From Polygyny to Serial Monogamy: a Unified Theory of Marriage Institutions

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Online Appendix

1 Relaxing Conditions (2) and (3)

Suppose that polygyny is the constitution.

Let us start by assuming that, different from Proposition 1, m is large enough or z is small enough, so that either females always prefer to be the only wife of a poor male rather than being in a polygynous households, or rich males prefer one rich wife to two poor wives. In both cases, all marriages are monogamous even if polygyny is in principle allowed, as summarized by the following proposition.

Proposition 1 *If the jealousy cost m satisfies*

$$m > \max\left\{v(2) - v\left(1+\omega\right), v\left(\frac{2+4\omega}{3}\right) - v\left(2\omega\right)\right\},$$

or if preferences satisfy

$$zu_p < v(1+\omega) - v\left(\frac{2+4\omega}{3}\right),$$

the equilibrium under polygyny coincides with the monogamous equilibrium.

Let us now assume instead that (i) rich females prefer to marry a poor male monogamously, rather than being in a polygynous household, but (ii) rich males still prefer two poor wives to one rich, as in the benchmark, and (iii) poor females are better off as the second wife of a rich than the only wife of a poor. At equilibrium, there can be only poor polygynous households (one rich male, two poor females), and the marriage pattern depends on a condition on μ_t. As explained by the following proposition, if $\mu_t \leq (1-\phi_t)/2$, there are enough poor females to allow all rich males to marry polygynously, and all rich females marry poor males; otherwise, the rich males who cannot be polygynous marry rich females.

Proposition 2 *Assume that the jealousy cost m satisfies*

$$v(2) - v(1+\omega) < m < v\left(\frac{2+4\omega}{3}\right) - v(2\omega),$$

and preferences satisfy

$$zu_p > v(2) - v\left(\frac{2+4\omega}{3}\right).$$

If $\mu_t \leq (1-\phi_t)/2$, in equilibrium we have μ_t poor polygynous households, ϕ_t poor/rich couples, $1-\phi_t-2\mu_t$ poor couples, and μ_t poor single males.

If $\mu_t > (1-\phi_t)/2$, we have $(1-\phi_t)/2$ poor polygynous households, $\mu_t - (1-\phi_t)/2$ rich couples, $(1+\phi_t)/2 - \mu_t$ poor/rich couples, and $(1-\phi_t)/2$ poor single males.

Consider now a different case, in which we depart in two ways from the benchmark: (i) rich females prefer to marry one poor male monogamously, rather than being in a polygynous household, and (ii) rich males prefer one rich wife to two poor wives (although they still prefer two poor wives to just one poor wife). In such a case, in equilibrium there are no rich polygynous households, ϕ_t rich couples, and $\mu_t - \phi_t$ poor polygynous households (provided that there are enough poor females, i.e. if $\mu_t < (1+\phi_t)/2$). We can thus claim the following.

Proposition 3 *Assume that the jealousy cost m satisfies*

$$v(2) - v(1+\omega) < m < v\left(\frac{2+4\omega}{3}\right) - v(2\omega),$$

and preferences satisfy

$$v(1+\omega) - v\left(\frac{2+4\omega}{3}\right) < zu_p < v(2) - v\left(\frac{2+4\omega}{3}\right).$$

If $\mu_t < (1+\phi_t)/2$, in equilibrium we have ϕ_t rich couples, $\mu_t - \phi_t$ poor polygynous households, $1+\phi_t-2\mu_t$ poor couples, and $\mu_t - \phi_t$ poor single males.

If $\mu_t \geq (1+\phi_t)/2$, we have ϕ_t rich couples, $(1-\phi_t)/2$ poor polygynous households, $2\mu_t - \phi_t - (1-\phi_t)/2$ rich/poor couples, and $1-\mu_t$ poor single males.

Further cases are possible. For example, if the jealousy cost m satisfies

$$v(2) - v(1+\omega) > m > v\left(\frac{2+4\omega}{3}\right) - v(2\omega),$$

poor females prefer to form a couple with a poor male, rather than join a polygynous household.

2 Dynamics: Further Details and Robustness

The simulated time paths of μ_t and ϕ_t, generated by the parametrization in Table 2, are reported in Figure 1, which complements Figure 7 in Section 5.

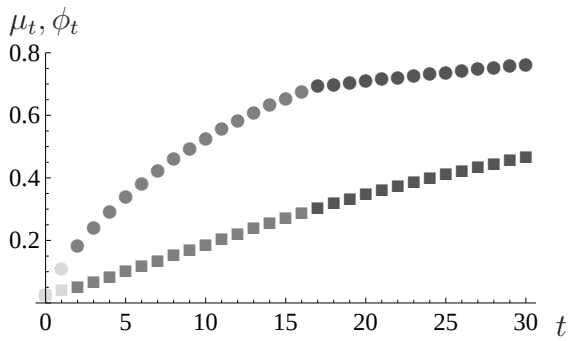


Figure 1: Group sizes over time with $\chi = \theta = 1$: **P** (light gray), **M** (gray), **S** (darker gray)

Figure 2 plots the shares of the eight family types of Table 1 over time. Our simulation generates a divorce rate that is probably too high, at the beginning of the **P** regime. The model with unequal political weights would deliver more realistic results, since less rich persons are needed to impose serial monogamy, and the overall divorce rate is thus lower (recall that poor couples do not divorce).

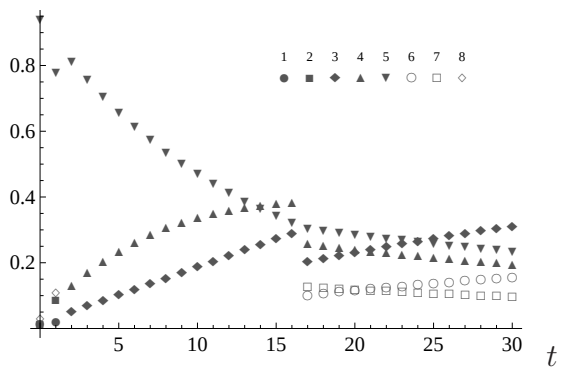


Figure 2: Share of family types over time with $\chi = \theta = 1$

We now show how the results of the simulation presented in Section 5 change if we choose alternative values for some of the parameters listed in Table 2. The analysis is restricted to the case $\chi = \theta = 1$, and the new dynamic paths can be compared with Figures 7 and 1. The results of our robustness check are summarized in Figure 3, where below each panel we report the new values assigned to the parameters that have been changed, with respect to Table 2.

First of all, note that improving initial conditions to $\mu_0 = .08$ and $\phi_0 = 0.07$ (instead of $\mu_0 = .03$, $\phi_0 = 0.029$) does not affect significantly the dynamics of the model, as can be seen from the panel A of Figure 3.

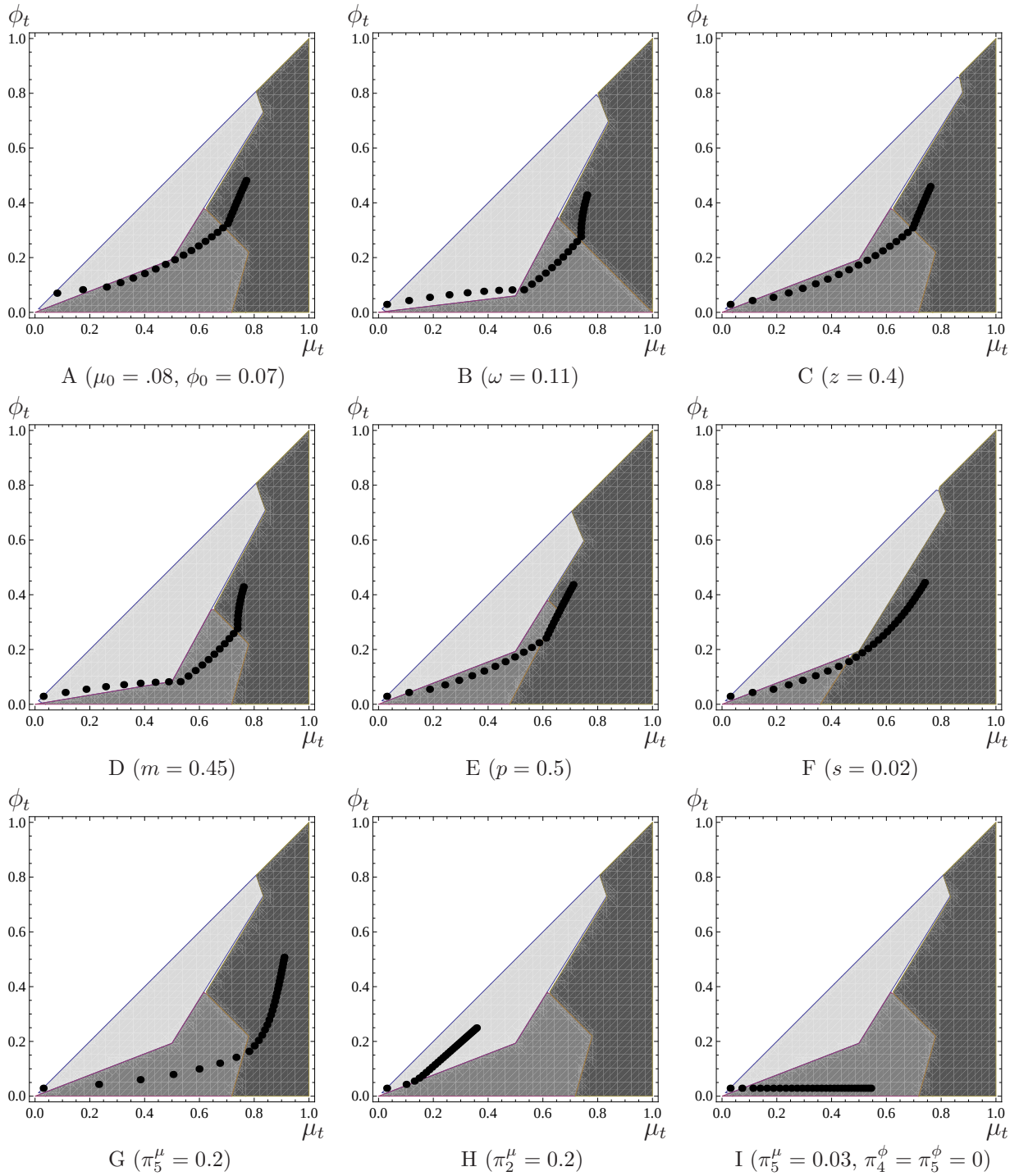


Figure 3: Dynamics: robustness check; **P** (light gray), **M** (gray), **S** (darker gray). Panel A: higher initial conditions; B: lower poor income; C: higher taste for diversity; D: lower jealousy cost; E: higher probability of a marriage going bad; F: lower social cost of divorce; G: higher probability that boys from poor couples become rich; H: lower probability that boys from poor polygynous households become rich; I: lower probability that children from poor couples become rich.

As explained in the main text (Lemma 9), modifying the values of ω, m, p and s moves the frontiers between the marriage institutions arising as political equilibria, but the transitions

$\mathbf{P} \to \mathbf{M} \to \mathbf{S}$ take place in the usual order, with monogamy emerging as an intermediate regime. This is confirmed by the numerical examples in panels B, D, E and F of Figure 3. In particular, lowering either the jealousy cost or the relative income of the poor implies that the transition from **P** to **M** needs several period to be completed, as can be seen from panels B and D. Panels E and F display another interesting possibility, namely that the transition from **M** to **S** may occur when the poor are still the majority and poor females are pivotal. Note also that the dynamics depicted in panel F are generated by a parametrization that, pushing the social cost of divorce down to 0.02, violates Condition (7), so that $\hat{\mu}(\phi_t) < \tilde{\mu}(\phi_t)$. Still, the transitions from **P** to **M** and from **M** to **S** take place in the usual order. Panel C shows that changing z does not even affect the equilibrium.

The social mobility parameters are obviously crucial for the dynamic trajectory followed by our model economy. For instance, panel G of Figure 3 shows that enhancing the social mobility of boys from poor couples makes the transition from **M** to **S** occur when the poor are still the majority. Decreasing the social mobility parameter for boys from poor polygynous households (π_2^{μ}), from 0.5 to 0.2, implies that the society remains polygynous at the steady state, as depicted in panel H. Finally, panel I shows that if we decrease the probability that children from poor/poor and poor/rich couples become rich (i.e. setting $\pi_5^{\mu} = 0.03$ and $\pi_4^{\phi} = \pi_5^{\phi} = 0$), the steady state is located in the monogamy region.

Figure 4 displays, for the same numerical examples, the simulated time paths of μ_t and ϕ_t.

3 Dynamics with Varying χ and θ (Progressive Enfranchisement)

For today's Western world, with universal suffrage prevailing ($\chi = \theta = 1$), our theory predicts that serial monogamy emerges if the share of the rich is large enough. Let us then go back in time by less than a century, when only women lacked voting rights ($\chi = 0$, $\theta = 1$), and there was a majority of poor males. Under these circumstances, strict monogamy would be the political equilibrium outcome. Finally, if we move back by another century or two, we would find a world in which both women and low-status men were disenfranchised ($\chi = \theta = 0$), and therefore rich men could impose polygyny to the society (as described by Section 5.3). This mechanism, however, is somehow at odds with the historical evidence presented in Section 2.1 because, for instance, socially imposed monogamy had emerged well before the extension of the franchise to lower-status men.

It is possible, however, to reconcile our theory with historical evidence, if progressive enfranchisement is not taken too literally. In particular, we can study the dynamic behavior of our model, when θ_t and χ_t change over time, but these political weights are also allowed to take values comprised between 0 and 1, as in Section 4.2.

In order to build a dynamic simulation, along the lines of that in Section 5.2, we assume

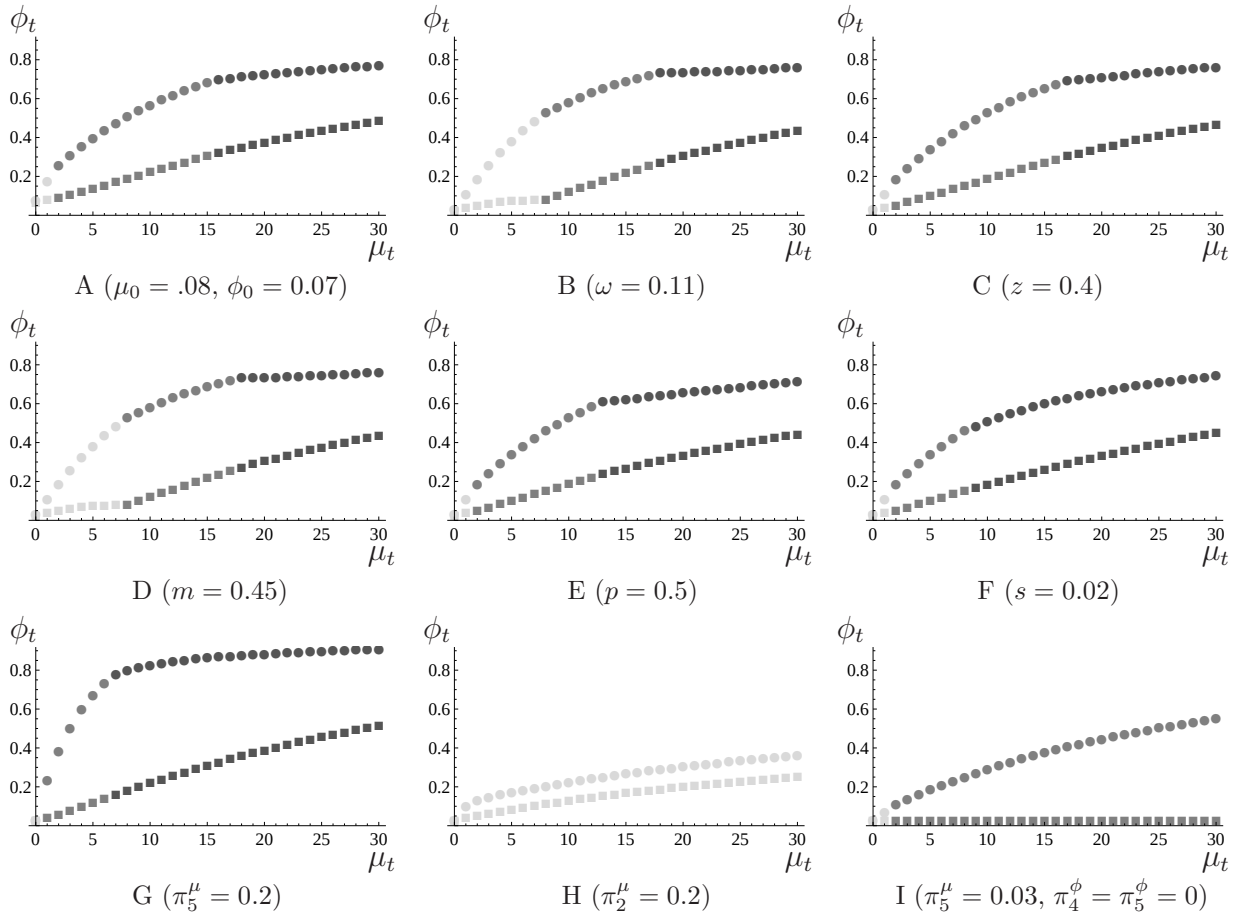
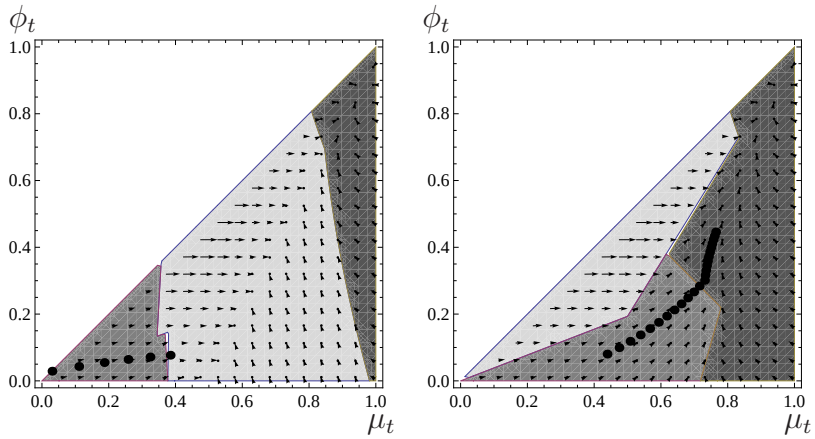


Figure 4: Dynamics: robustness check (simulated time paths for μ_t and ϕ_t); **P** (light gray), **M** (gray), **S** (darker gray). Panel A: higher initial conditions; B: lower poor income; C: higher taste for diversity; D: lower jealousy cost; E: higher probability of a marriage going bad; F: lower social cost of divorce; G: higher probability that boys from poor couples become rich; H: lower probability that boys from poor polygynous households become rich; I: lower probability that children from poor couples become rich.

that political weights evolve deterministically over time according to $\theta_t = \min\{1, t/9\}$ and $\chi_t = \max\{0, \theta_t - 0.5\}$, for $t = 0 \ldots 30$. Both θ_t and χ_t increase over time, but female empowerment follows with a lag, consistent with historical evidence. The left panel of Figure 5 shows the resulting dynamics from $t = 0$ to $t = 6$, together with the map of equilibrium marriage institutions at $t = 6$. The right panel of Figure 5 shows the dynamics from $t = 7$ to $t = 30$, together with the map of marriage regimes at $t = 30$. Figure 6 reports the implied time paths of μ_t and ϕ_t.

Keeping in mind that changes in χ and θ make the **P**/**M** and **M**/**S** frontiers move, these results can be interpreted as follows. At $t = 0$, only rich males have power, and the possible political equilibria are described by the left panel of Figure 5. Polygyny prevails and the share of rich male increases (from $t = 0$ to $t = 6$). With fixed political weights, the economy would converge to the polygynous steady state. However, since males gain some power ($\theta_5 = 0.55$), monogamy eventually takes over (the center panel of Figure 5



Note. *Left panel*: $t = 0...4$; regions valid for $t = 4$. *Right panel*: $t = 5...30$; regions valid for $t = 30$.

Figure 5: Dynamics with varying weights: **P** (light gray), **M** (gray), **S** (darker gray)

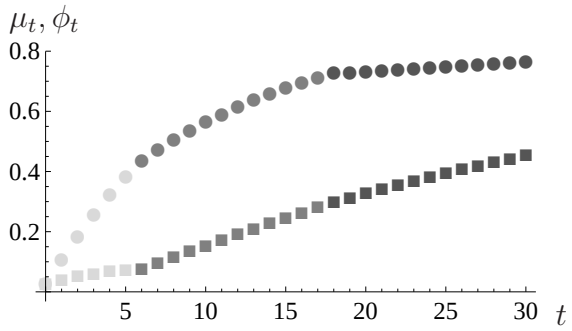


Figure 6: Group sizes over time, varying weights: **P** (light gray), **M** (gray), **S** (darker gray)

represents the situation at $t = 6$, i.e. the last polygynous equilibrium of time t before monogamy becomes the Condorcet winner). This regime switch alters the social mobility pattern, namely improving the chances of girls to become rich, and pushes the economy further away from the **P**/**M** frontier. When χ_t becomes sufficiently high, serial monogamy prevails, and the economy converges to the steady state located in this regime (as shown by the right panel of Figure 5).

Hence, our model is compatible with the idea that the two transitions, from **P** to **M**, and from **M** to **S**, could have been sparked by the progressive increase of political power, first of poor males and, more recently, of women. Let us also stress that, alternatively, we could have made political weights depend on the state of the economy (μ_t, ϕ_t). Letting them vary exogenously, however, helps us keep the analysis more transparent.[1]

[1]The political power of the poor (θ) should be increasing in μ, consistent with the "middle class drive" hypothesis: as new segments of the society gain access to power, they extend political influence to low(er) classes. Concerning χ, Acemoglu and Robinson (2000) suggest that the enfranchisement of women was essentially exogenous, being driven by changes in social values, rather than by economic factors. Doepke and Tertilt (2009) claim instead that the increased importance of human capital may have pushed men to relinquish some of their power (in favor of women).

4 Model with Endogenous Marriage Quality

In our basic model we have introduced an exogenous social cost of divorce s, which explains why the poor may prefer **M** to **S** for some state of the economy (instead of being indifferent between the two institutions). As discussed in the main text, when someone divorces, this may impose a cost, or a negative externality, on the society as a whole. In this Appendix, we consider another type of externality (or, more precisely, a contractual failure), arising from within the couple. We assume that the option of divorce makes people less inclined to undergo marriage-specific investment.[2] In particular, they may decide to spend less time with their partner (or with their children, or building up housekeeping skills, etc.), in order to generate private gains proportional to their income. This lack of marriage-specific investment increases the chances that a relationship turns bad. This hurts particularly poor females married to rich males. For such women the prospective private gains are minimal, while the private cost of divorce d is large; they would then invest in the quality of their marriage, while their husbands would not.

Assume that people can decide whether to invest time in their relationship(s). If they do, everything is as in our baseline model. If they do not, they increase their labor time endowment during the first subperiod by a proportion x. It seems also natural to assume that this additional income is not subject to the equal sharing rule assumed otherwise. In other words, if one person works additional hours and consequently neglects her/his partner and family, this gives her/him some extra money to be spent on private consumption. Finally, we also assume that when at least one spouse does not invest time in the relationship, the probability that its quality deteriorates increases from p to p^+.

Let us consider a situation where this type of investment does not take place only if divorce is allowed. This implies that it is not optimal not to invest time in the marriage, in both the **P** and the **M** regimes. For it to be the case, the expected loss in relationship utility, $(p^+ - p)(g - b)$, must exceed the gain in consumption utility, i.e.

$$(p^+ - p)(g - b) > \max\{v(2+x) - v(2),\ v((2+x)\omega) - v(2\omega),$$
$$v(1+\omega+x) - v(1+\omega),\ v(1+\omega+x\omega) - v(1+\omega)\}.$$

This should hold for the members of all the possible types of household. Under this condition, for the **P** and **M** regimes nothing is changed with respect to the basic model.

When divorce is available, many cases are possible. Let us focus on one in which rich males never invest in their relationship, even if they are currently married to a rich female and

[2] The idea that the accumulation of marriage-specific capital may be discouraged by the prospect of divorce has been put forward by Becker (1993), and tested by Stevenson (2007).

are certain to remarry a poor one in case of divorce,

$$(1-p^+)v\,(2+x)+p^+v\left(\frac{3+\omega}{2}+x-d\right)>(1-p)v\,(2)+pv\left(\frac{3+\omega}{2}-d\right).$$

A fortiori, a rich male married to a poor female does not invest in the quality of his marriage. His poor wife, on the contrary, would in principle invest,

$$(1-p^+)v(1+\omega+x\omega)+p^+v(1+\omega+x\omega-d)<(1-p)v(1+\omega)+pv(1+\omega-d),$$

but decides not do to so since her effort would be useless given her husband's choice. This case is possible because the gain from not investing in marriage quality is proportional to income. Only poor couples will invest in their relationship, since the opportunity cost of their time is lower. Instead, all those who divorce in case of a bad marriage have actually not invested in their relationship, and hence the probability p^+ applies to them. The following proposition characterizes the **S** regime and replaces Proposition 3 of the main text.

Proposition 4 *Assume that serial monogamy is the constitution at time t. If the divorce cost d satisfies*

$$v(2\omega)-v\left(\frac{1+3\omega}{2}-d\right)>g-b>v(2+x)-v(2+x-d),$$

we have in equilibrium:

(i) $(1-p^+)\phi_t$ *lasting marriages between rich persons,*

(ii) $p^+\phi_t$ *marriages between rich persons ending in divorce by mutual consent,*

(iii) $p^+\phi_t$ *remarriages between rich persons,*

(iv) $1-\mu_t$ *lasting marriages between poor persons.*

Moreover let us denote

$$\begin{aligned}\overline{\nu}_t &= \frac{\phi_t}{\mu_t}v\left(\frac{3+\omega}{2}+x-d\right)+\frac{\mu_t-\phi_t}{\mu_t}v(1+\omega+x-d)+g-b,\\ \underline{\nu}_t &= \frac{p^+\phi_t}{p^+\phi_t+\mu_t-\phi_t}v\left(\frac{3+\omega}{2}+x-d\right)+\frac{\mu_t-\phi_t}{p^+\phi_t+\mu_t-\phi_t}v(1+\omega+x-d).\end{aligned}$$

(a) If $v(1+\omega+x)>\overline{\nu}_t$*, then we have*

(v) $\mu_t-\phi_t$ *lasting marriages between rich males and poor females.*

(b) If $\underline{\nu}_t<v(1+\omega+x)<\overline{\nu}_t$*, then we have*

(v') $p^+(\mu_t-\phi_t)$ *marriages between rich males and poor females ending in divorce,*

(vi') $p^+(\mu_t - \phi_t)$ *remarriages between rich males and poor females,*

(vii') $(1-p^+)(\mu_t - \phi_t)$ *lasting marriages between rich males and poor females.*

(c) If $v(1+\omega+x) < \underline{\nu}_t$*, then we have*

(v") $\mu_t - \phi_t$ *marriages between rich males and poor females ending in divorce,*

(vi") $\mu_t - \phi_t$ *remarriages between rich males and poor females.*

Compared to Proposition 3, the probability of divorce for couples with at least one rich person is higher. With endogenous marriage quality, indirect utilities are thus given by:

$$
\begin{aligned}
W^S_{rm}(\mu_t,\phi_t) &= 2g + \frac{\phi_t}{\mu_t}(1-p^+)v(2+x) \\
&+\frac{\phi_t}{\mu_t}p^+ \times \begin{cases} v(2+x-d) & \text{if } (a) \\ \frac{\phi_t}{\mu_t}v(2+x-d) + \frac{\mu_t-\phi_t}{\mu_t}\, v\left(\frac{3+\omega}{2}+x-d\right) & \text{if } (b) \\ \frac{p^+\phi_t}{p^+\phi_t+\mu_t-\phi_t}v(2+x-d) + \frac{\mu_t-\phi_t}{p^+\phi_t+\mu_t-\phi_t}\, v\left(\frac{3+\omega}{2}+x-d\right) & \text{if } (c) \end{cases} \\
&+\frac{\mu_t-\phi_t}{\mu_t} \times \begin{cases} v(1+\omega+x)+u_p-2g & \text{if } (a) \\ (1-p^+)v(1+\omega+x) & \\ \quad +p^+\left(\frac{\mu_t-\phi_t}{\mu_t}\, v\left(\frac{3+\omega}{2}+x-d\right) + \frac{\phi_t}{\mu_t}v(1+\omega+x-d)\right) & \text{if } (b) \\ \frac{p^+\phi_t}{p^+\phi_t+\mu_t-\phi_t}v\left(\frac{3+\omega}{2}+x-d\right) + \frac{\mu_t-\phi_t}{p^+\phi_t+\mu_t-\phi_t}v(1+\omega+x-d) & \text{if } (c) \end{cases}
\end{aligned}
$$

$$
\begin{aligned}
W^S_{pm}(\mu_t,\phi_t) &= v(2\omega) + (2-p)g + pb \\
W^S_{rf}(\mu_t,\phi_t) &= (1-p^+)v(2+x) + p^+v(2+x-d) + 2g \\
W^S_{pf}(\mu_t,\phi_t) &= \frac{1-\mu_t}{1-\phi_t}\left(v(2\omega)+(2-p)g+pb\right) \\
&+\frac{\mu_t-\phi_t}{1-\phi_t} \times \begin{cases} v(1+\omega+\omega x)+(2-p^+)g+p^+b & \text{if } (a) \\ p^+v(1+\omega+\omega x-d)+(1-p^+)v(1+\omega+\omega x)+2g & \text{if } (b) \\ v(1+\omega+\omega x-d)+2g & \text{if } (c) \end{cases}
\end{aligned}
$$

$W^S_{pm}(\mu_t,\phi_t)$ is unchanged. $W^S_{rm}(\mu_t,\phi_t)$ and $W^S_{rf}(\mu_t,\phi_t)$ take the additional resources x and the higher probability of divorce into account. Poor females ($W^S_{pf}(\mu_t,\phi_t)$) have the same indirect utility as before if married to poor males, but face a higher probability of divorce and have some additional resources ωx otherwise.

It is beyond the purpose of this Appendix to provide a complete characterization of the political equilibria with an endogenous p. It is however clear that poor males are now

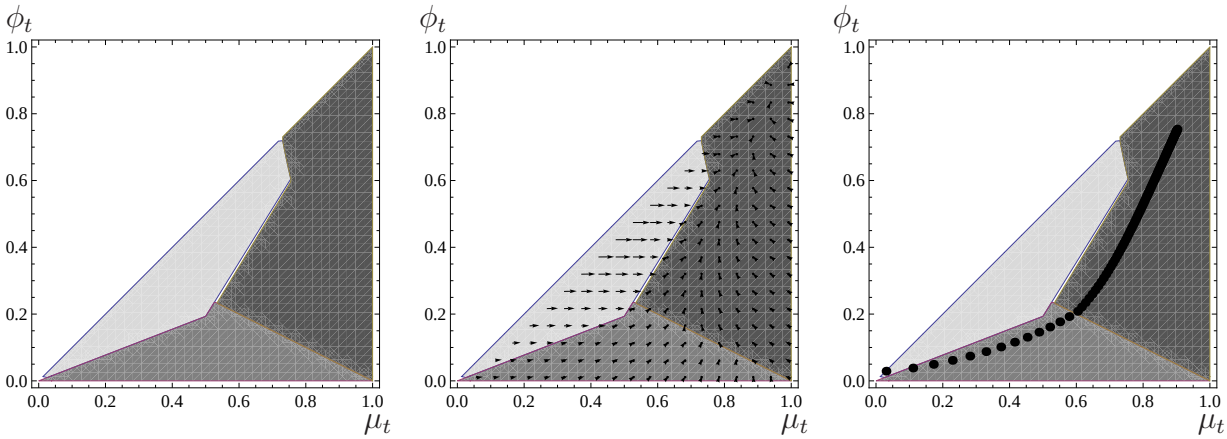


Figure 7: Dynamics with endogenous p: **P** (light gray), **M** (gray), **S** (darker gray)

indifferent between **M** and **S** as there is no social cost to **S** any more. The preferences of poor females are also changed: if p^+ is significantly larger than p, they always prefer **M** to **S**. Taking the numerical example of the main text and adding $p^+ = 1/2$ and $x = 0.2$, we can show that the dynamics driving the transition $\mathbf{P} \to \mathbf{M} \to \mathbf{S}$ are qualitatively unaltered. Figure 7 displays the results, and can be compared with Figure 7. Note, however, that **S** can only arise as a regime supported by a coalition of the rich against poor females (poor males are now indifferent between **M** and **S**).

5 Multiple Wives, Subperiods, and Income Types

In the main text, we have developed our theory of marriage institutions within a simplified $2 \times 2 \times 2$ framework, allowing for two subperiods, two income types, and polygynous households involving two wives. Here, we try to discuss whether our analysis can be generalized along each one of these dimensions. Note that each extension would introduce at least one additional parameter into the model: the marginal utility of a third relationship, the probability that the relationship turns bad in the third subperiod, and the relative incomes of males and females belonging to the third social class.

We show below that, when marrying more than two wives is allowed, rich males can take even more advantage from their relative scarcity by marrying more females. Polygynous households of different sizes may coexist, but political preferences remain as in the main model. Dealing with more than two subperiods makes the analytical treatment heavier, but preserves the main tradeoffs of the theory. Having three social classes, besides being less coherent with the evidence discussed in Section 2, renders the aggregation of individual preferences extremely complicated, and the dynamics, with four state variables instead of two, become more obscure. One can speculate, however, that an increase in the size of the richest class (or of the middle class if it is rich enough) drives the same results as the benchmark model.

5.1 More than Two Wives (when Polygyny is Allowed)

Suppose now that men can marry at most three wives under polygyny.[3] For simplicity, we assume that the jealousy cost does not depend of the number of co-wives. From the viewpoint of a polygynous husband, the expected marginal utility of a third (simultaneous) relationship is given by ζu_p, with $\zeta < z$.

As far as the temporary equilibrium is concerned, Proposition 1 can be modified as follows.[4]

Proposition 5 *Assume that the jealousy cost m satisfies*

$$m < \min\left\{v(2) - v\left(1+\omega\right), v\left(\frac{1+3\omega}{2}\right) - v\left(2\omega\right)\right\},$$

and preferences are such that

$$\zeta u_p > v(2) - v\left(\frac{1+3\omega}{2}\right).$$

If $\mu_t < 1/3$, in equilibrium we have $\phi_t/3$ polygynous households with 3 rich wives, $\mu_t - \phi_t/3$ polygynous households with 3 poor wives, $1 - 3\mu_t$ poor couples, and $2\mu_t$ poor single males.

If $1/3 \leq \mu_t < 1/3 + \phi_t/6$, we have $(2+\phi_t)/3 - 2\mu_t$ polygynous households with 3 rich wives, $(1-\phi_t)/3$ polygynous households with 3 poor wives, $3\mu_t - 1$ polygynous households with 2 rich wives, and $1 - \mu_t$ poor single males.

If $1/3 + \phi_t/6 \leq \mu_t < 1/2$, we have $\phi_t/2$ polygynous households with 2 rich wives, $1 - 2\mu_t$ polygynous households with 3 poor wives, $3\mu_t - 1 - \phi_t/2$ polygynous households with 2 poor wives, and $1 - \mu_t$ poor single males.

If $1/2 \leq \mu_t < (1+\phi_t)/2$, we have $(1 - 2\mu_t + \phi_t)/2$ polygynous households with 2 rich wives, $2\mu_t - 1$ rich couples, $(1-\phi_t)/2$ polygynous households with 2 poor wives, and $1 - \mu_t$ poor single males.

If $\mu_t \geq (1+\phi_t)/2$, we have ϕ_t rich couples, $1 - \mu_t$ polygynous households with 2 poor wives, $2\mu_t - 1 - \phi_t$ rich/poor couples, and $1 - \mu_t$ poor single males.

With respect to the temporary equilibrium described by Proposition 1, there are differences only for $\mu_t < 1/2$, when rich males can take even more advantage from their relative scarcity by marrying more females. In that case, polygynous households of different size may coexist.

If we look at political preferences, we see that there is no qualitative change with respect to Lemmas 4 - 7. In fact, polygyny remains the least preferred regime by rich females, and the most preferred by rich males unless μ_t becomes large enough (in which case, due to

[3] The analysis can be generalized to more than three wives.

[4] Proof available upon request.

their inability to marry multiple wives, they prefer serial monogamy). As far as poor males are concerned, monogamy is always their preferred option. Our alternative description of polygyny only implies that the threshold value of μ_t below which poor males prefer polygyny over serial monogamy becomes lower: since rich males are now able to marry up to three wives, instead of two, μ_t must be very low in order not to exhaust prospective wives. Finally, the preference ordering of poor females remains also unaffected, although their expected utility under polygyny changes; in fact, for low values of μ_t they are more likely to be part of a 3-wife household, and less likely to marry a poor husband monogamously.

5.2 More than Two Subperiods

Suppose now that the agents' lifetime is divided into three or more, instead of two, subperiods.

This kind of extension, which affects only the analysis of serial monogamy, would require us to specify different probabilities that a marriage goes bad: at the end of subperiod 1, at the end of subperiod 2, etc. (i.e. a kind of survival function for marriage). Although the model would become extremely difficult to handle – agents may even divorce twice, over their lifetime – the key mechanism is unaffected: individuals trade off the possibility to get rid of a bad match against the cost of divorce. The decision to divorce is influenced by the same variables as in our basic model: besides the divorce cost, the probability that the quality of their marriage deteriorates, and the utility loss they incur in such a case, agents will take into account the state of the economy, i.e. which partners are available on the (re)marriage market after divorce.

In terms of political preferences, it remains true that serial monogamy may emerge as an institution supported by either a coalition of the rich (when rich males prefer serial monogamy over polygyny, and the rich are the majority), or a coalition involving poor females (when μ_t is sufficiently high, i.e. when poor females do not fear divorce, since they have high odds to remarry a rich male).

5.3 More than Two Income Types

Suppose that we consider three, instead of two income types. As far as temporary equilibria are considered, the central mechanism of the model is preserved. The mechanics of family formation and the incentives faced by the agents are the same. Richer males tend to marry polygynously, and divorce remains too costly for the poor. However, determining the possible equilibrium assignments under polygyny and serial monogamy becomes more cumbersome (under monogamy, a simple assortative-matching pattern would prevail). Furthermore, aggregating individual preferences, with six groups instead of four, would be a major source of complication.

Concerning the dynamics of the model, the number of state variables would rise from two

to four. One can speculate that an increase in the size of the richest class (or of the middle class if it is rich enough) drives the same results as the benchmark model. Everything would however depend on the characteristics of the middle class: whether they are rich enough to marry polygynously and/or to pay the cost of divorce, and whether social mobility is easier from poor to middle, or from middle to upper class.