the two reforms. The p-values are from one-sided sign tests on the countries in which the two dates differ. Malta has no property date. Counting the equal division of leaseholds in England (1671) and Ireland (1695), property reform comes first in 18 of the 18 countries with distinct dates.

the null. Property reform came at least as early as the first limit on marital power in 22 of 24 countries, and in all 24 once the equal division of leaseholds in England and Ireland is counted. As noted in Section 2, for Malta, the legal record does not identify a provision that abolished the priority of sons over daughters, so no property date is recorded. Marital power was curtailed before suffrage in 21 of 25 countries, and suffrage preceded equal pay in all 25.

7.3. **Reform stages along female relative productivity.** We exclude property reform from the hazard analysis because only four of the 21 estimation countries adopt it after 1870, when the human-capital series begins. Its position in the sequence is established by the order tests in Section 7.2. We therefore focus the hazard analysis on the three subsequent stages. For each, we estimate a discrete-time logit of first codification on log female relative productivity, controlling for log population density, with standard errors clustered by country. Each reform is at risk from 1870, or from the first year the series is available, until its first codification, and the risk sets do not condition on earlier reforms, so the estimates impose no order. Figure 5 reports the fitted one-year probabilities. Within the observed range of female relative productivity, the probability of marital-power reform is the highest, followed by suffrage and then equal pay. Figure 6 compounds these annual probabilities over 200 years, holding female relative productivity fixed and taking the reforms in their historical order. Under this order, the densities peak at approximately 0.55, 0.62, and 0.74. Table B.4 in Appendix B.2.1 reports shorter and longer horizons.

Table 3 pools the three stages into a single hazard with stage-specific intercepts. The shared coefficient on female relative productivity is positive, and the stage-specific slopes are statistically indistinguishable ($p = 0.17$). The stage intercepts decline from marital power to suffrage and equal pay, so that, conditional on female relative productivity, the predicted adoption hazard is highest for marital-power reform and lowest for equal pay.

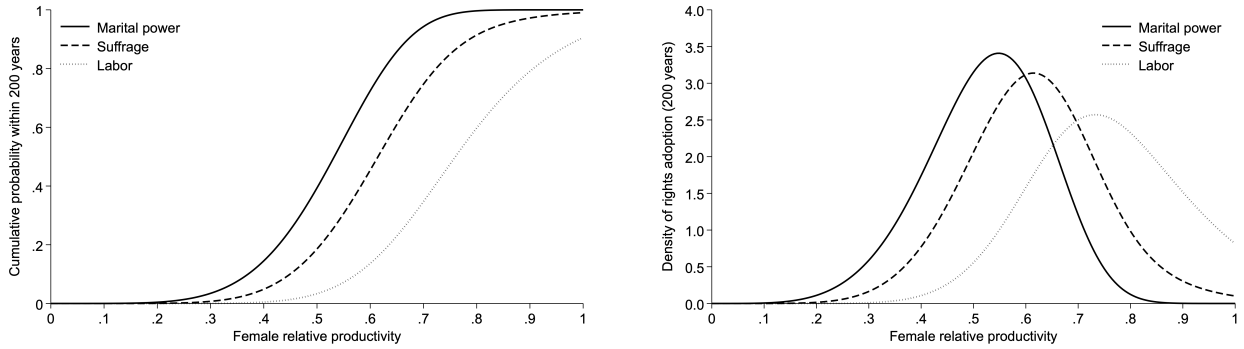
Column (2) adds decade fixed effects, which absorb the common rise of female relative productivity and reform adoption over time. The shared coefficient remains positive and significant, and equal pay remains the last stage. Equal-pay rules, on their own, behave



(A) Marital power (B) Suffrage (C) Equal pay

FIGURE 5. One-year reform adoption probabilities

Note: Each panel reports the fitted one-year probability of first codification with a 95% confidence interval. The horizontal axis is the female-to-male human-capital ratio.



(A) Cumulative probability (B) Density

FIGURE 6. Cumulative reform adoption within 200 years and its density

Note: Panel (a) compounds the fitted one-year probabilities in Figure 5 over 200 years, with reforms reached sequentially and productivity held fixed. Panel (b) is the derivative of panel (a) with respect to female relative productivity. Both are descriptive transformations of the regressions in Appendix B.2.1.

differently. Most were adopted within a few years of one another, many following the 1975 European Community directive on equal pay, so decade effects absorb their variation in the stage-specific hazard. In the model, full earnings parity requires, beyond productivity growth, an equal division of minimum nonmarket time (Section 6.2). Appendix B.2.1 reports the stage-specific estimates and further robustness checks.

8. CONCLUSION

This paper asks why women's property rights generally preceded women's suffrage. We assemble a new harmonized chronology of first legal codification for 25 European countries. The abolition of male preference in land inheritance precedes women's suffrage in every one of the 24 countries with a property date, by a median of almost eight decades, and limits on marital power came in between in most of them. Equal-pay rules came last almost everywhere, completing a broader historical pattern of gradual rather than simultaneous

TABLE 3. Pooled adoption hazard

	(1)	(2)
ln female relative productivity	2.797***	1.653**
	(0.720)	(0.828)
Stage intercept: suffrage	−0.575***	−0.232
	(0.198)	(0.393)
Stage intercept: equal pay	−1.046***	−1.746***
	(0.235)	(0.510)
ln population density	0.139	−0.245***
	(0.101)	(0.074)
Decade fixed effects	No	Yes
Equal slopes, p-value	0.174	0.325
Observations	3,548	3,548
Adoption events	55	55
Countries	21	21

Note: Discrete-time logit on the stacked risk sets of marital power, suffrage, and equal pay. Intercepts are relative to marital power. The equal-slopes test is from a specification with stage-specific slopes. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

institutional change. In the United States, where daughters inherited on equal terms from statehood, married women gained control of their earnings before the vote in most states.

The theory explains this ordering through the instruments men can use to preserve patriarchal control. Men hold political authority, but household formation requires women's consent, and a woman who can hold out at least as long as a man secures her payoff under autonomous governance. If the first concession becomes necessary before women enter market employment, reducing marital power cannot improve her payoff, whereas a claim to property income can. Property rights are therefore the first effective concession, granted while men retain political authority.

As productivity rises and women enter market employment, reductions in marital power also become effective concessions. The subsequent mix of property and marital-power reforms is not uniquely determined, but concessions continue as long as patriarchal governance distorts women's market time relative to autonomy. Productivity growth also erodes the gain men obtain from control, because it raises output most in households where women work more. When this premium disappears, men relinquish political authority under the maintained political-selection rule, and suffrage follows. Equal political rights do not, however, necessarily imply equal earnings: full convergence also requires men and women to bear equal minimum non-market time, highlighting the importance of unequal childcare responsibilities.

As supplementary descriptive evidence, hazard estimates for the later reforms show a positive pooled association with female relative human capital. The predicted adoption

hazards generally follow the historical ordering, although the stage-specific relationships are less robust.

More broadly, the analysis shows how development can shape the order of institutional reform, not only its pace. Which right is conceded first depends not only on the willingness of incumbents to grant it, but also on its economic value to those receiving it at the prevailing stage of development. This logic may extend to other institutional transitions in which those holding power must secure the cooperation of groups initially excluded from it.

Statements and Declarations

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Data availability. The chronology of women's rights reforms constructed for this paper, listing the legal instrument, provision, and source for each European country and reform, is available at https://docs.google.com/spreadsheets/d/1fTQazHd8nkBKIf5trQWG77MccdGzCCO7. The female-to-male human-capital ratio is constructed from Lee and Lee (2016). The code for the numerical illustration and the empirical analysis is available from the authors upon request.

References

Daron Acemoglu. Politics and economics in weak and strong states. *Journal of monetary Economics*, 52(7):1199–1226, 2005. URL https://www.sciencedirect.com/science/article/pii/S0304393205000838.

Daron Acemoglu and James A. Robinson. A theory of political transitions. *American Economic Review*, 91(4):938–963, 2001. ISSN 0002-8282. doi: 10.1257/aer.91.4.938. URL https://www.aeaweb.org/articles?id=10.1257/aer.91.4.938.

Patrick Agte, Orazio Attanasio, Pinelopi K. Goldberg, Aishwarya Lakshmi Ratan, Rohini Pande, Michael Peters, Charity Moore, and Fabrizio Zilibotti. Gender gaps and economic growth: Why haven't women won globally (yet)? Unpublished manuscript Discussion Paper No. 1105, Economic Growth Center, Yale University, 2024. URL https://elischolar.library.yale.edu/egcenter-discussion-paper-series/1105/.

Debasis Bandyopadhyay and Yueyan Zhou. Politics of technology adoption and women's rights in macro-development evolutionary dynamics. *Available at SSRN 4975716*, 2024. URL https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4975716.

Graziella Bertocchi. The enfranchisement of women and the welfare state. *European Economic Review*, 55(4):535–553, 2011. URL https://www.sciencedirect.com/science/article/pii/S0014292110000711.

Center For American Women And Politics. Women's suffrage in the U.S. by State. Report, Rutgers, The State University of New Jersey, 2014.

Michael Coppedge, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Jan Teorell, David Altman, Fabio Angiolillo, Michael Bernhard, Agnes Cornell, M. Steven Fish, Linnea Fox, Lisa Gastaldi, Haakon Gjerløw, Adam Glynn, Ana Good God, Sandra Grahn, Allen Hicken, Katrin Kinzelbach, Joshua Krusell, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Juraj Medzihorsky, Natalia Natsika, Anja Neundorf, Pamela Paxton, Daniel Pemstein, Johannes von Römer, Brigitte Seim, Rachel Sigman, Svend-Erik Skaaning, Jeffrey Staton, Aksel Sundström, Marcus Tannenberg, Eitan Tzelgov, Yi-ting Wang, Felix Wiebrecht, Tore Wig, Steven Wilson, and Daniel Ziblatt. V-Dem Country-Year/Country-Date Dataset v15, 2025.

Matthias Doepke and Michèle Tertilt. Women's liberation: What's in it for men? *Quarterly Journal of Economics*, 124(4):1541–1591, 2009.

Matthias Doepke, Michèle Tertilt, and Alessandra Voena. The economics and politics of women's rights. *Annual Review of Economics*, 4(1):339–372, 2012. ISSN 1941-1383, 1941-1391. doi: 10.1146/annurev-economics-061109-080201. URL https://www.annualreviews.org/doi/10.1146/annurev-economics-061109-080201.

Raquel Fernández. Women's rights and development. *Journal of Economic Growth*, 19 (1):37–80, 2014. ISSN 1381-4338, 1573-7020. doi: 10.1007/s10887-013-9097-x. URL

https://link.springer.com/10.1007/s10887-013-9097-x.

Food and Agriculture Organization of the United Nations. FAOSTAT: Land use, 2022.

Oded Galor. From stagnation to growth: unified growth theory. In *Handbook of Economic Growth*, volume 1, pages 171–293. Elsevier, 2005. doi: 10.1016/S1574-0684(05)01004-X. URL https://www.sciencedirect.com/science/article/pii/S157406840501004X.

Oded Galor. *Unified Growth Theory*. Princeton University Press, April 2011. ISBN 978-1-4008-3886-8. Google-Books-ID: qw7XdPAIob8C.

Oded Galor and David N. Weil. The gender gap, fertility, and growth, 1993. URL https://www.nber.org/papers/w4550.

Oded Galor and David N Weil. From Malthusian stagnation to modern growth. *American Economic Review*, 89(2):150–154, 1999. ISSN 0002-8282. doi: 10.1257/aer.89.2.150. URL https://pubs.aeaweb.org/doi/10.1257/aer.89.2.150.

Gapminder. Population, version 7. https://www.gapminder.org/data/documentation/gd003/, 2022.

R. Richard Geddes and Sharon Tennyson. Passage of the married women's property acts and earnings acts in the United States: 1850 to 1920. In *Research in Economic History*, volume 29, pages 145–189. Emerald Group Publishing Limited, 2013. URL https://www.emerald.com/insight/content/doi/10.1108/s0363-3268(2013)0000029007/full/html?skipTracking=true&utm_campaign=Emerald_Engineering_PPV_Dec22_RoN.

Claudia Goldin. *Career and family: women's century-long journey toward equity*. Princeton University Press, 2021. ISBN 978-0-691-22673-6. doi: 10.1515/9780691226736. URL https://www.degruyter.com/document/doi/10.1515/9780691226736/html.

Joan Hoff. *Law, gender, and injustice: A legal history of US women*, volume 4. NYU Press, 1991. URL https://books.google.com/books?hl=en&lr=&id=N_QTCgAAQBAJ&oi=fnd&pg=PR7&dq=Hoff,+J.+(1991).+Law,+gender,+and+injustice.+New+York,+NY:+NYU+Press.&ots=tZ0mpSzZZ5&sig=wiMaYSjFRkcg8QXeVfunPOowR30.

Kees Klein Goldewijk, Arthur Beusen, and Peter Janssen. Long-term dynamic modeling of global population and built-up area in a spatially explicit way: HYDE 3.1. *The Holocene*, 20(4):565–573, 2010.

Henrik Kleven, Camille Landais, and Jakob Egholt Søgaard. Children and gender inequality: Evidence from Denmark. *American Economic Journal: Applied Economics*, 11(4):181–209, 2019. ISSN 1945-7782. doi: 10.1257/app.20180010. URL https://www.aeaweb.org/articles?id=10.1257/app.20180010.

Nils-Petter Lagerlöf. The Galor–Weil model revisited: A quantitative exercise. *Review of Economic Dynamics*, 9(1):116–142, 2006. ISSN 10942025. doi: 10.1016/j.red.2005.07.002. URL https://linkinghub.elsevier.com/retrieve/pii/S1094202505000566.

Jong-Wha Lee and Hanol Lee. Human capital in the long run. *Journal of Development Economics*, 122:147–169, 2016. ISSN 0304-3878. doi: 10.1016/j.jdeveco.2016.05.006. URL https://www.sciencedirect.com/science/article/pii/S0304387816300396.

Michelle Rendall. Structural change in developing countries: Has it decreased gender inequality? *World Development*, 45:1–16, 2013. URL https://www.sciencedirect.com/science/article/pii/S0305750X12002495.

Michele Tertilt, Matthias Doepke, Anne Hannusch, and Laura Montenbruck. The economics of women's rights. *Journal of the European Economic Association*, 20(6), 2271-2316., 2022. URL wiwi.uni-bonn.de.

United Nations, Department of Economic and Social Affairs, Population Division. World urbanization prospects, 2009.

United Nations, Department of Economic and Social Affairs, Population Division. World population prospects, 2022.

Appendix A. Proofs and additional model details

A.1. **Regime preferences.** Fix inherited institutions (γ_{-1}, ρ_{-1}). Under autonomy, the Nash allocation $\boldsymbol{\sigma}^N$ belongs to the feasible set available to the man under uncompensated patriarchy. His utility at any fixed allocation and fixed institutions is the same in the two governance regimes. Revealed preference therefore gives

$$V_m^P(s) = \max_{\boldsymbol{\sigma}} U_m^F(\boldsymbol{\sigma}; \gamma_{-1}, \rho_{-1}) \geq U_m^F(\boldsymbol{\sigma}^N; \gamma_{-1}, \rho_{-1}) = V_m^N(s).$$

The inequality is strict whenever $\boldsymbol{\sigma}^N$ is not a maximizer of the man's patriarchal problem.

For the female ranking, define

$$u_f(\boldsymbol{\sigma}) = y_f^F(\boldsymbol{\sigma}; \gamma_{-1}, \rho_{-1}) + e_m(1 - \sigma_m) + \lambda_f e_f(1 - \sigma_f).$$

If

$$u_f(\boldsymbol{\sigma}^P) \leq u_f(\boldsymbol{\sigma}^N),$$

then $V_f^P \leq V_f^N$. For example, when $\sigma_m^P = \sigma_m^N = \bar{\sigma}_m$ and $\sigma_f^P \leq \sigma_f^N$, a sufficient condition is that

$$\frac{\partial y_f^F}{\partial \sigma_f} - \lambda_f e_f'(1 - \sigma_f) \geq 0$$

throughout the interval between σ_f^P and σ_f^N. The female ranking is therefore a restriction on the parameter region studied. □

A.2. **The holdout thresholds and the reservation value.** For any $F \in \{P, N\}$, Equation (10) implies

$$\mathscr{W}_i(T+1; F \mid s) - \mathscr{W}_i(T; F \mid s) = \beta^T \left[V_i^S(s) - V_i^F(s)\right]. \tag{A.1}$$

The difference is negative under Equation (9). Delay is costly because it replaces a subperiod of formed-household utility with singlehood.

At $T = 0$,

$$\mathscr{W}_m(0; P \mid s) = B_{\kappa+1} V_m^P > B_{\kappa+1} V_m^N.$$

At $T = \kappa + 1$,

$$\mathscr{W}_m(\kappa+1; P \mid s) = B_{\kappa+1} V_m^S < B_{\kappa+1} V_m^N.$$

Monotonicity therefore makes the set in Equation (11) nonempty and gives a unique largest element $\tau_m \in \{0, \ldots, \kappa\}$. Similarly,

$$\mathscr{W}_f(0; N \mid s) = B_{\kappa+1} V_f^N > B_{\kappa+1} V_f^P,$$

whereas

$$\mathscr{W}_f(\kappa+1; N \mid s) = B_{\kappa+1} V_f^S < B_{\kappa+1} V_f^P.$$

The set in Equation (12) is nonempty and has a unique largest element $\tau_f \in \{0, \ldots, \kappa\}$.

The thresholds can also be written in terms of cumulative discount weights. Let

$$B_T \equiv \sum_{j=0}^{T-1} \beta^j, \qquad B_0 = 0.$$

Then

$$\mathscr{W}_i(T; F \mid s) = B_T V_i^S + (B_{\kappa+1} - B_T) V_i^F.$$

Consequently, τ_m is the largest integer T satisfying

$$\frac{B_T}{B_{\kappa+1}} \leq \frac{V_m^P - V_m^N}{V_m^P - V_m^S}, \tag{A.2}$$

whereas τ_f is the largest integer T satisfying

$$\frac{B_T}{B_{\kappa+1}} \leq \frac{V_f^N - V_f^P}{V_f^N - V_f^S}. \tag{A.3}$$

The horizons thus compare the man's gain from uncompensated control with the household surplus he loses while single, and the woman's gain from autonomy with her cost of waiting.

Proof of Proposition 2. Under Equation (14), the holdout rule Equation (13) sets the woman's reservation value at $\widehat{V}_f = V_f^N$, and she accepts any arrangement that delivers at least this value. By Equation (A.1) and $V_m^N > V_m^S$,

$$B_{\kappa+1} V_m^N > \mathscr{W}_m(T; N \mid s) \qquad \text{for every } T > 0,$$

so any arrangement the man offers is offered at $j = 0$. An immediate PC delivering $\widehat{V}_f$ is accepted because female indifference is resolved in favor of acceptance, and it is weakly preferred to N whenever its per-subperiod value to the man is at least V_m^N. Any PC delivering more than $\widehat{V}_f$ can be reduced continuously until participation binds, raising the man's payoff, so Equation (18) holds. If no PC both meets the woman's reservation value and gives the man at least V_m^N, he offers N. If $\tau_f < \tau_m^N$, the rule sets $\widehat{V}_f = V_f^P$. Uncompensated patriarchy meets it, and the man offers P at $j = 0$. □

A.3. **Existence and reduction of the concession problem.** The time and institutional bounds in Equation (19) form a compact rectangle. Utilities and constraints are continuous. Thus $\mathscr{F}^{PC}(s)$ is a closed subset of a compact set. Its projection $\mathscr{S}^{PC}(s)$ is also compact. If $\mathscr{F}^{PC}(s)$ is nonempty, Weierstrass's theorem gives existence of a maximizer.

At an implemented PC, participation binds by Proposition 2. Since the spouses' incomes sum to Y/L,

$$\begin{aligned} V_m^{PC} + V_f^{PC} &= \frac{Y}{L} + e_f(1-\sigma_f) + \lambda_m e_m(1-\sigma_m) \\ &\quad + e_m(1-\sigma_m) + \lambda_f e_f(1-\sigma_f) \\ &= \frac{Y}{L} + (1+\lambda_f) e_f(1-\sigma_f) + (1+\lambda_m) e_m(1-\sigma_m). \end{aligned}$$

Subtracting $\widehat{V}_f$ gives Equation (24). Assumption 3 makes its domain convex and its objective strictly concave, so the time allocation is unique. Rights can remain nonunique because γ and ρ enter only through implementation of the binding participation requirement. All implementing pairs deliver the same female value and therefore the same residual male value. This proves Proposition 4. □

A.4. **Time allocation and female market entry.** Assumption 4 imposes $\sigma_m^{PC} = \bar{\sigma}_m$. The derivative with respect to female market time is

$$\Phi(\sigma_f; A) \equiv \frac{\partial(Y/L)}{\partial \sigma_f} - (1+\lambda_f)e_f'(1-\sigma_f) = Aw - (1+\lambda_f)e_f'(1-\sigma_f). \tag{A.4}$$

At the lower bound,

$$\Phi(0; A) = \alpha A \left(\frac{X/L}{\bar{\sigma}_m}\right)^{1-\alpha} - (1+\lambda_f)e_f'(1).$$

At $A = 0$, this expression is strictly negative. Provided that the implementation constraint defining $\mathcal{S}^{PC}(s)$ does not exclude a neighborhood of the lower bound, continuity gives a nonempty low-productivity region in which the unique optimum is $\sigma_f^{PC} = 0$. If $\Phi(0; A)$ crosses zero once, let $\underline{A}$ be its first crossing. Strict concavity then implies zero female market time below $\underline{A}$ and positive female market time above it. Proposition 5 requires only the resulting zero-market-time region and is stated directly in those terms.

For an interior choice, write

$$w = \alpha(X/L)^{1-\alpha}(\bar{\sigma}_m + A\sigma_f)^{\alpha-1}.$$

Holding σ_f fixed,

$$\Phi_A = \alpha(X/L)^{1-\alpha}(\bar{\sigma}_m + A\sigma_f)^{\alpha-2}\left[\bar{\sigma}_m + \alpha A\sigma_f\right] > 0.$$

Moreover,

$$\Phi_{\sigma_f} = \alpha(\alpha-1)(X/L)^{1-\alpha}A^2(\bar{\sigma}_m + A\sigma_f)^{\alpha-2} + (1+\lambda_f)e_f''(1-\sigma_f) < 0.$$

The implicit-function theorem therefore gives

$$\frac{d\sigma_f^{PC}}{dA} = -\frac{\Phi_A}{\Phi_{\sigma_f}} > 0$$

at an interior solution.

A.5. **Institutional feasibility and the property-first result.** At the constrained allocation, define

$$Z(\gamma, \rho; s) \equiv \gamma\frac{R}{L} + (1-\rho)\omega_f.$$

This function is continuous, weakly increasing in γ, and weakly decreasing in ρ. On the rectangle

$$[\gamma_{-1}, 1/2] \times [0, \rho_{-1}],$$

its minimum and maximum are exactly $\underline{Z}(s)$ and $\overline{Z}(s)$ in Equation (22). Its image is the full interval between them because the domain is connected and Z is continuous. Hence $Z = Q$ is implementable if and only if $Q \in [\underline{Z}, \overline{Z}]$, proving Proposition 3. Equations (26) and (27) follow by solving $Z = Q$ while holding one instrument at its inherited value.

When $\sigma_f^{PC} = 0$, Equation (3) gives $\omega_f = 0$. Consequently,

$$-\frac{\partial V_f^{PC}}{\partial \rho} = \omega_f = 0, \qquad \frac{\partial V_f^{PC}}{\partial \gamma} = \frac{R}{L} > 0.$$

If $Q > \underline{Z}$, inherited institutions do not meet participation. Lowering ρ cannot close the shortfall, whereas increasing γ does so whenever the property capacity is sufficient. This proves Proposition 5. The result concerns the only *effective* concession: a change in ρ at $\omega_f = 0$ would cost men nothing but would not help sustain household formation. □

A.6. **Geometry of the sustaining set.** When $\omega_f > 0$, solve Equation (20) for ρ:

$$\rho(\gamma; s) = 1 - \frac{\widehat{V}_f - e_m(1 - \bar{\sigma}_m) - \lambda_f e_f(1 - \sigma_f^{PC})}{\omega_f} + \frac{R/L}{\omega_f}\gamma.$$

Thus

$$\frac{\partial \rho}{\partial \gamma} = \frac{R/L}{\omega_f} > 0.$$

Intersecting this line with the institutional rectangle gives $\mathscr{C}(s)$. Each point implements the same female value, time allocation, and male value.

A.7. **Existence of the suffrage threshold.** Under N, each spouse's objective is concave in own market time. In the free-riding benchmark $\lambda_i = 0$, own home time has no private value, and since $\partial y_i^F / \partial \sigma_i > 0$, each spouse supplies maximal market time. By continuity the same holds near the benchmark, whenever

$$\lambda_i \, e_i'(\underline{t}_i) \;\le\; \left.\frac{\partial y_i^F}{\partial \sigma_i}\right|_{(\bar{\sigma}_m, \bar{\sigma}_f)}, \qquad i \in \{m, f\}, \tag{A.5}$$

so that $\boldsymbol{\sigma}^N(s) = (\bar{\sigma}_m, \bar{\sigma}_f)$. Let W denote the sum of the spouses' utilities and $\hat{A} \equiv \min\{A : \Phi(\bar{\sigma}_f; A) \ge 0\}$.

Lemma 9. *Suppose* (14), (A.5), *and Assumption 4 hold. Then* $\mathscr{F}^{PC}(s) \neq \varnothing$ *and* $\Delta_m(s) \ge 0$, *with equality if* $A \ge \hat{A}$ *or if* $\gamma_{-1} = 1/2$ *and* $\rho_{-1} = 0$. *Hence, if* $\Phi(\bar{\sigma}_f; 1) \ge 0$ *and the developmental path reaches* $\widehat{A}$ *in finite time, the first suffrage generation* $\bar{g}$ *exists and satisfies* $\bar{g} \le g^\star$, *where* $g^\star = \min\{g : A_g \ge \widehat{A}\}$. *Moreover, while inherited rights are below parity and*

the solution of Equation (24) is interior to $\mathcal{S}^{PC}(s)$, Δ_m depends on A alone and is strictly decreasing in A for $A < \hat{A}$.

Proof. At $\boldsymbol{\sigma}^N$ with inherited institutions, the woman receives V_f^N, so $Q(\boldsymbol{\sigma}^N; s) = \underline{Z}(\boldsymbol{\sigma}^N; s)$ and $\boldsymbol{\sigma}^N \in \mathcal{S}^{PC}(s)$. The man then receives V_m^N, so $\Delta_m \geq 0$. Since $\widehat{V}_f = V_f^N$, $\Delta_m = W^{PC,*} - W^N$.

By Assumption 4, $\sigma_m = \bar{\sigma}_m$ under both regimes, so W depends on σ_f alone, with derivative $\Phi(\sigma_f; A)$. If $A \geq \hat{A}$, then $\Phi(\bar{\sigma}_f; A) \geq 0$ because $\Phi_A > 0$, and strict concavity implies that W is maximized over $[0, \bar{\sigma}_f]$ at $\bar{\sigma}_f = \sigma_f^N$. Hence $W^{PC,*} = W^N$.

At parity, $\underline{Z} = \overline{Z}$, so the woman's value is determined by σ_f alone and equals the objective she maximizes under N. By (A.5), its unique maximizer is σ_f^N, so any $\sigma_f \neq \sigma_f^N$ violates participation. Hence $\mathcal{S}^{PC}(s) = \{\boldsymbol{\sigma}^N\}$ and $W^{PC,*} = W^N$.

By the assumed finite attainment of $\widehat{A}$, there exists a generation $g^\star$ with $A_{g^\star} \geq \widehat{A}$. Since $\Delta_m = 0$ whenever $A \geq \widehat{A}$, the political transition must occur no later than generation $g^\star$.

For the decline, recall that $\Delta_m = W^{PC,*} - W^N$, which does not depend on (γ_{-1}, ρ_{-1}) as long as the implementation constraint does not bind at the optimum. With $\sigma_m = \bar{\sigma}_m$, W depends on A only through Y/L, and $\partial(Y/L)/\partial A = w\sigma_f = \omega_f/A$. By the envelope theorem,

$$\frac{d\Delta_m}{dA} = \frac{\omega_f^{PC} - \omega_f^N}{A}.$$

Holding A fixed, $\omega_f = wA\sigma_f$ is strictly increasing in σ_f, since $\partial(w\sigma_f)/\partial\sigma_f = w\big[1 - (1-\alpha)A\sigma_f/(\bar{\sigma}_m + A\sigma_f)\big] > 0$. For $A < \hat{A}$, $\sigma_f^{PC} < \bar{\sigma}_f = \sigma_f^N$, so $\omega_f^{PC} < \omega_f^N$ and Δ_m is strictly decreasing in A. □

A.8. **Concessions along the path.**

Proof of Proposition 8. All earnings and rents without a bar are evaluated at the patriarchal allocation $(\bar{\sigma}_m, \sigma_f^{PC}(s_g))$ and productivity A_g, and $\bar{\omega}_f$, $\bar{R}$ at the autonomous allocation $(\bar{\sigma}_m, \bar{\sigma}_f)$ and A_g.

Since autonomous spouses supply maximal market time,

$$V_f^N(s_g) = (1 - \rho_{g-1})\,\bar{\omega}_f + \gamma_{g-1}\frac{\bar{R}}{L} + e_m(\underline{t}_m) + \lambda_f e_f(\underline{t}_f).$$

By Equations (21) and (22),

$$Q(s_g) - \underline{Z}(s_g) = V_f^N(s_g) - e_m(\underline{t}_m) - \lambda_f e_f\big(1 - \sigma_f^{PC}(s_g)\big) - \gamma_{g-1}\frac{R}{L} - (1 - \rho_{g-1})\,\omega_f.$$

Substituting $V_f^N(s_g)$, the term $e_m(\underline{t}_m)$ cancels and

$$Q(s_g) - \underline{Z}(s_g) = (1 - \rho_{g-1})\big(\bar{\omega}_f - \omega_f\big) + \gamma_{g-1}\frac{\bar{R} - R}{L} - \lambda_f\Big[e_f\big(1 - \sigma_f^{PC}(s_g)\big) - e_f(\underline{t}_f)\Big].$$

This is the change in $(1 - \rho_{g-1})\omega_f(x) + \gamma_{g-1}R(x)/L + \lambda_f e_f(1-x)$ as female market time x rises from $\sigma_f^{PC}(s_g)$ to $\bar{\sigma}_f$ at productivity A_g, which gives Equation (32).

At $\sigma_m = \bar{\sigma}_m$,

$$\frac{\partial \omega_f}{\partial \sigma_f}(x) = wA_g \frac{\bar{\sigma}_m + \alpha A_g x}{\bar{\sigma}_m + A_g x} > 0, \qquad \frac{\partial (R/L)}{\partial \sigma_f}(x) = (1-\alpha)\, wA_g > 0,$$

where w is evaluated at x. The first is strictly decreasing in x, since its derivative is proportional to $(2\alpha - 2)\bar{\sigma}_m + \alpha(\alpha - 1)A_g x < 0$, and the second is strictly decreasing because w falls as x rises. The term $-\lambda_f e_f'(1-x)$ is nonincreasing in x by concavity of e_f. The integrand is therefore strictly decreasing in x. By (A.5), it is nonnegative at $x = \bar{\sigma}_f$, so it is strictly positive for every $x < \bar{\sigma}_f$. Since $\sigma_f^{PC}(s_g) \leq \bar{\sigma}_f$, the integral is nonnegative, and strictly positive when $\sigma_f^{PC}(s_g) < \bar{\sigma}_f$.

For (i), holding $\rho = \rho_{g-1}$, implementation requires $\gamma_g R/L + (1 - \rho_{g-1})\omega_f = Q(s_g)$, while $\underline{Z}(s_g) = \gamma_{g-1} R/L + (1-\rho_{g-1})\omega_f$. Subtracting gives $(\gamma_g - \gamma_{g-1})R/L = Q(s_g) - \underline{Z}(s_g)$. For (ii), holding $\gamma = \gamma_{g-1}$, implementation requires $\gamma_{g-1} R/L + (1 - \rho_g)\omega_f = Q(s_g)$, and subtracting $\underline{Z}(s_g)$ gives $(\rho_{g-1} - \rho_g)\omega_f = Q(s_g) - \underline{Z}(s_g)$.

Finally, if $\Delta_m(s_g) > 0$, Lemma 9 gives $W^{PC,*} > W^N$, so $\boldsymbol{\sigma}^{PC} \neq \boldsymbol{\sigma}^N$, and since $\sigma_m^{PC} = \sigma_m^N = \bar{\sigma}_m$, $\sigma_f^{PC} < \bar{\sigma}_f$. Conversely, if $\sigma_f^{PC} = \bar{\sigma}_f$, the patriarchal allocation equals the autonomous one and $\Delta_m = 0$. □

A.9. **Control premium and the political transition.**

Proof of Proposition 6. By Lemma 9, $\mathscr{F}^{PC}(s)$ is nonempty and $\Delta_m(s) \geq 0$ at every state. For $A < \bar{A}$, the definition of $\bar{A}$ gives $\Delta_m > 0$, so the best PC gives men a strict gain over autonomy and they retain regime-selection authority, which proves (i). At $\bar{A}$, $\Delta_m \leq 0$ by definition and $\Delta_m \geq 0$ by Lemma 9, so $\Delta_m(\bar{A}) = 0$ and the best PC gives men exactly their payoff under autonomy, which proves (ii). The political-selection rule of Section 5.3 then transfers formal authority at $\bar{A}$, and N is absorbing thereafter, which proves (iii). □

Proof of Proposition 7. At g_P, zero female market time implies $\omega_{f,g_P} = 0$. A change in ρ therefore has no effect on participation, while an increase in γ raises the woman's payoff by $R_{g_P}/L > 0$. Feasibility within the property bound implies that this increase can close the shortfall. Since $\Delta_m(s_{g_P}) > 0$, the man strictly prefers the resulting PC to N and retains political authority at g_P. By definition, the first suffrage generation satisfies $\Delta_m \leq 0$ and must therefore occur after g_P. □

A.10. **Boundary cases and robustness.** Table A.1 collects the cases that are dispersed across the main text.

Several conclusions do not depend on the numerical benchmark. First, the property-first result requires only zero female market earnings, a positive participation shortfall, and positive land rents. It is invariant to β, κ, and λ_i conditional on those conditions. The holdout parameters β and κ affect whether Equation (14) holds, but once it does, $\widehat{V}_f = V_f^N$, and they do not change the fact that ρ has no payoff effect when $\omega_f = 0$. Second, near

TABLE A.1. Governance outcomes by holdout capacity and the participation shortfall

Condition	Household outcome	Institutional implication
$\tau_f < \tau_m^N$	Immediate P	The woman cannot outlast the man, and no concession is required.
$\tau_f \geq \tau_m^N$, $Q > \underline{Z}$ (equivalently $\Delta_m > 0$)	Immediate PC	Inherited rights leave a positive shortfall, and a binding pair (γ, ρ) is implemented. At zero female earnings only property is effective.
$\tau_f \geq \tau_m^N$, $Q = \underline{Z}$ (equivalently $\Delta_m = 0$)	N under shared authority	Patriarchy no longer distorts the allocation, and suffrage follows from the political-selection rule.

the free-riding benchmark, λ_i leaves autonomous labor supply at its maximum by (A.5) and affects the market-entry and suffrage thresholds only through the household value of home time. Finally, neither the static model nor the robustness argument orders the exact mix of γ and ρ after female market entry. That mix remains set-valued unless an explicit selection device is added.

A.11. **Marital power over the wife's total income.** Consider the alternative specification in which marital power applies to the wife's total income. For admissible (γ, ρ) and allocation $\boldsymbol{\sigma}$, the woman's market and property income is

$$\tilde{I}_f(\gamma, \rho; \boldsymbol{\sigma}) = (1-\rho)\Big(\omega_f + \gamma \frac{R}{L}\Big), \qquad \tilde{y}_m^F = \frac{Y}{L} - \tilde{I}_f, \qquad \tilde{y}_f^F = \tilde{I}_f, \tag{A.6}$$

while singlehood incomes are unchanged. In the baseline (5), $I_f = (1-\rho)\omega_f + \gamma R/L$, so that

$$\tilde{I}_f - I_f = -\rho\gamma \frac{R}{L}. \tag{A.7}$$

A tilde denotes objects under (A.6).

Lemma 10. *Let $\gamma_0 = 0$, and let the conditions of Proposition 7 hold in the baseline. Then under Equation (A.6), $\tilde{g}_P = g_P$, the first effective concession raises γ, and suffrage occurs at a generation $\tilde{\tilde{g}} > g_P$.*

Proof. Fix a state s with $\gamma_{-1} = 0$. By Equation (A.7), $\tilde{I}_f = I_f$ at the inherited institutions, so the allocations and values under P and N coincide with the baseline. Singlehood values are unchanged, so the horizons τ_f, τ_m^N and the reservation value $\widehat{V}_f$ coincide, and so does Q in Equation (21). The map $\tilde{I}_f$ is continuous on the connected set $[\gamma_{-1}, 1/2] \times [0, \rho_{-1}]$, with $\partial \tilde{I}_f/\partial\gamma = (1-\rho)R/L \geq 0$ and $\partial \tilde{I}_f/\partial\rho = -(\omega_f + \gamma R/L) \leq 0$. Its image is therefore the interval

$$\Big[\tilde{I}_f(\gamma_{-1}, \rho_{-1}),\ \tilde{I}_f(1/2, 0)\Big] = \Big[\underline{Z} - \rho_{-1}\gamma_{-1}\tfrac{R}{L},\ \overline{Z}\Big],$$

which equals $[\underline{Z}, \overline{Z}]$ when $\gamma_{-1} = 0$. Hence $\tilde{\mathcal{S}}^{PC}(s) = \mathcal{S}^{PC}(s)$. Since $\tilde{y}_m^F + \tilde{y}_f^F = Y/L$, the reduced problem Equation (24) is unchanged, so $\tilde{V}_m^{PC,*}(s) = V_m^{PC,*}(s)$ and $\tilde{\Delta}_m(s) = \Delta_m(s)$.

No concession occurs before g_P, so $\gamma_g = \gamma_0 = 0$ for all $g < g_P$. By induction on g, the states s_g coincide with the baseline for all $g \leq g_P$, and $\tilde{g}_P = g_P$.

At g_P, $\sigma_f^{PC} = 0$ implies $\omega_f = 0$, so $\tilde{I}_f(\gamma, \rho) = (1-\rho)\gamma R/L$ and $\underline{Z} = 0 < Q$. Since $\tilde{I}_f(0, \rho) = 0$ for every $\rho \in [0, \rho_{-1}]$, any pair implementing Q has $\gamma > 0$, and $Q \leq \overline{Z} = R/(2L)$ ensures that such a pair exists within the property bound. Moreover, $\tilde{\Delta}_m(s_{g_P}) = \Delta_m(s_{g_P}) > 0$, so men retain authority at g_P. Suffrage occurs at the first later generation with $\tilde{\Delta}_m \leq 0$, so $\tilde{\tilde{g}} > g_P$. □

Appendix B. Data and auxiliary empirical analysis

B.1. **Data definitions and reform dates.** Table B.1 reports the dates for the 25 European countries. The European chronology is an author-assembled coding of national property, marital, suffrage, and labor legislation. The definitions, legal provisions, and sources for each date are documented in our database.[4] Where two years are shown, the first is the year of enactment and the second the year of entry into force, which we use in the analysis. The sample consists of the countries whose present-day territory was governed by a single legal system throughout the period, so that each right has a well-defined first national codification. This excludes Poland and the successor states of the Soviet Union, Yugoslavia, and Czechoslovakia, whose territories fell under several legal systems when the reforms occurred. Andorra is excluded because its family property law remained uncodified customary law, the Vatican because it holds no elections, and Albania because verifiable statutory sources were not available.

Table B.2 reports the dates for U.S. states. It reports no property date, because most states had abolished primogeniture by the early nineteenth century, or never adopted it, so daughters inherited on equal terms with sons from statehood. What varied across states was the husband's control over his wife's resources, that is, marital power. Consistent with the European coding and the baseline model, we date its first limit by the earnings act, which gave married women control over their own earnings, using the dates in Geddes and Tennyson (2013), who reconcile earlier compilations including Hoff (1991). Suffrage dates are from Center For American Women And Politics (2014). Equal pay is dated by the first state equal-pay act and, where none precedes it, by the federal Equal Pay Act of 1963, effective in 1964.

[4] https://docs.google.com/spreadsheets/d/1fTQazHd8nkBKIf5trQWG77MccdGzCCO7.

TABLE B.1. First legal codification of women's rights in Europe

Country	Property	Marital power	Suffrage	Equal pay
Spain	≤1348	1926	1931	1962
Portugal	≤1521	1966	1968	1969
Austria	1786	1811/1812	1918	1979
France	1790	1907	1944	1946
Monaco	1793	1970	1962	1974
Belgium	1803	1900	1948	1967
Luxembourg	1803	1972	1919	1974
Liechtenstein	1809	1812	1984	1999
Netherlands	1809	1907/1909	1919	1975
Greece	1835	1946	1952	1975
Sweden	1845	1874	1921	1979/1980
Iceland	1850	1900	1920	1961/1962
Hungary	1852/1853	1852/1853	1945	1951
Norway	1854	1888	1913	1978/1979
Denmark	1857	1880	1915	1976
Romania	1864/1865	1864/1865	1946	1950
Italy	1865/1866	1865/1866	1945	1948
Finland	1878/1879	1889/1890	1906	1986/1987
Bulgaria	1890	1945	1944	1947
Ireland	1891/1892	1870	1922	1974/1975
Germany (West)	1896/1900	1896/1900	1918	1980
Switzerland	1907/1912	1907/1912	1971	1981
United Kingdom	1925/1926	1870	1928	1970/1975
San Marino	1953	1953	1960	1961
Malta	n.a.	1993	1947	1974

Note: Countries are ordered by the year of property reform. Where two years are shown, the first is the year of enactment and the second the year of entry into force. ≤ marks the earliest verifiable date at which equal division was in force. No reliable property date is available for Malta. The dates construct Figure 1.

TABLE B.2. First legal codification of women's rights in U.S. states

State	Marital power	Suffrage	Equal pay	State	Marital power	Suffrage	Equal pay
Alabama	1887	1920	1964	Montana	1887	1914	1964
Alaska	–	1913	1964	Nebraska	1871	1919	1964
Arizona	1973	1912	1964	Nevada	1873	1914	1964
Arkansas	1873	1920	1964	New Hampshire	1867	1920	1964
California	1872	1911	1964	New Jersey	1874	1920	1964
Colorado	1861	1893	1964	New Mexico	–	1920	1964
Connecticut	1877	1920	1964	New York	1860	1917	1964
Delaware	1873	1920	1964	North Carolina	1913	1920	1964
Florida	1892	1920	1964	North Dakota	–	1919	1964
Georgia	1861	1920	1964	Ohio	1861	1919	1964
Hawaii	–	1920	1963	Oklahoma	–	1918	1964
Idaho	1915	1896	1964	Oregon	1872	1912	1964
Illinois	1869	1920	1964	Pennsylvania	1872	1920	1964
Indiana	1879	1920	1964	Rhode Island	1872	1920	1964
Iowa	1873	1919	1964	South Carolina	1887	1920	1964
Kansas	1858	1912	1964	South Dakota	–	1918	1964
Kentucky	1873	1920	1964	Tennessee	1919	1919	1964
Louisiana	1928	1920	1964	Texas	1913	1920	1964
Maine	1857	1919	1964	Utah	1897	1896	1964
Maryland	1842	1920	1964	Vermont	1888	1920	1964
Massachusetts	1846	1920	1964	Virginia	1888	1920	1964
Michigan	1911	1918	1964	Washington	1881	1910	1964
Minnesota	1869	1919	1964	West Virginia	1893	1920	1964
Mississippi	1873	1920	1964	Wisconsin	1872	1919	1961
Missouri	1875	1919	1964	Wyoming	1869	1869	1964

Note: Marital power records the first earnings act reported by Geddes and Tennyson (2013). Suffrage and equal pay record the first state- or territory-level codification, with federal dates where no earlier state reform is recorded. A dash indicates that no act is reported. Geddes and Tennyson (2013) cover the 48 contiguous states. Property rights are not reported because daughters inherited on equal terms with sons from statehood. The data construct Figure 2.

TABLE B.3. Stage-specific adoption hazards

	Marital power	Suffrage	Equal pay
$\ln FRP$	5.203***	1.939	2.783***
	(1.107)	(1.458)	(0.964)
$\ln popden$	−0.035	0.006	0.349**
	(0.110)	(0.159)	(0.147)
Observations	572	1,154	1,822
Adoption events	15	19	21
Countries	15	19	21

Note: Discrete-time logit estimates of equation (B.1). Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

B.2. **Auxiliary empirical analysis.**

B.2.1. *Specification.* We proxy productivity with country–year human capital measures derived from Lee and Lee (2016), consistent with Galor (2005) and Lagerlöf (2006), who emphasize education-based human capital as a key driver of productivity and technological change. Female relative productivity is thus measured by the female-to-male human capital ratio at the country–year level. The resulting series captures relative female productivity as a slowly evolving economic fundamental.

All democracy-related variables are V-Dem indices (Coppedge et al., 2025). Population density (per km^2 of land area, present-day borders) is constructed from Gapminder (2022) before 1950 and United Nations, Department of Economic and Social Affairs, Population Division (2022) thereafter, divided by land area from Food and Agriculture Organization of the United Nations (2022). Urbanization is the estimated share of the population living in urban areas, from Klein Goldewijk et al. (2010) before 1950 and United Nations, Department of Economic and Social Affairs, Population Division (2009) thereafter.[5]

Let $d^r_{c,t}$ equal one when country c first adopts reform $r \in \{M, V, L\}$ in year t, where M denotes the first limit on marital power, V suffrage, and L equal pay, and let $\mathscr{R}^r$ be the country-years from 1850, or from first observation, in which r has not yet been adopted. Risk sets do not condition on earlier reforms, so the ordering of the fitted profiles is not imposed by construction. On $\mathscr{R}^r$,

$$\Pr\left(d^r_{c,t} = 1 \mid \mathscr{R}^r\right) = \frac{\exp(\Lambda^r_{c,t})}{1 + \exp(\Lambda^r_{c,t})}, \qquad \Lambda^r_{c,t} = \alpha_r + \beta_r \ln FRP_{c,t} + \eta_r \ln popden_{c,t}, \tag{B.1}$$

with reform-specific intercept α_r and coefficients β_r and η_r. Table B.3 reports the estimates.

[5]Both series are taken from the harmonized versions compiled by Our World in Data: https://ourworldindata.org/grapher/population-density and https://ourworldindata.org/grapher/urbanization-last-500-years.

TABLE B.4. Density peaks by horizon

Horizon H (years)	50	100	150	200	300
Marital power	0.72	0.63	0.58	0.55	0.51
Suffrage	0.86	0.73	0.66	0.62	0.56
Equal pay	1.00	0.91	0.80	0.74	0.66

Note: Value of FRP at which the density of adoption within H years peaks. At $H = 50$ the equal-pay density peaks at the upper bound of the plotted range.

Figure 5 plots the average fitted probability h_r at each value of FRP, with delta-method confidence intervals. For Figure 6, let $s_{j,\tau}$ be the probability of being in state $j \in \{0, M, MV, MVL\}$ (no reform, marital power only, marital power and suffrage, all three) after τ years. Starting from $s_{0,0} = 1$,

$$s_{0,\tau+1} = s_{0,\tau}(1 - h_M), \qquad s_{M,\tau+1} = s_{M,\tau}(1 - h_V) + s_{0,\tau}h_M,$$
$$s_{MV,\tau+1} = s_{MV,\tau}(1 - h_L) + s_{M,\tau}h_V, \quad s_{MVL,\tau+1} = s_{MVL,\tau} + s_{MV,\tau}h_L,$$

and the cumulative probabilities of marital-power reform, suffrage, and equal pay within H years are $1 - s_{0,H}$, $s_{MV,H} + s_{MVL,H}$, and $s_{MVL,H}$. Table B.4 shows that longer horizons move all density peaks to lower FRP.

B.2.2. *Pooled hazard and overall reform stage.* Pooling the three risk sets,

$$\Lambda^r_{c,t} = \alpha + \delta_V \mathbf{1}[r = V] + \delta_L \mathbf{1}[r = L] + \beta \ln FRP_{c,t} + \mathbf{X}'_{c,t}\boldsymbol{\eta},$$

where δ_V and δ_L shift the intercept relative to marital power, β is common to all stages, and $\mathbf{X}_{c,t}$ contains the controls. Columns (3)–(4) of Table B.5 report an ordered logit of the number of rights in force, $S_{c,t} = M_{c,t} + V_{c,t} + L_{c,t} \in \{0, 1, 2, 3\}$, on all country-years.

B.2.3. *Sensitivity.* Table B.6 varies controls, functional form, sample, the timing of FRP, and calendar time. The marital-power coefficient is positive in every row and significant in every row except the 10-year lag, and it remains significant with time trends, and at the 10 percent level with decade fixed effects. The equal-pay coefficient is significant at baseline and with most variations of controls, form, and sample, and it is absorbed by calendar time, as most equal-pay rules were adopted within a few years of one another. Dropping one country at a time leaves the marital-power and equal-pay coefficients significant at the 5 percent level in all 21 cases, with ranges 4.7–5.8 and 2.5–3.5. The suffrage coefficient is positive throughout but imprecise.

TABLE B.5. Pooled hazard and ordered logit

	Pooled hazard		Ordered logit	
	(1)	(2)	(3)	(4)
$\ln FRP$	2.797***	2.045**	7.475**	4.315*
	(0.720)	(0.820)	(3.109)	(2.306)
Suffrage intercept, δ_V	−0.575***	−0.421		
	(0.198)	(0.316)		
Equal-pay intercept, δ_L	−1.046***	−1.148***		
	(0.235)	(0.399)		
Equal slopes across stages (p)	0.174	0.640		
Controls	$\ln popden$	Democracy, urbanization	$\ln popden$	Democracy, urbanization
Observations	3,548	3,535	2,708	2,702

Note: Marital power is the omitted stage in columns (1)–(2). The equal-slopes test is a Wald test from a model with stage-specific slopes. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

TABLE B.6. Sensitivity of the coefficient on $\ln FRP$

	Marital power	Suffrage	Equal pay
Baseline (Table B.3)	5.203***	1.939	2.783***
	(1.107)	(1.458)	(0.964)
Democracy and urbanization controls	4.339***	2.637	1.529
	(1.069)	(2.058)	(1.243)
Population density in levels	5.288***	2.111	2.586***
	(1.129)	(1.495)	(0.965)
Baseline + post-war years	6.048***	1.955	2.782***
	(1.342)	(1.382)	(0.963)
Complementary log–log	5.086***	1.924	2.750***
	(1.059)	(1.449)	(0.948)
Excluding Bulgaria, Luxembourg, Malta	5.148***	2.032	2.829***
	(1.489)	(1.588)	(1.000)
$\ln FRP$ lagged 5 years	4.728***	0.970	1.995**
	(1.645)	(1.018)	(0.960)
$\ln FRP$ lagged 10 years	5.384	0.938	1.641*
	(3.295)	(1.025)	(0.990)
Linear time trend	6.028***	2.115	−4.491
	(1.115)	(2.135)	(2.863)
Quadratic time trend	7.912***	2.982	−4.401
	(2.916)	(2.275)	(2.779)
Decade fixed effects	11.921*	2.486	−4.682*
	(6.231)	(2.008)	(2.519)

Note: Each cell is from a separate regression. All rows except the second control for $\ln popden$. Post-war years are 1918–1920 and 1944–1946. Bulgaria, Luxembourg, and Malta curtailed marital power after suffrage. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.