

# THE ECONOMICS OF WOMEN'S RIGHTS THE MARY PALEY AND ALFRED MARSHALL LECTURE

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## Abstract

Two centuries ago, in most countries around the world, women were unable to vote, had no say over their own children or property, and could not obtain a divorce. Women have gradually gained rights in many areas of life, and this legal expansion has been closely intertwined with economic development. We aim to understand the drivers behind these reforms. To this end, we distinguish between four types of women's rights—economic, political, labor, and body—and document their evolution over the past 50 years across countries. We summarize the political-economy mechanisms that link economic development to changes in women's rights and show empirically that these mechanisms account for a large share of the variation in women's rights across countries and over time. (JEL: D13, D72, E24, J12, J16, N4, N30, O10, O43)

Keywords: Women's Rights, Female Suffrage, Family Economics, Bargaining, Political Economy.

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## 1. Introduction

Two hundred years ago, a state of extreme inequality between the legal rights of women and men was the norm in most countries around the world. Political rights, where they existed, were usually reserved to men. In common law countries such as the United States and the United Kingdom, married women had no say over their own property or children, and no protection against domestic violence; the husband exclusively exerted all rights of the married couple. Elsewhere, fathers' control over

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Acknowledgments: We follow Pande and Roy (2021) who renamed the lecture to include Mary Paley Marshall, Alfred's wife and an accomplished economist at a time when women's presence in universities was far from the norm. We thank Elizabeth Boyle and Irem Ebetürk for kindly sharing their data. Our gratitude goes to Ursula Behresheim and Yasar Ceylan for excellent research assistance. We thank Graziella Bertocchi, Alice Evans, Rohini Pande, Todd Schoellman, and the editor Romain Wacziarg for helpful comments. Financial support from the German Research Foundation (through the CRC-TR-224 project A3 and Leibniz prize TE966/2-1) is gratefully acknowledged.

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their daughters extended into adulthood and lasted until marriage, when another man would gain legal control.

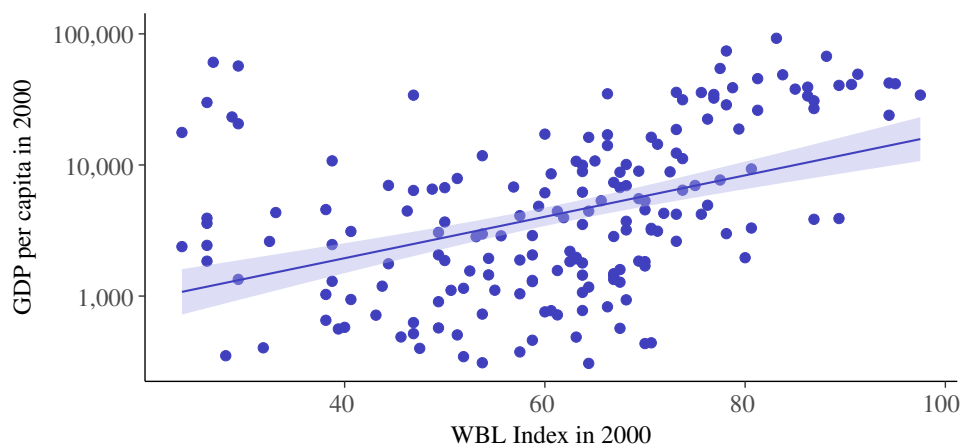


FIGURE 1. Women's Rights and Economic Development across Countries

Notes: We plot the Women, Business and the Law (WBL) Index (World Bank 2022a) as a measure of female empowerment against GDP per capita in constant 2015 US Dollars, where GDP per capita is on a log scale. The data for GDP per capita comes from the World Development Indicator database (see Appendix Table A.2). We include a linear regression of the WBL Index on log GDP per capita and show 90% confidence intervals.

In the time since, women's legal position has greatly improved in most countries. The starting point for this paper is the observation that expansions in women's rights have been highly correlated with overall economic development. Figure 1 plots an index of women's legal rights against GDP per capita in 2000, displaying a strong positive correlation between women's rights and development. The countries where women have the most rights (an index close to 100) have an income per capita above USD 10,000, while places where women have few rights (an index below 30) tend to be poor. A few exceptions of rich countries with a low women's rights score stand out; these are largely nations that owe their wealth to natural resources such as oil and thus have become rich without having gone through the usual development process.<sup>1</sup>

Despite much progress over the past two centuries, full equality between the sexes has yet to be achieved. The literature documents persistent gender gaps in a variety of outcomes such as education, employment, earnings, and wages (Goldin et al. 2006; Olivetti and Petrongolo 2016; Blau and Kahn 2017). Rather than outcomes, we focus here on gender gaps in formal legislation (de jure rights).<sup>2</sup> In most countries, women still do not possess the same legal rights as men. As shown in Figure 1, this gap is more pronounced in poor countries, though it also appears in rich countries. Table 1

1. The six countries in the upper left corner of Figure 1 are all located in the Middle East: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

2. Due to a lack of enforcement, legislation does not always translate directly into de facto rights, though it does provide an important first step in guaranteeing equal treatment of women and men.

provides several examples based on data from the year 2000. While women have the right to be elected in 97% of countries, there remain exceptions in certain high-income countries.<sup>3</sup> In 96% of all countries, women can sign contracts in the same way as men, but this is true in only 89% of low-income countries. In many places (a quarter of all countries), women still need their husband's consent to obtain a passport; this being a higher fraction for the low income countries. Women have the right to work the night shift in the same way as men in about 70% of all countries, a percentage that drops notably among the low income countries. Women can work in industrial jobs in the same way as men in only 41% of all countries, and in only 23% of low income countries. Legal protection against domestic violence exists in even fewer countries and not at all in low income countries.

TABLE 1. Examples of Women's Rights by Income

Right to ...	% of Countries by Income		
	All	Low	High
... be elected	96.7	100.0	88.9
... sign a contract in the same ways as a man	95.8	88.5	100.0
... obtain a passport in the same ways as a man	75.3	69.2	82.5
... work night shift the same way as a man	68.9	61.5	80.7
... work in an industrial job the same way as a man	41.1	23.1	45.6
... legal protection against domestic violence	24.2	0.0	45.6

Notes: We report the percentage of countries in which women have a certain right. The statistics are based on the year 2000. We use individual questions about women's rights and country income classifications from the Women, Business and the Law Database (World Bank 2022a). Information on the right of women to be elected comes from Paxton et al. (2008).

The expansion of women's rights has unfolded gradually over time. Starting in the nineteenth century, women began to gain basic economic rights in most of today's high-income countries, such as the right to own property. Political rights, most importantly the right to vote, came next, introduced in many high-income countries in the first half of the twentieth century. More recently, laws relating to equality in the labor market have come into existence.<sup>4</sup> Still in process are women's rights over their own bodies, such as protections from domestic violence and marital rape.

The goal of this paper is to understand the political economy of women's rights. What causes reforms? Is there a direct link between economic development and expansions of women's rights or is the correlation between the two accidental? To what extent can economic analyses contribute to understanding these issues?

Understanding the drivers of reforms necessitates study of the incentives of individual voters or politicians to support them. Doing so sheds light on why certain

3. Namely, the same oil-rich countries mentioned in Footnote 1.

4. See also Hyland et al. (2020) who document women's rights relative to the labor market over the period of 1970–2020 in 190 countries.

rights were introduced at particular points in time, why they correlate with economic changes, and why women in some countries still lack many rights. While there is a sizeable literature on the consequences of expanding rights to women, much less research has investigated the origins of these rights. In addition to elucidating the drivers of reforms and specifically the role of economic forces, we aim to identify the main open questions that beg further attention.

In political-economy models of reform, political preferences are based on individual preferences: voters and politicians favor or oppose particular reforms based on how the reforms would change outcomes that they or their family members care about. A possible alternative view is that the extension of rights to women is simply another incarnation of a broad expansion of rights—first from the elites to the masses, from the wealthy to poor, and later to various minorities and even animals—driven by other forces like changes in culture and religious doctrine or a general enlightenment and better awareness of the needs of others. In part, our goal here is to assess just how powerful economic theories of political change are relative to such alternatives. One argument in favor of a major role for economic mechanisms in expansions of women's rights is that women are linked to men in ways that other groups are not. Men are fathers, husbands, and sons of women and are thus directly and economically connected to them. In contrast, many people may never have direct contact with members of groups whose rights are at stake in other reforms.

We begin this paper with a historical description of the expansion of women's rights in the United States. By highlighting several influential laws and landmark court decisions, we illustrate how the focus of legal change has shifted over time, first from economic to political rights, then to labor market rights, and most recently to body rights.

We subsequently present a theoretical framework that highlights four important economic channels for political-economy models of changes in women's rights. The *bargaining power channel* concerns the effect that rights have on the sharing of resources within any given family, implying that women should generally be in favor and men against women's rights. The *parental altruism channel* refers to the idea that fathers care about their children and women's rights would thus benefit men directly through the effect on their daughters, but also indirectly, as women's rights may increase investments in children. The *income channel* reflects the notion that more women's rights can in some circumstances increase total resources (for example, if an agency problem is solved), which can in turn benefit men. Finally, the *public policy channel* relates to the idea that including women in policy-making can alter the chosen policies. We explain the importance of these four channels in various episodes of expansion in women's rights in the United States. In doing so, we also discuss the existing theories on the topic.

We then conduct an empirical analysis of women's rights across countries during the more recent period of 1970–2021. We construct different indices of women's rights related to the four areas: economics, politics, labor, and body. Using cross-country panel data for 190 countries, we regress each rights indicator on several economic and cultural variables. We find that overall economic development, as proxied by GDP

per capita, is positively correlated with each of these aspects of women's rights.<sup>5</sup> However, the correlation with GDP per capita becomes much smaller or disappears once we control for specific measures—namely the total fertility rate and women's labor force participation—that proxy for the parental altruism and income channels for changes in women's rights. These specific variables correlate with all aspects of women's rights and account for a substantial share of cross-country variation, and are particularly relevant for economic and labor rights. Yet, even for body rights, a considerable portion of cross-country variation can be accounted for by differences in economic variables, with the fertility rate playing the largest role. To explore the role of cultural factors that may work independently of economic channels, we alternatively include country fixed effects and control for religion variables. In these specifications, the economic channels continue to display a robust correlation with women's rights. Though religion variables appear to play a more limited role, in some cases they diminish the positive impact of economic development on legal reform. Overall, at least at the level of correlations, there is strong support for economic mechanisms, which, perhaps unsurprisingly, are particularly powerful in accounting for variation in economic and labor rights.

Our results suggest fruitful directions for future research. While our cross-country empirical analysis is suggestive, clearly there is much scope for work that more directly identifies the impact of specific channels on legal reform. On the modeling side, the majority of the existing literature focuses on historical reforms in high-income countries, but few studies use formal models of political change to address variation in women's rights in the cross-section of countries today, including low-income countries.

### ***1.1. Related Literature***

[Doepke et al. \(2012\)](#) provide a survey of earlier economic literature on women's rights that focuses on the mutual interaction of economic and legal changes. Theories on the expansion of women's rights have largely focused on economic rights in the United States. [Geddes and Lueck \(2002\)](#) relate the expansion of women's economic rights to women's role in the labor market, while [Doepke and Tertilt \(2009\)](#) and [Fernández \(2014\)](#) develop theories relating these same rights to women's role in educating children. A number of papers empirically analyze the consequences of the expansion of women's economic rights in the United States ([Khan 1996](#); [Geddes et al. 2012](#); [Alshaikhmubarak et al. 2019](#); [Hazan et al. 2019](#); [Hazan et al. 2021](#)).

[Bertocchi \(2011\)](#) develops a theory of the extension of female suffrage. [Jones \(1991\)](#) and [Braun and Kvasnicka \(2013\)](#) empirically examine the reasons behind the expansion of suffrage in the United States, while [Teele \(2018\)](#) documents the role of

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5. In principle, of course, the causality could also run in the opposite direction. While evidence on specific rights leading to more investments and hence higher incomes exists (see [Duflo 2012](#), [Doepke et al. 2012](#) and [Doepke and Tertilt 2016](#) for discussions), it is unlikely that much of the income growth since industrialization can be attributed to the expansion of women's rights.

the suffrage movement in driving reform in the United States, France, and the United Kingdom. Other papers assess the impact of extending suffrage to women on outcomes such as government spending in the United States (Lott and Kenny 1999; Miller 2008), Europe (Aidt and Dallal 2008), and Switzerland (Abrams and Settle 1999; Funk and Gathmann 2014; Slotwinski and Stutzer 2022).

Theories of women's expanding political rights also relate to an economic literature on the general spread of political rights. As early as 1959, Lipset (1959) argued that economic development is a prerequisite for democracy. The hypothesis that development leads to democratization has been confirmed empirically (Barro 1999; Murin and Wacziarg 2014) and modelled theoretically. Acemoglu and Robinson (2000) and Lizzeri and Persico (2004), for example, build political-economy models of the expansion of rights from the elites to the masses.

A large number of studies analyze the impact of new laws related to women's rights in the labor market (Landes 1980; Zabalza and Tzannatos 1985; Goldin 1988b; Marchingiglio and Poyker 2021; Bailey et al. 2022), though few examine the origins of these laws. In an early contribution, Huber (1976) discusses the importance of technical change for the women's movement, specifically in relationship with labor laws. Hunt and Rubin (1980) argue that labor market rights are related to the number of single women in the economy who have the most to gain from such legislation and confirm this hypothesis empirically in U.S. cross-state data. Goldin (1988a) finds that marriage bars were associated with modern personnel practices and argues that they disappeared when the cost of limiting female labor supply became too high in the 1950s. In a previous Marshall Lecture, Pande and Roy (2021) document a strong correlation between labor law equality and social norms about working women. To our knowledge, Doepke et al. (2021) offer the only formal theory of the political economy of labor laws affecting women.

Work on women's rights in other fields such as sociology and political science has often emphasized non-economic forces. For example, Htun and Weldon (2018) highlight the role of feminist movements in bringing about change in dimensions such as workplace equality. They also argue that a changing relationship between religious bodies and the state underlies reform in areas such as family law, which used to be regulated by religious institutions. Most studies on the origins of female body rights have been conducted outside of economics. Within sociology, Boyle et al. (2015a) assess the liberalization of abortion policies throughout the late 20th century around the world. The authors find that the influence of modern science and medicine and the number of women in parliament have contributed to liberalizing abortion policies. Catholicism, on the other hand, is negatively related to abortion liberalization. Ebetürk (2021a) looks specifically at child marriage,<sup>6</sup> and finds that female legislators are an important driver of bans on this practice while religion (in this case, Islam) slows down reforms. Other scholars examine the consequences of body law reforms.

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6. While laws against child marriage in theory equally affect men and women, in practice they mostly protect teenage girls from being married without their consent, and are thus considered here as an important women's body right.

Frank et al. (2009) look at rape law reforms. Godefroy (2019) empirically analyzes a reduction in women's rights related to sexual behavior in Nigeria, while Tertilt (2006) theoretically explores the impact of giving women property rights over their own body in a polygynous society.

Changes in women's legal rights are related to shifts in social norms about gender roles.<sup>7</sup> The relationship between changes in social norms and those in legal rights is complex. On the one hand, legal changes shape expectations and can hence modify social norms over time. On the other hand, shifts in individual attitudes must necessarily precede legal changes since a political majority is needed for reform to emerge. We argue that it is often changing economic conditions that drive both changes in social norms and, eventually, in formal rights. For example, following Boserup (1970), Alesina et al. (2013) relate traditional gender norms to plough agriculture, while Becker (2019) connects the practice of female genital cutting to the desire to reduce paternity uncertainty in pastoral societies. While some of these practices and norms persist through time despite the disappearance of their original cause, many do not. Cheung (1972) relates the practice of footbinding in China to the desire to establish property rights over girls and wives and Bossen et al. (2011) argue that the practice disappeared when the arrival of commercial cloths made weaving and spinning at home unprofitable and it was no longer necessary to keep girls at home. Fernández-Villaverde et al. (2014) suggest that changes in contraceptive technology affected social norms about premarital sex. In last year's Marshall lecture, Pande and Roy (2021) contend that the persistence of social norms prescribing separate spheres for women and men is, at least in part, connected to the rents associated with preferential access to well-paying jobs. Social norms are not simply the sum of individual attitudes, rather they are beliefs about perceived attitudes of others. To this regard, Bursztyn et al. (2020) demonstrate the effect that misperceptions of others' attitudes can have. In a field experiment in Saudi Arabia, the authors find that more women start to work in a for-pay job if informed that the true attitudes in society are actually more favorable towards working women than they had previously thought.

## 2. Expansion of Women's Rights in the United States

Today, men and women in the United States are close to equal in terms of legal rights. While substantial gender differences remain in outcomes (e.g., lower labor force participation for women and a sizeable gender wage gap), few of these differences originate from unequal rights. This has not always been the case, particularly for married women. Until the early 19th century, women lost their separate legal identity upon getting married, when the legal rights of husband and wife were merged and subsequently exercised solely by the husband. As a consequence, married women

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7. See Jayachandran (2015) and Giuliano (2022) for two surveys, the former discussing the roots of gender inequality specifically in developing countries, the latter focusing on the historical origins of gender norms.

could not sign a contract, own property, or decide how to spend family money. They typically could not initiate divorce or gain child custody in the event of a separation. The legal position of single women was somewhat better, though they still had fewer rights than men (e.g., they could not vote).

The legal position of American women began to change in the mid-19th century. As illustrated in Figure 2, the expansion of women's rights occurred in four main phases, each revolving around a distinct class of rights. First, over the second half of the 19th century, women obtained basic economic rights. Second, in the early 20th century, women were granted political rights. Much later, in the 1960s and 1970s, laws regulating the legal equality of women in the labor market were passed. Finally, starting in the 1970s and still ongoing, women's rights related to their own bodies have substantially improved.

To illustrate the gradual expansion of women's rights, in what follows we describe a series of key law changes reflective of each successive phase of legal reform. This is not meant to be exhaustive, rather the aim is to underline the fact that distinct types of women's rights were passed at different points in time throughout U.S. history.<sup>8</sup>

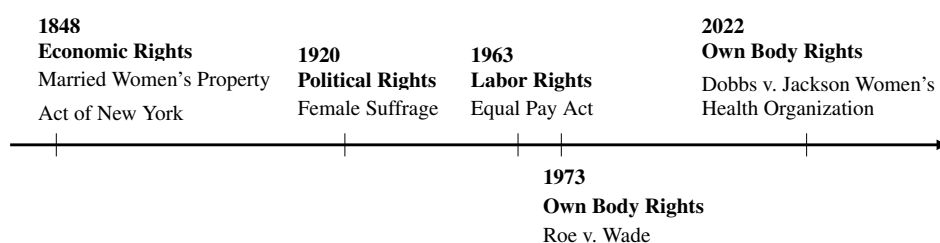


FIGURE 2. Influential Laws and Landmark Rulings that Impacted Women's Rights

The first type of rights women obtained consisted of basic economic rights, such as that to hold property.<sup>9</sup> In 1839, Mississippi was the first state to grant married women limited property rights. The more comprehensive Married Women's Property Act of New York was passed in 1848, and quickly became the model to which other states looked. Additional legal developments during the period of 1850-1900 included earnings laws, sole trader laws, child custody reforms, and the right to initiate a divorce. All these rights were extended to women at a time when only men could vote.

In a second phase, women gained political rights. A few states, mostly in the West, had already passed state suffrage laws in the late 19th century. However, at the federal

8. For more comprehensive reviews of the U.S. history of women's rights, see Hecker (1971), Salmon (1986), Yalom (2001), and the timeline in Doepke et al. (2012). More recent developments are discussed in McBride and Parr (2010). For abortion law specifically, see Baker (2022).

9. Geddes and Tennyson (2013) provide excellent data on the passage of married women's property and earnings acts across U.S. states.



level, universal female suffrage was not introduced until 1920, when the Nineteenth Amendment to the U.S. Constitution came into effect.

During the third phase (i.e., the 1960s and 70s), important law changes granted women equality in the labor market. Previously, “marriage bars” could legally exclude married women from working in certain professions. These were widely applied, a notable example being school teachers: in most states, a woman school teacher had to resign upon marriage. In fact, during the first half of the 20th century, many new laws were introduced that put restrictions specifically on female workers: on night work, maximum hours, minimum wage, and even on seating, which required employers to provide a chair for each female employee. These asymmetries between male and female workers came to an end in the 1960s. With the Equal Pay Act of 1963 it became illegal for employers to differently compensate women and men for the same work and Title VII of the Civil Rights Act of 1964 eliminated most other labor market asymmetries between female and male employees. The 1960s and 1970s were also characterized by debates over the Equal Rights Amendment, which gained increasing support with the rise of the women's movement in the United States. The amendment proposed a change to the U.S. Constitution that would guarantee equal rights to U.S. citizens independent of their sex and was first introduced in the 1920s. While passed by the senate in 1972, it was never ratified nationally. Eventually, however, roughly half of the states passed state-level Equal Rights Amendments (Wheaton 2022).

Lastly, beginning in the 1970s and ongoing, a series of laws related to women's own bodies have been passed.<sup>10</sup> In 1973, the U.S. Supreme Court ruled in the landmark *Roe v Wade* case that the right to have an abortion was a fundamental right to privacy and thus a constitutional right. More than fifty years later, in 2022, the Supreme Court overturned this ruling in *Dobbs v Jackson Women's Health Organization*, and several states subsequently made abortion illegal. This example reflects the fact that women's rights have not always progressed in a linear fashion: reversals do happen.<sup>11</sup> Certainly, the right to physical integrity is not limited to the issue of abortion and includes many other dimensions. Throughout the late 20th century, many laws were introduced that made marital rape, teenage marriage, domestic violence, and sexual harassment all illegal and punishable by law.

### 3. Economic Theories for the Expansion of Women's Rights

What economic theories might best help explain the spread, and occasional reversal, of women's rights? By economic theories, we mean explanations that employ an economic model of human behavior, wherein people's political preferences are based

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10. While one could argue that female body rights are distinct from other equality laws in that they apply only to women, we contend that such laws guarantee equality in protecting physical integrity while recognizing physical differences between the sexes.

11. Brooks et al. (2022) argue that the abortion right reversal is specific to the U.S. context and will not halt reforms in other countries.

on their individual preferences over various outcomes that directly affect them. Importantly, these outcomes may extend beyond a narrower delimitation of economic variables such as income, wages, and prices, to also include concepts such as altruistic concern for one's children. Broadly, an economic explanation for reforms in women's rights would argue that women's rights change individuals' constraints, choice sets, and outcomes. These potential changes, in turn, determine political preferences, which through a political mechanism (e.g., voting) then generate a political outcome.

We view such economic explanations as complementing and competing with alternative explanations that are not based on the effects of women's rights on individual outcomes. For example, a religious belief of "what is right" independent of one's own life would fall into this category; so too would a "spread of enlightenment" view where people, over time, change their abstract conceptions of who does or does not deserve certain rights, again independently of their personal lives. Of course, it is possible to represent such explanations using the economic tool set; for example, by hard-wiring religious or other preferences into the utility function. The key distinction here, however, is that what we term economic explanations hinge on the effects that women's rights have on the individual outcomes that people care about.

Put differently, we aim to identify who wins and who loses from the introduction of specific rights, based on their individual preferences. In this view, women's rights will be introduced if there is a winning coalition that stands to gain from these rights—our task is to identify this coalition and what motivates them. Political change can occur when economic shifts (such as an increase in the return to human capital) alter the political tradeoff faced by pivotal groups, or alternatively when there are changes in the size of groups who favor and oppose reform (such as an increase in the number of single versus married individuals).

To build such an economic model of the political economy of women's rights, we must start by specifying people's preferences. Here, we present a simple setup to illustrate the main mechanisms that have been used in the literature. In this setup, the lifetime utility of an individual of gender  $g \in \{f, m\}$  can be represented as:

$$V_g(h_f, h_m, X) = u_g(c_g, 1 - n_g, P) + \gamma_g V_C(h_C, X'). \quad (1)$$

$V_g$  denotes total lifetime utility as a function of the individual state variables  $h_f$ ,  $h_m$  (human capital of wife and husband) and the aggregate state variable  $X$ , which captures the current legal regime. For a single individual, only own human capital would enter as a state variable. The period utility function depends on individual consumption  $c_g$ , leisure  $1 - n_g$  ( $n_g$  is labor supply), and an aggregate public policy variable  $P$ . People also care about the welfare of their children;  $\gamma_g$  is accordingly the degree of parental altruism, and  $V_C(h_C, X')$  is the lifetime utility of one's children, which depends on their human capital  $h_C$  and the future legal regime  $X'$  to which the children will be subject.

Starting from this specification of preferences, we now illustrate the main channels that have been used in the literature to link women's rights to individual preferences and, ultimately, political preferences. We call these the *bargaining power channel*, the *parental altruism channel*, the *income channel*, and the *public policy channel*.

### 3.1. Bargaining Power Channel

The most direct effect of expansions of women's rights is the broadening of women's opportunities, which may come at least in part at the expense of men's opportunities. From this perspective, women should be in favor of expanding women's rights, and men should be against. A common way of modeling such a conflict between women and men is to allow for a *bargaining power channel*, whereby women's rights help determine the allocation of resources within marriage. To illustrate this channel, consider a population of married couples with preferences given by (1) where the determination of consumption  $c_f$  and  $c_m$  can be written as follows:

$$\begin{aligned} c_f &= S_f(h_f, h_m, X)I(h_f, h_m), \\ c_m &= (1 - S_f(h_f, h_m, X))I(h_f, h_m). \end{aligned}$$

Here  $I(h_f, h_m)$  represents the income earned by a couple with human capital  $h_f, h_m$ , and  $S_f(h_f, h_m, X)$  is the share of consumption going to the wife given the individual state variables and the political regime  $X$ . If a larger  $X$  represents more rights for women and if women's share in marital consumption is increasing in rights,  $\partial S_f(h_f, h_m, X)/\partial X > 0$ , women are going to benefit from expansions of women's rights, and men are going to lose. Such a relationship from rights to bargaining power can be formalized, for instance through marital bargaining subject to outside options that depend in part on legal rights, like those related to divorce and marital property laws. Models along these lines have been widely used in the family economics literature, going back at least to [Manser and Brown \(1980\)](#). [Voena \(2015\)](#) and [Foerster \(2021\)](#), for example, analyze how laws specifying the division of property and alimony payments upon divorce affect consumption and welfare of spouses in marriage. These models have found empirical support ([Stevenson and Wolfers 2006](#); [Mazzocco 2007](#); [Lise and Yamada 2019](#)).

The strength of the bargaining power channel may depend on the specific right at stake. It is, for example, more likely to be important for laws that specifically address the rights of married women; although laws that shift, say, the labor market opportunities of single women could still matter by shaping outside options. Moreover, there is heterogeneity in people's exposure to the bargaining power channel. For instance, this channel will matter little for singles who expect to remain single for a long time or permanently. A change in household composition, such as the increase in the share of single households observed in many countries, could therefore influence the role of this channel.

A bargaining power channel is present in a number of formal studies of expansions of women's rights, though it is usually not the only channel. Indeed, under this channel, only women would support women's rights, which would contradict the fact that many women's rights were introduced or expanded before women had the right to vote. More generally, political support for different forms of women's rights does not usually divide sharply along gender lines. The literature has therefore identified additional channels where support or opposition to rights expansions does not necessarily depend solely on one's own gender. As according to the bargaining

channel men only stand to lose from introducing women's rights, at least one of these additional channels must be operative for initial reforms to happen.

### 3.2. Parental Altruism Channel

One such additional channel is what we term the *parental altruism channel*. Parents care about their children, and reforms to women's rights can have repercussions for daughters and sons that, in turn, translate into political preferences. In the utility function (1), parental altruism is represented through the children's utility  $V_C(h_C, X')$ , which enters parental utility with weight  $\gamma_g$ . The children's utility is an average of both daughters' and sons' future utility; if there are equal numbers of daughters and sons, we have:

$$V_C(h_C, X') = \frac{1}{2} (V_f(h'_f, X') + V_m(h'_m, X')).$$

If women's rights solely had distributional implications (i.e., making women better off and men worse off), parental altruism would already imply a preference for some degree of women's rights, because with curvature in utility parents would like to reduce inequality between their sons and daughters. This motive for supporting women's rights is further strengthened if women's rights also affect the human capital of children. It is often argued that women are more altruistic towards children than are men,  $\gamma_f > \gamma_m$ .<sup>12</sup> In models of household bargaining, this implies that children's human capital is increasing in women's bargaining power, and accordingly in the extent of women's rights  $X$ :

$$h_C = F(h_f, h_m, X),$$

with  $\partial F(h_f, h_m, X)/\partial X > 0$ .

The parental altruism channel lies at the heart of the model proposed by [Doepke and Tertilt \(2009\)](#), which analyzes the introduction of women's economic rights in the nineteenth century. As described in Section 2, a notable feature of the reforms to marital property, divorce, and child custody laws in both the United States and the United Kingdom during this period is that they were introduced long before women gained the right to vote. A political-economy explanation of these changes must therefore necessarily focus on the preferences of men, who as voters and politicians brought about these changes. In the model of [Doepke and Tertilt \(2009\)](#), the bargaining power channel pushes men to oppose women's rights, as they imply a loss of bargaining power in their own marriage. Simultaneously, however, the parental altruism channel provides a rationale to support women's rights. The political outcome hinges on the relative strength of the two channels. The power of the parental altruism channel depends crucially on the importance of human capital investment for children's future welfare. The authors argue that, until the early nineteenth

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12. This contention can be supported by arguments from evolutionary biology: men face a higher paternity uncertainty than women, while women are more constrained in their reproductive capacity. There is a sizeable empirical literature that suggests that women place more importance on children than do men, although this evidence is not unambiguous (see [Doepke and Tertilt 2019](#)).

century, human capital was of limited importance and support for women's rights consequently remained low. Subsequently, however, the demand for human capital grew substantially, leading to the well-documented advent of mass education during the second half of the nineteenth century. [Doepke and Tertilt](#) show that this same technological shift increased the strength of the parental altruism channel, ultimately leading to political reforms. In line with the tradeoff between these two channels, they document that during this historical period, political debate over the introduction of women's rights focused on the tradeoff between the rights of husbands and the implications of unchecked rights for men for the welfare of children. Thus, it was ultimately the transition from an agricultural society to a modern knowledge-based economy that led to the expansion of economic rights at a time when women had few other rights.

[Fernández \(2014\)](#) similarly develops a model that explores the implications of a tradeoff between the bargaining power channel and the parental altruism channel for the introduction of women's economic rights. She looks specifically at men's desire to be able to transfer bequests to their daughters, which requires women to have property rights. In a poor economy in which there is little capital and bequests are consequently small, this motive is not strong enough to outweigh the bargaining power channel. However, in a growing economy, the parental altruism channel becomes more important as capital stock rises and fertility rates fall, and ultimately men agree to expand women's rights. [Fernández](#) finds support for some predictions of this theory in cross-state data in the United States. [Hazan et al. \(2021\)](#) provide further empirical support for the theories advanced by [Doepke and Tertilt \(2009\)](#) and [Fernández \(2014\)](#), showing that the expansion of married women's property rights in the United States led to an increase in education and a decline in fertility.

A general implication of the parental altruism channel is that support for women's rights should be increasing in one's number of daughters. [Washington \(2008\)](#) finds empirical support to this regard, showing that politicians with more daughters are more likely to vote liberally on women's issues and specifically support reproductive rights. [Oswald and Powdthavee \(2010\)](#) observes that having daughters makes voters more likely to support left-wing parties. Conversely, in the aggregate the parental altruism channel should be less powerful if there are many childless individuals.

### 3.3. *Income Channel*

The models of [Doepke and Tertilt \(2009\)](#) and [Fernández \(2014\)](#) focus on intra-household bargaining and on investments in children, ignoring women's participation in the labor market. This is because in the nineteenth and well into the twentieth century, married women's labor force participation rates were quite low, suggesting that it was largely other factors that drove reforms in married women's rights during this period. In more recent times, characterized by much higher female labor force participation, women's work is essential to laws affecting the labor market and, more generally, for reforms. This shift motivates the income channel, which hinges on general-equilibrium implications of women's labor force participation.

Consider a population with preferences given by (1) where consumption for single individuals of gender  $g \in \{f, m\}$  is given by  $I(h_g, X)$  and for married individuals we have:

$$\begin{aligned} c_f &= S_f(h_f, h_m, X)I(h_f, h_m, X) \\ c_m &= (1 - S_f(h_f, h_m, X))I(h_f, h_m, X). \end{aligned}$$

As in Section 3.1, we allow that the legal regime  $X$  affects bargaining power within marriage. The new angle is that now income  $I(h_g, X)$  for singles and  $I(h_f, h_m, X)$  for couples also depends on women's rights  $X$ . The focus here is on rights that affect women's ability to work, either by directly influencing the regulation of women's labor (such as marriage bars, overtime restrictions, and occupational limitations) or by affecting their incentive to work (for example, through giving them control over their own earnings). The dependency of income on  $X$  captures two different mechanisms. First, there is a direct impact of changes in rights  $X$  on the income of women who respond to the change by working more or by working for higher wages. If women's labor rights are expanded, this direct effect is generally positive and will lead women (and their husbands) who directly benefit from the legal change to support reform.

A second, indirect effect occurs because the expansion of women's labor supply through the direct effect changes the general equilibrium wage structure. Existing workers of either gender who compete with women who would enter after reforms in the labor market would see a reduction in earnings, as the expansion in the supply of their skill type drives down relative wages. Conversely, workers whose labor supply is complementary to that of entering women would see higher wages.

Broadly, support for the expansion of women's rights based on the income channel depends on two factors: (i) the substitutability of one's own labor with that of women who would enter the labor market and (ii) one's own initial labor supply and that of one's spouse. Support for or opposition to women's rights will thus not primarily depend on one's own gender. Women who are already working may be opposed to more women entering, as this would lower their wages, just like unions often oppose more competition for their own workers. Likewise, women who already decided not to work no matter what (say, to focus on raising their children) would oppose expanded labor rights for women if their husbands compete with women in the labor market. Conversely, men whose labor is complementary to that of women and married men whose spouse would benefit from higher earnings opportunities would support reform.

The income channel is central to the analysis of [Geddes and Lueck \(2002\)](#), who study the expansion of women's economic rights in the United States. They argue that, on the one hand, if women have no rights, husbands choose the time allocation of their wives but face an enforcement problem (the wife can shirk into leisure), which reduces women's labor supply and hence family income (the income channel). On the other hand, men get a larger share of household consumption (the bargaining power channel) when women have no rights. If there is an increase in the return to women's market work, the desire to raise family income out-weighs the distributional motive and men start to support granting more rights to women. One implication of this theory is that women's economic rights should increase the incentive to invest in

girls' human capital. [Geddes et al. \(2012\)](#) find support for this argument, showing that the expansion of women's economic rights increased girl's school attendance relative to boys. The income channel is also related to work by [Khan \(1996\)](#) who finds that greater property rights stimulated female patenting and commercial activity and [Hazan et al. \(2019\)](#) who show that those same rights led households to shift their portfolios towards financial assets and more rapid industrialization. The authors argue that the reason men extended these rights to women was precisely because it would increase overall income through an improved allocation of capital.

[Doepke et al. \(2021\)](#) use a political-economy model to better understand the rise of regulations that limited women's labor rights in the United States (including overtime restrictions and marriage bars) as well as their abandonment later on. When restrictions were introduced between 1880 and 1940, women entered the labor force in larger numbers, but relatively few married women were working. The authors argue that as a result, there was a broad coalition in favor of restricting women's work that included single men competing with women in the labor market, married men whose own wives were not working, and non-working wives who were concerned about competition for their husbands. The coalition in favor of restricting women's labor began to shrink when rising returns to working drew more married women into the labor market, which implied that both these married women and their husbands stood to gain from removing restrictions. Therefore, the income channel is key for understanding reforms to labor rights in the mid-20th century. [Hunt and Rubin \(1980\)](#) argue instead that the increase in the number of single women played an important role in the abandoning of such discrimination as they stood most to gain. They find some support for this argument in U.S. cross-state data. Of course, both forces may have operated simultaneously to create a coalition of single women and dual-earner couples in favor of labor market reforms.

### 3.4. Public Policy Channel

The channels analyzed thus far concern legal changes that have a direct impact on people's economic lives, for example by changing property or labor law. The introduction of women's suffrage differs in that this reform did not impose any immediate modification of the rules and constraints that affect families and individuals. Rather, it changed future political outcomes by altering the makeup of the electorate. If women's political preferences and voting behavior were identical to men, this would have no direct effects at all, at least from the perspective of our choice-based economic analysis. In our framework, political preferences over women's political rights must therefore necessarily derive from differences in political preferences between women and men and what these imply for future political outcomes.

In the utility function (1), general preferences over political outcomes are captured by the argument  $P$  in the period utility function  $u_g(c_g, 1 - n_g, P)$ . Extending political rights to women, once again denoted by the political state variable  $X$ , changes the composition of the electorate and hence the process that determines  $P$ , so that we can

write  $P = F(X)$ . Political preferences for extending suffrage to women then depend simply on how aligned a given voter's political preferences are with women's political preferences. If we let  $X = 1$  denote women's suffrage and  $X = 0$  the regime where only men vote, an individual will be in favor of women's suffrage if they prefer the public policy  $\tilde{P} = F(1)$  over the status-quo policy  $P = F(0)$ .<sup>13</sup>

Once again, political preferences for extending rights to women may not necessarily depend on gender. In the polar case where all men are identical, they would not support female suffrage. When there is variation in political preferences, men whose preferences are more aligned with those of women will support their right to vote. Conversely, women whose preferences are more in line with those of men than with those of other women would oppose female suffrage.

To provide content to the public policy channel, it is necessary to know how women's and men's political preferences differ in the data. A sizeable literature documents the effects of female representation on government spending. [Lott and Kenny \(1999\)](#), for example, show that female suffrage in the United States increased government spending, while [Miller \(2008\)](#) more specifically documents that this reform raised public health spending and led to a decline in infant mortality. [Chattopadhyay and Duflo \(2004\)](#) find that female leadership translates to greater investments in infrastructure that is relevant to the needs of women. There is also empirical evidence that women's representation in government councils increased spending on childcare and education in Sweden ([Svaleryd 2009](#)).

[Bertocchi \(2011\)](#) develops a formal theory of women's enfranchisement that builds on the public policy channel. In her model, there is a cost of keeping women disenfranchised, which could represent the discord between genders resulting from disenfranchisement or a cultural preference for more equality. At the same time, women have a higher preference for public-good spending and a higher preferred tax rate than men. As long as the gap in preferred policies between women and men is large, men withhold the right to vote from women. Over time, however, economic growth diminishes the relative return to physical strength (of which men have more), thereby lowering the gender wage gap, which in turn narrows the divide between women's and men's preferred policies. When the preferred tax rates of women and men are sufficiently close, the male median voter prefers to extend suffrage to women.

In line with [Bertocchi's](#) hypothesis that relative wages affect policy preferences, [Edlund and Pande \(2002\)](#) argue that changes in women's and men's relative income have driven recent political shifts in the United States. In the early 1980s, a political gender gap began to emerge whereby more women than men favor the Democratic party. The authors link this shift to declining marriage and rising divorce rates, which they argue has made women relatively poorer and moved their policy preferences to the left.

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13. There could be additional effects through the impact of  $X$  on children's utility; here, we focus on the case in which future policy  $X'$  is held fixed and only women's suffrage in the current period is in question.



### 3.5. Summary of Theories of Women's Rights

In the above sections, we described the main channels underlying changes in women's economic rights that have been explored within the broad framework of economic theories of political change. Although this literature has grown in recent years, the focus has largely been on specific historical episodes, leaving a number of open questions. Table 2 summarizes the topics that have to date been addressed and where gaps remain. Notably, many of the studies that include formal models of historical changes in women's rights refer to the United States and (to a lesser extent) other high-income countries such as the United Kingdom. Little to no work explores the ability of such models to account for heterogeneity in women's rights in the entire cross-section of countries. Many reforms have occurred in lower-income countries in recent decades, and it remains to be seen whether the existing theories can explain these shifts in low-income countries as well. There is also a lack of models that address changes in women's body rights, which include distinct aspects such as protection from domestic violence and abortion rights. This is despite the fact that the empirical literature documents wide-ranging implications of body rights for women, from future career prospects to the labor market more generally (see, for example, [Goldin and Katz 2002](#); [Bailey 2006](#); [Aizer 2010](#); [Myers 2017](#)). Expanding formal economic modeling to such rights would be a promising direction for future research.

TABLE 2. Existing Economic Theories about the Expansion of Women's Rights

Type of Right	Historical Reforms	Cross-Section of Countries Today
Economic	<a href="#">Geddes and Lueck (2002)</a> , <a href="#">Doepke and Tertilt (2009)</a> , <a href="#">Fernández (2014)</a>	?
Political	<a href="#">Jones (1991)</a> , <a href="#">Bertocchi (2011)</a> , <a href="#">Braun and Kvasnicka (2013)</a>	?
Labor	<a href="#">Hunt and Rubin (1980)</a> , <a href="#">Doepke et al. (2021)</a>	?
Own Body	?	Papers in Sociology, e.g., <a href="#">Boyle et al. (2015a)</a> , <a href="#">Ebetürk (2021a)</a>

Notes: The table summarizes economic theories on the historical expansion of women's rights (largely based on the U.S. experience) and in the cross-section of countries, separately for each of the four types of rights. The question marks indicate gaps in the literature.

Beyond extending research to these underexplored areas, there are two other important directions future research might take. One consists of linking economic models of political change to empirical evidence on specific political reforms. The economic models provide clear predictions of who stands to gain and lose from

women's rights, and how coalitions in favor of reform are shaped by other economic changes. Identifying more directly the source of political support for particular reforms will help distinguish between competing models and guide the development of new theories. A second area concerns the need to understand the relative importance of the broadly conceived economic motives described here and other forces such as cultural change or general enlightenment, and how these channels interact. As a starting point for such an undertaking, we now turn to empirical observations that can help inform such an analysis.

#### 4. Women's Rights across Countries: Data Description and Regression Design

Given that much of the historical expansion of women's rights in the United States aligns with economic forces, we explore whether such forces similarly help explain why women's rights widely differ across countries today. We saw in Figure 1 and Table 1 above that women are still lacking many legal rights precisely in the poorest countries. Despite clear parallels to the historical development in high-income countries, there are also reasons to believe that additional factors—such as culture or international pressure—might be important for understanding contemporary heterogeneity in women's rights around the world. Outside of economics, scholars have stressed the significance of culture and specifically religion (Bayes and Tohidi 2001; Htun and Weldon 2011; Boyle et al. 2015a; Ebetürk 2021a). Another possibility is that growing enlightenment underlies the expansion of women's rights (Hyland et al. 2020). If so, women's rights should arguably have spread largely in parallel in many countries. We explore these determinants empirically, separately for each of the four types of women's rights.

##### 4.1. Four Indices of Women's Rights

We consider four types of legal rights for women: economic, political, labor market, and body rights. We primarily use the World Bank's Women, Business, and the Law (WBL) database to create a rights index for each of these four areas, but augment it with information from other sources. The WBL data includes annual information on 35 legal rights for a panel of 190 countries<sup>14</sup> for the time period of 1970 to 2021 and specifies for each year whether a specific legal right existed for women in each country (see Hyland et al. 2020 for a comprehensive description of the database). We do not use information on all 35 legal rights, but rather select those that relate to our four areas. Appendix Table A.1 provides a complete list of the rights included in each of the four indices and their data sources. Since we code the legal rights as zero or one (either women have or do not have that right in a given country at a certain point in

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14. Throughout the sample period, some federal unions (e.g., the Soviet Union) dissolved and, as a result, new countries entered the sample. In other cases, two countries merged (e.g., East and West Germany). Appendix A.3 summarizes how the WBL database deals with such cases.

time), the index can be interpreted as the fraction of legal rights that women have in that area. We scale each index to lie between zero and one hundred.

Both our economic and labor rights indices rely exclusively on information from the WBL database. To construct the economic rights index, we use 16 questions related to mobility, marriage, entrepreneurship, and assets. Our labor rights index instead relies on six different legal rights related to equality in the workplace and pay, such as the right to work the night shift in the same way as men or whether discrimination in employment based on gender is legally prohibited.<sup>15</sup>

As the WBL data does not include information on laws related to women's political rights, we use information from other sources. Specifically, our political rights index is based on whether women have the right to vote, the right to be elected, and whether there is a sizeable representation of women in the national parliament. Admittedly, this last factor is not exactly a political right, though it does help capture the extent to which women are involved in legislation. Information on the right to vote and the right to be elected is based on [Skaaning et al. \(2015\)](#). Meanwhile, that on women in parliament comes from the cross-national data set compiled by [Paxton et al. \(2008\)](#), who record the year in which a country first attained a 20% or greater proportion of women in their parliament. A country may drop below this threshold in later years. We construct an indicator equal to zero as long as the share of women remains below 20%, which then takes a value of one in the first year in which women make up 20% or more, remaining one thereafter. Since this data is only available until 2003, we extend the indicator using information from the World Bank's World Development Indicators on the proportion of seats held by women in national parliaments ([World Bank 2022b](#)).

Finally, our body rights index combines data from the WBL and [Boyle et al. \(2015a\)](#) to include six legal rights specifically related to a woman's own body.<sup>16</sup> From the WBL database, we use information on whether there is legislation against sexual harassment in employment, whether legal or civic remedies against sexual harassment exist, and whether legislation addressing domestic violence is in place. We then add information on abortion rights, based on [Boyle et al.](#), who collect data on seven different grounds for which an abortion might be legal.<sup>17</sup> We define two broad legal rights related to abortion: whether abortion is legal to save a mother's life or physical health or legal for any other reason, including simply a woman's request. These measures allow us to distinguish between a more narrow and a broader definition

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15. We exclude legislation related to sexual harassment in the workplace and include it instead in our body rights index.

16. A more extensive analysis might include additional rights, such as laws against rape and specifically marital rape, regulations prohibiting female genital cutting, and whether or not child marriage is banned. We do not include these other dimensions in our analysis due to data limitations. Though some data does exist in this regard, it is typically available only a subset of countries and selected years, which would have severely impacted the number of observations in our analysis.

17. These include: to save a mother's life, protect a mother's physical health, protect a mother's mental health, pregnancy as a result of rape, fetal impairment, socioeconomic hardship, and a woman's request to have an abortion.

of abortion rights. As the data from Boyle et al. is available only until 2009, we supplement it with information from the World Population Policies Database in 2011, 2013, and 2015, and the UN Population Division in 2017 (United Nations 2022a,b). Finally, we use contraceptive prevalence as a proxy for the right to reproductive autonomy.<sup>18</sup> Specifically, we employ data from the World Development Indicators database on the fraction of 15-49-year-old married women who use any method of contraception (World Bank 2022b). Based on this information, we define an indicator that is equal to one if this fraction is equal to or above 45%, which is the average fraction of women using any method of contraception across all countries and years in our data.

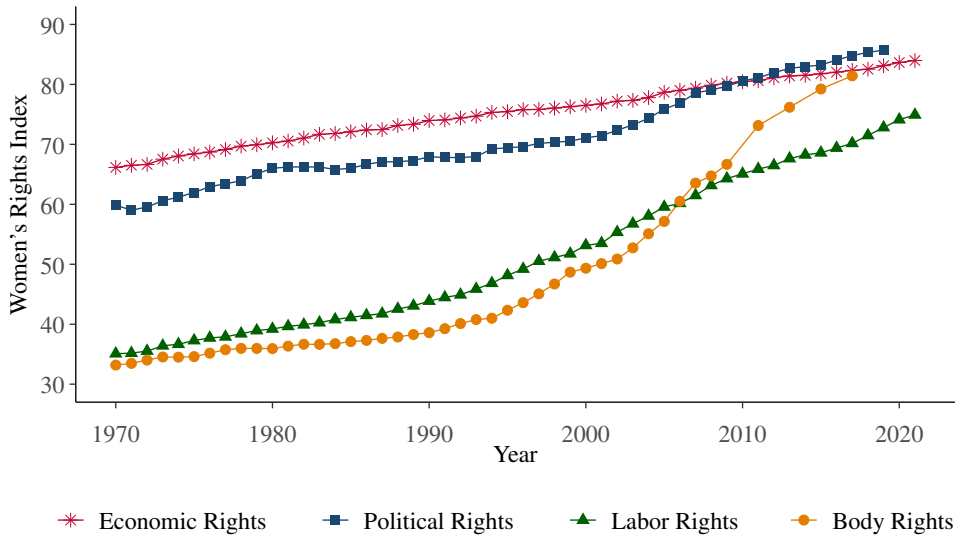


FIGURE 3. Worldwide Increase in Four Women’s Rights Indices

Notes: We construct four indices to measure economic, political, labor, and body rights using the WBL Database (World Bank 2022a) as our main source, supplemented with information from various other sources. The construction of the indices is described in the text and the data sources are summarized in Appendix Table A.1.

Figure 3 plots the four women’s rights indices over time as an average across all countries.<sup>19</sup> Notably, women’s rights substantially increased in all four areas over the

18. Certain types of contraception, such as the pill, have historically been illegal in many countries.

19. Since our indices contain different numbers of laws, a one point change does not refer to equal changes in the number of rights implemented across indices. For instance, an increase of 6.25 points in the economic rights index can be interpreted as, on average, one more economic law aiming at gender equality across countries. To reach the same change in terms of the number of laws, labor and body rights would need to increase by 16.67 points and political rights by 33.33 points. Nevertheless, changes in the index can be compared across areas as they always measure the change in the average percentage of rights in the respective index.

sample period.<sup>20</sup> Yet, there are clear differences between the different types of rights. Already in 1970, economic rights were well established in many countries, as were political rights with an index close to 60 in 1970. Both political and economic rights continued to increase, with the rise in political rights being more pronounced and notably surpassing the economic index in 2010.

In contrast, rights related to the labor market and the female body were much less common in 1970: the body rights index is 33 and the labor rights index 35. Labor rights gradually increased over the entire time period, reaching close to 75 points by 2021. Body rights were rather stagnant throughout the 1970s and 1980s and then started to sharply rise in the late 1990s. In 2006, the body rights index surpassed the labor rights index. The ordering of the indices throughout most of the considered time period is consistent with the historic sequence in the expansion of women's rights in the United States: economic rights first, followed shortly thereafter by political rights, with rights related to the labor market coming much later, and body rights only relatively recently.

We also construct one overall index, which combines all 31 individual legal rights used in the four indices. Figure 4 displays how this overall index differs across countries at three points in time, revealing considerable geographic differences. In 1971, women in Africa, Latin America, the Middle East, and parts of Europe (most notably Spain) had few rights, while women in North America, Australia, and the northern parts of Europe already had many rights. By 1991, women's rights had improved in many places, though little progress had been made in most of Africa and the Middle East. By 2017, the legal position of women had most strongly improved in South America, with North Africa and the Middle East being slowest to adopt different women's rights.<sup>21</sup>

## 4.2. Regression Design

To explore the drivers of women's rights, we combine our legal rights data with information on economic variables, namely GDP per capita, the total fertility rate, and female labor force participation. We choose these variables because they relate to the different economic channels for expanding women's rights discussed above. The parental altruism channel links women's rights to family changes and specifically education investments in children, which is closely related to the fertility rate through the quantity-quality tradeoff.<sup>22</sup> The income channel concerns the implications of women's rights for women's labor supply, providing a link with the female labor force participation rate.

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20. Hyland et al. (2020) likewise document substantial progress in women's labor-related rights over the same period.

21. In their analysis of labor rights specifically, Hyland et al. (2020) similarly document an uneven progress in women's rights across regions.

22. In a robustness exercise, we also link women's rights directly to children's education by using data on secondary school enrollment, see Section 5.6.

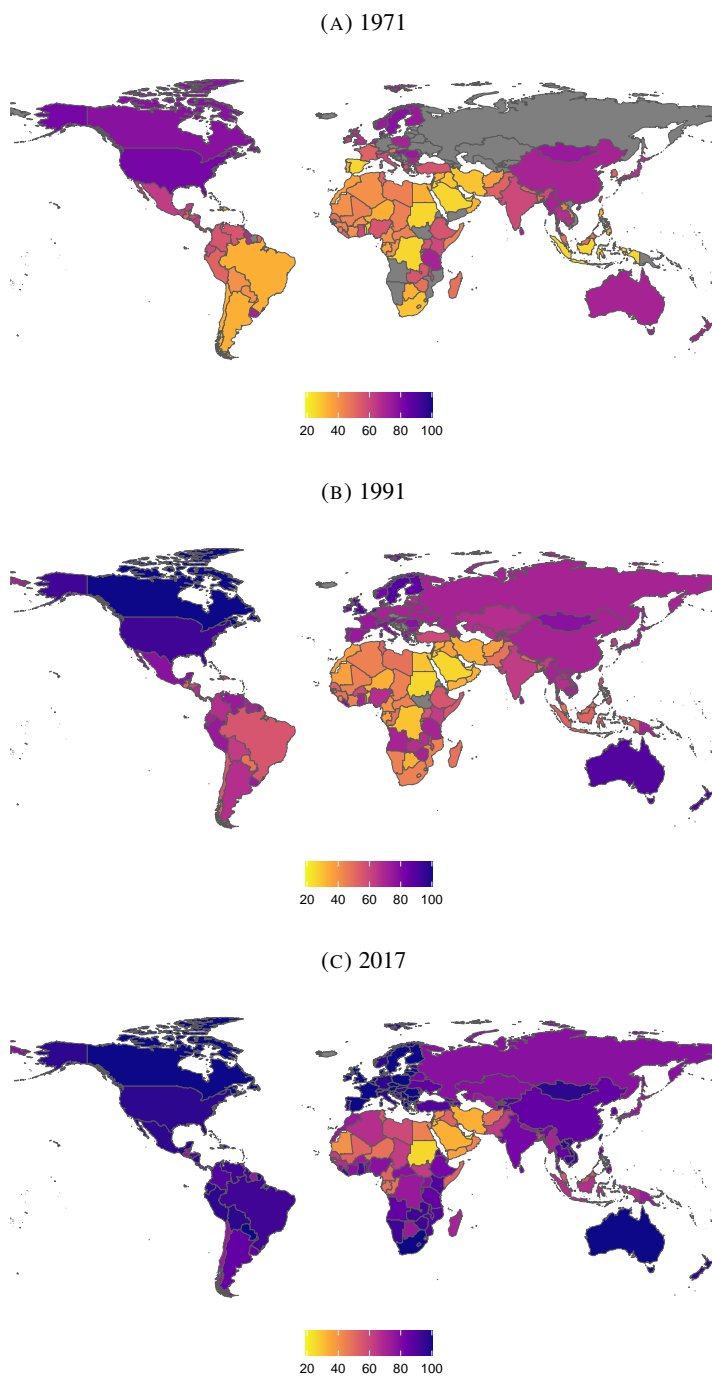


FIGURE 4. The Development of Women's Rights Across the World

Notes: We construct an overall index that includes all the different individual rights comprising the economic, political, labor market, and body rights indices (see also Appendix Table A.1). The overall index expresses the percentage of laws that exist in a given country year and can range from 0 to 100.

We do not include a separate variable for the public policy channel, as changes in political preferences are driven by the same changes to the role of families and women's labor supply that underlie the parental altruism and the income channels. Given that the public policy channel applies specifically to political rights, our economic variables can therefore be interpreted as also capturing the public policy channel in our results on political rights. Similarly, we do not include a separate variable for the bargaining channel. Apart from being difficult to measure, this channel relating to basic distributional conflict between women and men is arguably always present and less drastically transformed over time compared to the parental altruism and income channels.<sup>23</sup> This leads us to focus on the changing role of the other channels as drivers of political reform.

In addition to the relevance of economic forces, we explore two other determinants of women's rights emphasized in the literature: culture and enlightenment. We consider the influence of culture in two ways. Since culture can be thought of as invariant over shorter time horizons, we include country fixed effects to control for culture and other country-specific factors in some of our regressions. With regard to more specific cultural influences, Boyle et al. (2015a) and Ebetürk (2021a) point out that religion is particularly important for the expansion of women's rights (or the lack thereof). Hence, we include dummy variables for the religious majority in a given country and year in some specifications.<sup>24</sup> Table A.2 in the Appendix lists all explanatory variables, along with their sources.

If culture or religion were the primary reasons for why women's rights differ across countries, one would expect the dummy variables for religious majorities or country fixed effects to account for much of the variation in the data. In regressions with religion effects, we include dummy variables for Muslim, Catholic, and Buddhist majorities. The omitted category consists of all other religions and non-religious majorities. To assess how economic development interacts with culture, in some regressions we also include interaction terms between the religious majority dummies and GDP per capita.

Examining the enlightenment channel, i.e., the idea that the expansion of women's rights is a part of a general trend characterized by growing recognition of the rights of previously excluded groups, which progresses independently of economic changes, poses more of a challenge. As there are no direct empirical measures of such a global movement, we assess the role of the enlightenment channel by including time fixed effects in some of our regressions. If the spread of women's rights is due to a general increase in enlightened views in society, this should be reflected in a rise in these fixed effects over time. If growing enlightenment, independent of local economic

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23. Of course, the relative bargaining power in marriage has likely changed considerably over time due to, for example, changes in female labor force participation. However, such changes would not alter the preference of men for women to have little bargaining power, which is what our bargaining power channel is about.

24. Online Appendix Table B.1 provides an overview of religious majorities in the year 2000 for each of the countries included in our analysis.

conditions, was the primary force underlying the expansion of women's rights, we would expect time fixed effects to absorb most of the variation in the data.

Depending on data availability, our regressions cover slightly different time periods. For instance, whereas our economic and labor rights indices are available from 1970 to 2021, the political and body rights indices end in 2019 and 2017 respectively. Furthermore, information on Muslim and Buddhist population shares is only available until 2013.

## 5. Women's Rights across Countries: Empirical Results

We now turn to the findings from our empirical analysis, discussing the role of economic and cultural factors for the development of women's economic, political, labor, and body rights separately. We conclude this section with several robustness checks as well as an assessment of additional potentially relevant drivers of these rights. Tables 3–6 summarize the results, and we provide more detailed versions in Appendix A.4.

### 5.1. Economic Rights

Table 3 reports the results for the economic rights index. Column (1) shows that there is a positive correlation between economic development (as measured by per capita GDP) and women's economic rights. However, the correlation is fairly small, and the low  $R^2$  suggests that little of the variation in women's economic rights across countries can be explained by economic development per se. Next, we include the total fertility rate and female labor force participation as additional explanatory variables in column (2). The  $R^2$  suggests that half of the variation in the data can be accounted for by these three economic variables. The effects are sizeable. The estimated coefficients from column (2) imply that a decline in the total fertility rate of one child is related to an increase in the economic rights index of 7.15, which roughly corresponds to the difference in women's economic rights between India and the United States in 2000. Similarly, an increase in female labor force participation of 10 percentage points is associated with a 5.3 points higher economic index, which roughly corresponds to the worldwide increase in women's economic rights between 1970 and 1980. Both findings point to the income channel and the parental altruism channel as important mechanisms for explaining the variation in women's economic rights across countries.

Columns (3) and (4) measure the effect of culture. We first include country and time fixed effects. While these explain a substantial share of variation in the data, the effects of the total fertility rate (TFR) and female labor force participation (FLFP) remain significant.<sup>25</sup> To compare the role of economic versus cultural factors, we assess the explanatory power of religion without including any economic variables

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25. Results are similar without time fixed effects, as we show in the Appendix.



TABLE 3. Economic Rights – Summary of Regression Results

	Dependent Variable: Economic Rights Index				
	(1)	(2)	(3)	(4)	(5)
<b>A. Economic Variables</b>					
GDP p.c. (in 1000s)	0.32***	-0.16**	0.04	-0.17**	-0.05
Total Fertility Rate		-7.15***	-1.71***	-6.75***	-6.53***
Female LFP (15-64)		0.53***	0.14***	0.45***	0.43***
<b>B. Interactions with Religion</b>					
Majority Catholic × GDP p.c.					0.12
Majority Muslim × GDP p.c.					-0.75***
Majority Buddhist × GDP p.c.					-0.26
Time Fixed Effects	No	No	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No
Religion Fixed Effects	No	No	No	Yes	Yes
Observations	7,796	5,428	5,428	4,045	4,045
Adjusted $R^2$	0.057	0.513	0.919	0.541	0.583

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . For a full set of results including standard errors, refer to Appendix Table A.3.

(Appendix Table A.3, column (6)). Religion alone explains roughly 30% of the variation in economic rights across countries and time. If we include both religion and economic factors, the adjusted  $R^2$  increases to around 55%. In contrast, religion adds less than 5 percentage points of explanatory power when compared to a specification in which we control for economic factors (column (2) versus column (4)). Thus, the effect of religion mainly operates through differences in FLFP and TFR across religions.

Finally, we add interaction terms between the dummy variables for religious majorities and GDP per capita. The coefficients on TFR and FLFP barely change, but we do find significant negative coefficients for the interaction of Islam and Buddhism (but not Catholicism) with GDP per capita. Thus, even though religion by itself does not appear to explain much, it interacts with economic development, such that certain religions slow down the expansion of women's rights through economic channels.

To look at the role of enlightenment, we plot the estimated time fixed effects of the specification in column (5) in Figure A.1 in the Appendix. The graphical illustration shows that there are no significant time fixed effects for economic rights after 1970. This suggests that, if the enlightenment channel has played any role at all in the development of economic rights, it must have been prior to 1970.

Overall, at least at the level of correlations, the cross-country results for economic rights indicate a substantial role of two economic channels, namely the parental altruism channel and the income channel. Religion appears to be relatively unimportant, except for the fact that certain religions lower the positive effect of

economic development on women's rights. There is little evidence of a general enlightenment trend driving women's economic rights in the time period considered.

### 5.2. *Political Rights*

We repeat the analysis for the political rights index in Table 4. While political rights are not correlated with economic development as proxied by GDP per capita (column (1)), we do observe significant correlation with TFR and FLFP (column (2)). That said, the variation in the data accounted for by economic variables is lower compared to economic rights, as reflected by the lower adjusted  $R^2$ . The estimated coefficients are also smaller. A fertility decline of one child per woman is associated with a 2.45 points higher political rights index, which is half in size compared to the association with the economic rights index. The relation between FLFP and political rights is similarly lower compared to economic rights. Adding country and time fixed effects instead explains much of the variation in the data (column (3)), while including religion rather than country fixed effects in column (4) gives almost the same results as column (2). So again, while culture seems to be important, there appear to be dimensions of culture (or other country-specific factors) not captured by religion or growing enlightenment. When we include the interaction of religion and economic development in column (5), the adjusted  $R^2$  increases substantially to about 0.3. As for economic rights, the coefficients suggest that in countries with Muslim or Buddhist majorities the positive effect of economic development on women's rights is diminished. This interaction between economic development and religion is quantitatively more important for political compared to economic rights. A plot of the estimated time dummies of column (5) suggests that a general enlightened trend towards more political rights may have played a role only from the early 2000s onward (see Figure A.1 in the Appendix).

### 5.3. *Labor Rights*

The results for the impact of economic variables and religion on labor market rights are largely similar to those for economic rights. Table 5 shows that there is a positive correlation between economic development and labor market rights for women. However, in contrast to economic and political rights, per capita GDP continues to be significant even after including TFR and FLFP. The estimated coefficients in column (2) imply that a reduction in the TFR of one child is associated with a 4.78 point increase in the labor index, which is larger than for the political rights index but somewhat smaller compared to the economic rights index. The estimated coefficient on FLFP is 0.52, which is comparable in magnitude to the effect on the economic rights index. As before, Muslim and Buddhist religious majorities, but not Catholic majorities, reduce the positive effect of economic development on women's labor market rights. Finally, the estimated time fixed effects are positive, especially from the mid-1990s onward (see Figure A.1 in the Appendix), pointing to a possible role of enlightenment for the expansion of women's labor rights.

TABLE 4. Political Rights – Summary of Regression Results

	Dependent Variable: Political Rights Index				
	(1)	(2)	(3)	(4)	(5)
<b>A. Economic Variables</b>					
GDP p.c. (in 1000s)	0.11	−0.06	−0.06	−0.07	0.17*
Total Fertility Rate		−2.45***	−1.36***	−1.75**	−1.51**
Female LFP (15-64)		0.34***	0.35***	0.30***	0.26***
<b>B. Interactions with Religion</b>					
Majority Catholic × GDP p.c.					−0.22
Majority Muslim × GDP p.c.					−1.24***
Majority Buddhist × GDP p.c.					−0.42**
Time Fixed Effects	No	No	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No
Religion Fixed Effects	No	No	No	Yes	Yes
Observations	7,138	5,167	5,167	3,981	3,981
Adjusted $R^2$	0.009	0.140	0.757	0.181	0.305

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . For a full set of results including standard errors, see Appendix Table A.4.

TABLE 5. Labor Rights – Summary of Regression Results

	Dependent Variable: Labor Rights Index				
	(1)	(2)	(3)	(4)	(5)
<b>A. Economic Variables</b>					
GDP p.c. (in 1000s)	0.62***	0.26**	−0.26***	0.35***	0.60***
Total Fertility Rate		−4.78***	2.24***	−2.59***	−2.37***
Female LFP (15-64)		0.52***	0.06	0.31***	0.28***
<b>B. Interactions with Religion</b>					
Majority Catholic × GDP p.c.					−0.27
Majority Muslim × GDP p.c.					−1.23***
Majority Buddhist × GDP p.c.					−0.69***
Time Fixed Effects	No	No	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No
Religion Fixed Effects	No	No	No	Yes	Yes
Observations	7,796	5,428	5,428	4,045	4,045
Adjusted $R^2$	0.123	0.299	0.826	0.380	0.441

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . For a full set of results including standard errors, see Appendix Table A.5.

### 5.4. Rights over Own Body

Finally, Table 6 repeats the analysis for body rights. As before, economic development, fertility, and female labor force participation are strongly linked to increasing female body rights. The estimated coefficient on the total fertility rate in column (2) is -5.82, meaning that the total fertility rate and body rights are linked more strongly than in the case of the political and labor rights indices, but that the link is weaker compared to the economic rights index. The association with FLFP is lower for the body rights index than for any of the other rights. Taken together, economic variables account for less of the variation compared to economic and labor rights, but more relative to political rights.

An interesting difference is that growing enlightenment (assessed through time fixed effects) and religious majorities seem to play a larger role than for any of the other rights. Indeed, when comparing columns (2) and (4), we see that the adjusted  $R^2$  increases by 60%. This effect is mainly driven by time fixed effects. Appendix Figure A.1 plots the estimated time fixed effects, which are essentially zero until 1990 and then rise sharply thereafter, closely aligning with the worldwide acceleration of body rights in the mid-1990s. Thus, a rising worldwide awareness for individual rights may indeed be an important driver of women's body rights specifically.

TABLE 6. Rights over Own Body – Summary of Regression Results

	Dependent Variable: Body Rights Index				
	(1)	(2)	(3)	(4)	(5)
<b>A. Economic Variables</b>					
GDP p.c. (in 1000s)	0.57***	0.14*	0.27***	0.22**	0.33***
Total Fertility Rate		-5.82***	2.66***	-4.30***	-4.06***
Female LFP (15-64)		0.32***	0.10**	0.20***	0.18**
<b>B. Interactions with Religion</b>					
Majority Catholic × GDP p.c.					0.07
Majority Muslim × GDP p.c.					-0.52***
Majority Buddhist × GDP p.c.					-0.18
Time Fixed Effects	No	No	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No
Religion Fixed Effects	No	No	No	Yes	Yes
Observations	5,578	3,950	3,950	3,492	3,492
Adjusted $R^2$	0.106	0.268	0.776	0.430	0.445

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . For a full set of results including standard errors, see Appendix Table A.6.

The relatively larger role of religion in these regressions is consistent with empirical studies in sociology. Boyle et al. (2015a), for example, show that religion is strongly correlated with the level of abortion rights in a country. Interestingly, we

do not find a significant effect of Catholic majorities on female body rights. This may be due to the fact that our body rights index includes several body rights dimensions, while Boyle et al. analyze abortion rights specifically.<sup>26</sup> Abortion laws are unique in the sense that they legislate the tradeoff between women's own health, including their reproductive autonomy, versus the life or health of an unborn child. Abortion laws must accordingly take a legal stance on when life itself starts. Catholicism clearly identifies the moment of conception as the relevant reference point. It is thus no surprise that countries with Catholic majorities are negatively associated with abortion rights, but not necessarily with a more extended notion of body rights that includes domestic violence or sexual harassment. Finally, we find that Muslim, but not Buddhist, majorities also diminish the positive effect of economic development on body rights.

### ***5.5. Summary and Interpretation of Empirical Findings***

The empirical analysis suggests that women's rights are strongly associated with economic development. Only political rights are not correlated with GDP per capita, although they are associated with other economic variables. In terms of magnitudes, the economic channels explain the largest share of the variation in the data for the case of economic rights (with an  $R^2$  of 0.51), followed by labor rights (0.30), then body rights (0.27), with political rights last (0.14).

Two key findings emerge. First, the FLFP rate is positively associated with all four types of women's rights, suggesting that the income channel could be an important driver for the expansion of women's rights. This channel predicts that political preferences for women's rights depend not only on one's own labor supply, but also that of one's spouse. As a result, political support for women's rights is not simply a function of gender. Men with labor market skills that are complementary to women's benefit from an expansion in women's rights, as do men whose spouses would increase their earnings when rights are extended. Not surprisingly, the income channel seems most important for economic and labor rights, with estimated coefficients around 0.5, compared to 0.3 for the political and body rights (referring to column (2) of Tables 3–6 in each case).

Second, the total fertility rate is also significantly negatively related to all types of women's rights, implying that parental altruism may be another important channel underlying the expansion of women's rights. If parents care about the human capital of their children and women's rights affect investments in children, parents of either gender may be in favor of extending women's rights to improve child outcomes and child welfare. The strength of this channel depends on the return to human capital, where a high return is also associated with low fertility through the quantity-quality tradeoff. Again, this channel seems most important for economic rights, with an

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26. Boyle et al. (2015a) distinguish between three different types of abortion rights and find that Catholicism plays a particularly important role in blocking abortion due to fetal impairment or mother's mental health but is less relevant for the right to an abortion due to rape.

estimated coefficient of around -7 in column (2) of Table 3, closely followed by body rights and labor rights with coefficients of about -6 and -5, respectively. The quantitative effect is smallest for political rights, with a coefficient of roughly -2.5. The large impact of changes in fertility on body rights is perhaps unsurprising, given that female body rights such as abortion and rape laws are naturally linked to childbearing.

Even though our analysis suggests that economic forces are key in explaining cross-country differences in women's rights, we also find that religion interacts with economic development and can diminish the effect of economic channels that increase women's rights. Specifically, we find that Muslim majorities are associated with fewer women's rights, independently of the type of right. The interaction between economic development and religion is particularly important for body rights. Time fixed effects are similarly most relevant for body rights, suggesting that general enlightenment may have played a role in the expansion of own body rights in recent decades.

### 5.6. Robustness Checks

We run several alternative specifications of our main regressions to test the robustness of our results. Tables B.2 – B.5 in the Online Appendix display these additional findings for the economic, political, labor, and body rights indices, with columns (2) to (6) comparing the results to our main specification, given in column (1).<sup>27</sup>

In our main regressions, we use the maximum number of observations available for each specification, and as such use different samples across regressions and indices. Our results are robust to using a consistent sample and not driven by differences in data availability, as shown in column (2).

We also control for OPEC membership to capture the fact that some countries have become wealthy without having experienced a more typical development process of structural change and increasing demand for human capital. While OPEC membership is significantly negatively associated with economic rights, it is not significantly correlated with other rights, nor does it affect the sign and significance of our main coefficients, see column (3).

Similarly, we look at a specification without time fixed effects (but with religion) to assess the extent to which time-specific effects interact with the effects of economic and cultural characteristics on the respective rights. Comparing the two specifications in columns (1) and (4), we see that time fixed effects do not substantially alter the sign and magnitude of coefficients, suggesting that any potential time or enlightenment effects are uncorrelated with the effects of economic and cultural variables.

Finally, in column (5), we replace the total fertility rate with secondary school enrollment as a proxy for the quantity-quality tradeoff. In line with our theory, the total fertility rate and secondary school enrollment have opposite signs, and secondary school enrollment is highly significant across all indices. At the same time,

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27. To be precise, column (1) always repeats column (5) of our main Tables 3–6.

the sign and significance of other contributing factors are largely consistent across specifications.

### 5.7. *Factors Specific to Individual Laws*

We now investigate the effects of several additional factors on women's economic, political, labor, and body rights by adding one additional explanatory variable at a time to our baseline specification with time and religion fixed effects and interaction terms, i.e., to the last column in Tables 3–6.<sup>28</sup> Table 7 summarizes the sign of significant coefficients in these additional regressions for each of the four different indices. Detailed results are provided in the Online Appendix B.3.

TABLE 7. Additional Factors Correlated with Women's Rights

Factor/Rights	Economic	Political	Labor	Own Body
Female Population Share				
Employment Share Agriculture		+		
Government Effectiveness				+
Membership in Int. Women NGOs		+		
Nb. of Conventions Ratified	+	+		+
International Pressure	+	+	+	
Women in Parliament > 20%	+	n/a	+	

Notes: All regression results underlying this summary table can be found in Tables B.6 – B.9 of the Online Appendix.

Some scholars have argued that additional rights would be granted more willingly to women if they made up a relatively small share of the population, and thus such expansion would not affect the lives of men substantially (e.g., Jones 1991). That said, a larger share of women could be indicative of greater collective female bargaining power. In contrast to both theories, we find no significant association of the share of female citizens with any type of women's right.

Following Bertocchi (2011), we include the employment share in agriculture as an additional factor potentially associated with women's rights, the idea being that women have a comparative advantage in brain-based employment, such that their relative wages are higher in more industrialized settings where the role of intellectual work is more important than in agrarian societies. Lower shares of agricultural employment would be directly linked to a lower gender wage gap, and hence higher women's bargaining power, and thus possibly more rights. In our data, only political

28. Sources for the additional explanatory variables are included in Table A.2 of the Appendix.

rights are significantly associated with employment in agriculture. However, against our prediction, this effect is positive.<sup>29</sup>

In her study on legislation against forced and child marriage, [Ebetürk \(2021a\)](#) argues that legislation establishing women's rights is also likely related to state capacity. In order to recognize the absence of women's rights as well as to pass counteracting legislation, a state must have the capacity to identify the prevalence of inequalities between women and men. In line with this argument, [Ebetürk](#) finds a positive effect of the size of government on child labor laws. Relatedly, [Poyker \(2021\)](#) finds that female genital cutting is more persistent where governments are unstable. Using an index of government effectiveness by [Teorell et al. \(2013\)](#), we observe that this result holds for body rights more generally. However, we find no significant correlation of government effectiveness with economic, labor, or political rights.

Both [Boyle et al. \(2015a\)](#) and [Ebetürk \(2021a\)](#) emphasize that the transmission of global norms are key for the expansion of women's rights across countries. The degree to which they affect women's rights in a given country may depend on two factors: (i) the number of linkages a country has to the rest of the world and (ii) the intensity of such linkages. Following [Ebetürk](#), we measure this in several ways. First, we use the number of women's international NGOs in which residents of a given country are members. While [Ebetürk](#) finds no significant relationship between memberships in women's international NGOs and child marriage legislation, we document a positive effect for women's political rights (though not for any of the other rights). When using the number of ratified international conventions related to women and children, additional positive effects on women's economic and own body rights emerge. This is consistent with [Ebetürk](#), who observes that a larger number of ratified conventions is associated with more legislation against child marriage.

Second, to measure the intensity of linkages to other countries, we hypothesize that neighboring countries are often culturally similar and economically interconnected. Hence, we would expect the influence of global norms in a neighboring country to play a larger role than those in a country that is geographically farther away. Such diffusion has been documented in other contexts, e.g., [Spolaore and Wacziarg \(2022\)](#) document cultural diffusion of fertility behavior, but this largely remains unexplored in the context of women's rights. We construct a variable that summarizes the average number of ratifications in the region to which a country geographically belongs. We call this measure "international pressure," as it captures the influence of global norms beyond the country itself. While our measure is positively associated with women's economic, political, and labor rights, there is no correlation with rights over one's own body. This may suggest that global norms are insufficient to affect deeply rooted norms and traditions related to women's body rights and that these rights are only granted once the country itself is ready to question traditional norms.

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29. In her analysis of suffrage extensions in 22 countries during the period of 1870-1930, [Bertocchi \(2011\)](#) finds no significant effect of agricultural share on the right to vote and hypothesizes that this is due to the high correlation of per capita GDP and agricultural share.



Finally, active female participation in the political process is likely to influence legislation related to women's rights. To test the effects of women's political representation, we look at the effects of the share of women in parliament. Specifically, we measure female representation using a dummy variable indicating whether the share of women in parliament has ever been above 20%. Table 7 shows that the presence of women in parliament is positively associated with both economic and labor rights, but does not affect women's rights over their own body.<sup>30</sup>

## 6. Conclusion and Directions for Future Work

Women's rights have progressively expanded around the world, yet sizeable gaps between the legal rights of women and men remain. In this paper, we investigate the political economy behind the expansion of four different types of women's rights: economic, political, labor market, and body-related rights. We argue that understanding who stands to gain or lose from such rights is key to elucidating the political process leading to the expansion of women's rights. To do so, we present a simple framework that illustrates four different mechanisms through which individual preferences about women's rights are affected: the bargaining power channel, the parental altruism channel, the income channel, and the public policy channel. We contend that changes in economic development (such as technological progress and structural change) can alter the tradeoffs implied by these four channels, resulting in a shift where the majority of people who initially voted against women's rights subsequently vote in favor. There is substantial evidence in the literature that economic forces have been important for the historical expansion of women's rights. Here, we present new empirical evidence suggesting that such forces may be equally critical in explaining cross-country differences in the legal position of women today. We find that our economic variables explain the largest share of cross-country variation for women's economic and labor rights and the least for their political rights. Economic channels also explain a sizeable share of the cross-country variation in women's body rights, with the impact of the fertility rate being particularly strong.

Many open questions remain. First and foremost, there are no economic theories focused on explaining today's differences in women's rights across countries. The existing economic models analyze the evolution of women's economic and political rights over time in a given country, mainly in the context of U.S. history. Second, little theoretical work assesses the different types of women's rights. For instance, in the United States, women's economic rights expanded about a century earlier than body rights, and our cross-country analysis suggests that the driving forces behind the expansion of these two rights may differ. Finally, many examples show that women's rights have not always progressed in a linear fashion. In some contexts, there have

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30. Since the women in parliament indicator is part of our political rights index, we cannot include it as an explanatory variable for political rights.

even occurred reversals of women's rights. For example, the United States Supreme Court granted a constitutional right to abortion for women in 1973 (*Roe v Wade*), but the ruling was overturned again in 2022, when the Supreme Court took a different stand on the interpretation of the U.S. Constitution (*Dobbs v Jackson Women's Health Organization*). Women's rights in Afghanistan have likewise oscillated back and forth over time, largely related to the Taliban regime. Do economic forces play a role in such reversals as well?

We abstract from the issue of enforcement in our analysis.<sup>31</sup> Yet, without robust enforcement the legal position of women for a given *de jure* law is much weaker. What explains differences in enforcement? How can we measure enforcement? These are questions left for future research. New data might help to further disentangle the causal relationships between laws, attitudes, and practice. The United Nations Development Program created the new Gender Social Norms Index, which documents gender norms along four dimensions (politics, education, economics/work, and physical integrity) across countries. Similarly, the OECD Gender, Institutions and Development Database distinguishes between law, attitudes, and practice on several dimensions of gender equality.

Finally, research documents that the expansion of women's rights in one dimension is often accompanied by a weakening of their positions in other dimensions, a phenomenon known as "male backlash." This captures the idea that when women advance in one area of life, they may pay for it by losing ground in another sphere. If so, more legal rights may not always universally improve the position of women and there might be a tradeoff between formal legal rights for women and their well-being. While substantial evidence shows that more resources in the form of income transfers or encouraging women to work can lead to backlash, there has been little exploration of this idea in the context of women's legal rights. Studies focusing on resources more generally include [Angelucci \(2008\)](#), who observes in data from Mexico that large income transfers to women led to more domestic violence. [Anderberg and Rainer \(2013\)](#) develop a theory explaining why an increase in female wages can lead to more domestic violence where the husband tries to sabotage her work efforts. Similarly, [Eswaran and Malhotra \(2011\)](#) find that greater female autonomy increases domestic violence in India and contend that men use violence to increase their bargaining power. [Bloch and Rao \(2002\)](#) show that dowry violence increases in the wife's family income and develop a theory to explain this pattern. Meanwhile, [Angelucci and Heath \(2020\)](#) find that being the main earner is positively correlated with domestic violence among Congolese women. Domestic violence is not the only form of male backlash that women whose bargaining power has increased may experience. For instance, women who work longer hours than their husbands tend to compensate by doing more housework and accordingly consuming less leisure and suffering in terms of life satisfaction (see [Flèche et al. 2018](#) and [Flèche et al. 2020](#)). [Wheaton \(2022\)](#) is one

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31. [Acemoglu and Jackson \(2017\)](#) offer a general theory of the interaction between social norms and the enforcement of laws; it would be interesting to apply their theory to women's rights specifically.

of the few papers that analyzes male backlash in the context of women's legal rights. The author finds that men reacted sharply to Equal Rights Amendments established in many U.S. states throughout the 1970s, expressing more negative attitudes toward gender equality immediately after their introduction. [Sanders and Jenkins \(2022\)](#) discusses more recent backlash to women's rights on the part of populist leaders. Considering the possibility of backlash is another promising direction for future research on the economics of women's rights.

## Appendix: Definitions, Data Sources and Extended Results

### A.1. Definition of Four Rights Indices

Table A.1 summarizes the rights underlying each of the four indices and their sources.

TABLE A.1. Women's Rights Index Definitions

Index	Variable Included
Economic Rights	Whether a woman can apply for a passport in the same way as a man. <sup>a</sup> Whether a woman can travel outside the country in the same way as a man. <sup>a</sup> Whether a woman can travel outside her home in the same way as a man. <sup>a</sup> Whether a woman can choose where to live in the same way as a man. <sup>a</sup> Whether there is no legal provision that requires a married woman to obey her husband. <sup>a</sup> Whether a woman can be head of household in the same way as a man. <sup>a</sup> Whether a woman can obtain a judgment of divorce in the same way as a man. <sup>a</sup> Whether a woman has the same rights to remarry as a man. <sup>a</sup> Whether a woman can sign a contract in the same way as a man. <sup>a</sup> Whether a woman can register a business in the same way as a man. <sup>a</sup> Whether a woman can open a bank account in the same way as a man. <sup>a</sup> Whether the law prohibits discrimination in access to credit based on gender. <sup>a</sup> Whether men and women have equal ownership rights to immovable property. <sup>a</sup> Whether sons and daughters have equal rights to inherit assets from their parents. <sup>a</sup> Whether male and female surviving spouses have equal rights to inherit assets. <sup>a</sup> Whether the law grants male and female spouses equal administrative authority over assets during marriage. <sup>a</sup>
Political Rights	Whether there is female suffrage. <sup>b</sup> Whether women have the right to stand for elections. <sup>c</sup> Whether there have ever been more than 20% of women in parliament. <sup>c,d</sup>
Labor Rights	Whether a woman can get a job in the same way as a man. <sup>a</sup> Whether the law prohibits discrimination in employment based on gender. <sup>a</sup> Whether the law mandates equal remuneration for work of equal value. <sup>a</sup> Whether a woman can work at night in the same way as a man. <sup>a</sup> Whether a woman can work in a job deemed dangerous in the same way as a man. <sup>a</sup> Whether a woman can work in an industrial job in the same way as a man. <sup>a</sup>
Body Rights	Whether there is legislation on sexual harassment in employment. <sup>a</sup> Whether there are criminal penalties or civil remedies for sexual harassment in employment. <sup>a</sup> Whether there is legislation specifically addressing domestic violence. <sup>a</sup> Whether abortion is legal for physical health reasons <sup>e,f,8</sup> Whether abortion is legal for reasons other than physical health <sup>e,f,8</sup> Whether contraceptive prevalence among married women is equal to or above the cross country and time mean of $\approx 45\%$ <sup>h</sup>

Data sources: <sup>a</sup>Women, Business and the Law database [World Bank \(2022a\)](#); <sup>b</sup>[Skaaning et al. \(2015\)](#); <sup>c</sup>[Paxton et al. \(2008\)](#); <sup>d</sup>[World Bank \(2022b\)](#); <sup>e</sup>[Boyle et al. \(2015b\)](#); <sup>f</sup>[United Nations \(2022a\)](#); <sup>g</sup>[United Nations \(2022b\)](#); <sup>h</sup>[World Bank \(2022b\)](#)

## A.2. Data Sources

TABLE A.2. Measurement and Sources of Independent Variables

Variable	Description	Source
GDP p.c. (in 1000s)	GDP per capita (constant 2015 USD)	World Bank (2022b)
Total fertility rate	Fertility rate, total (births per woman)	World Bank (2022b)
FLFP (15-64)	Labor force participation rate, female (% of female population ages 15-64)	World Bank (2022b), ILO (2022)
Majority Catholic/Muslim/Buddhist	Dummy variable. 1 = more than 50% of the population is Catholic/Muslim/Buddhist	Cline Center for Democracy (2022)
Secondary School Enrollment	School enrollment, secondary (% gross)	World Bank (2022b)
Female population share	Population, female (% of total population) (constructed from male population share)	World Bank (2022b)
Employment in agriculture	Employment in agriculture (% of total employment) (modeled ILO estimate)	World Bank (2022b)
OPEC indicator	Dummy variable. 1 = Country is OPEC member	OPEC (2022)
Government effectiveness	QoG government effectiveness index combining the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies.	Ebetürk (2021b), based on Teorell et al. (2013)
International pressure	Average number of ratifications related to women and children in the region (8 world regions)	Ebetürk (2021b)
Nb. of conventions ratified	Total number of ratifications of treaties related to women's/ children's rights	Ebetürk (2021b)
Women INGOs	Number of women INGOs in which residents of a country are members	Ebetürk (2021b)
Women in parliament >20%	Dummy variable. 1 = Share of women in parliament has ever been larger than 20%	Paxton et al. (2008), World Bank (2022b)
Independence	Dummy variable. 1 = Country became independent in this year	Boyle et al. (2015b)

## A.3. Changing Countries over the Sample Period

Between 1970 and 2019, some federal unions dissolved and new countries emerged. In other cases, countries merged. We briefly summarize how the WBL database treats such cases. Note that the database generally assumes that a hypothetical woman in question resides in the main business city of the country in question.

- If a country gained independence during the sample period, it was assigned the score of the country of which it was part prior to independence.
- For federal unions that dissolved over the sample period (for example, Yugoslavia or the USSR), the federal law was applied. The exception being if there was a law at the national level of the constituent republic. In the WBL database, there are several instances where this is the case, even before independence.

- For formerly colonized countries, such as Antigua and Barbuda and Namibia, national laws generally applied during colonization.
- For Germany pre-1990, the legal score is based on the applicable law of Berlin, West Germany.

#### ***A.4. Regression Results***

Table [A.3](#) to Table [A.6](#) show the extended regression results, discussed in Section [4.2](#).

TABLE A.3. Economic Rights

	Dependent Variable: Economic Rights Index					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Economic Variables</b>						
GDP p.c. (in 1000s)	0.32*** (0.10)	-0.16** (0.07)	0.04 (0.03)	-0.17** (0.07)	-0.05 (0.05)	
Total Fertility Rate		-7.15*** (0.56)	-1.71*** (0.28)	-6.75*** (0.63)	-6.53*** (0.62)	
Female LFP (15-64)		0.53*** (0.06)	0.14*** (0.03)	0.45*** (0.07)	0.43*** (0.07)	
Majority Catholic				0.74 (2.15)	-0.20 (3.07)	0.13 (2.97)
Majority Muslim				-7.73** (3.57)	-2.82 (3.53)	-22.24*** (3.41)
Majority Buddhist				0.87 (4.05)	3.54 (5.04)	7.11** (3.26)
<b>B. Interactions with Religion</b>						
Majority Catholic × GDP p.c.					0.12 (0.11)	
Majority Muslim × GDP p.c.					-0.75*** (0.13)	
Majority Buddhist × GDP p.c.					-0.26 (0.20)	
Time Fixed Effects	No	No	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Observations	7,796	5,428	5,428	4,045	4,045	6,709
Adjusted $R^2$	0.057	0.513	0.919	0.541	0.583	0.286

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Column (1) uses GDP per capita as the only explanatory variable. Column (2) adds the total fertility rate and female labor force participation as additional economic variables potentially associated with women's rights. Column (3) introduces time and country fixed effects. Column (4) replaces country fixed effects with religion majority indicators to proxy cultural differences across countries. Column (5) interacts the religion majority indicators with GDP per capita. Column (6) controls for religion and time effects only.

TABLE A.4. Political Rights

	Dependent Variable: Political Rights Index					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Economic Variables</b>						
GDP p.c. (in 1000s)	0.11 (0.12)	-0.06 (0.11)	-0.06 (0.06)	-0.07 (0.13)	0.17* (0.09)	
Total Fertility Rate		-2.45*** (0.64)	-1.36*** (0.44)	-1.75** (0.72)	-1.51** (0.63)	
Female LFP (15-64)		0.34*** (0.07)	0.35*** (0.04)	0.30*** (0.09)	0.26*** (0.08)	
Majority Catholic				1.95 (2.36)	5.11* (2.62)	1.35 (2.34)
Majority Muslim				-0.89 (3.79)	7.68** (3.32)	-9.64** (3.98)
Majority Buddhist				-6.54 (4.13)	-1.90 (5.06)	-3.65 (4.09)
<b>B. Interactions with Religion</b>						
Majority Catholic × GDP p.c.					-0.22 (0.16)	
Majority Muslim × GDP p.c.					-1.24*** (0.21)	
Majority Buddhist × GDP p.c.					-0.42** (0.21)	
Time Fixed Effects	No	No	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Observations	7,138	5,167	5,167	3,981	3,981	6,452
Adjusted $R^2$	0.009	0.140	0.757	0.181	0.305	0.143

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Column (1) uses GDP per capita as the only explanatory variable. Column (2) adds the total fertility rate and female labor force participation as additional economic variables potentially associated with women's rights. Column (3) introduces time and country fixed effects. Column (4) replaces country fixed effects with religion majority indicators to proxy cultural differences across countries. Column (5) interacts the religion majority indicators with GDP per capita. Column (6) controls for religion and time effects only.



TABLE A.5. Labor Rights

	Dependent Variable: Labor Rights Index					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Economic Variables</b>						
GDP p.c. (in 1000s)	0.62*** (0.14)	0.26** (0.10)	-0.26*** (0.06)	0.35*** (0.11)	0.60*** (0.10)	
Total Fertility Rate		-4.78*** (0.86)	2.24*** (0.48)	-2.59*** (0.93)	-2.37*** (0.90)	
Female LFP (15-64)		0.52*** (0.08)	0.06 (0.05)	0.31*** (0.09)	0.28*** (0.09)	
Majority Catholic				6.93* (3.82)	10.63** (5.09)	1.72 (3.87)
Majority Muslim				-13.82*** (4.82)	-5.07 (4.53)	-22.97*** (4.10)
Majority Buddhist				-5.66 (4.31)	0.61 (4.84)	-5.67 (5.14)
<b>B. Interactions with Religion</b>						
Majority Catholic × GDP p.c.					-0.27 (0.31)	
Majority Muslim × GDP p.c.					-1.23*** (0.22)	
Majority Buddhist × GDP p.c.					-0.69*** (0.19)	
Time Fixed Effects	No	No	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Observations	7,796	5,428	5,428	4,045	4,045	6,709
Adjusted $R^2$	0.123	0.299	0.826	0.380	0.441	0.264

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Column (1) uses GDP per capita as the only explanatory variable. Column (2) adds the total fertility rate and female labor force participation as additional economic variables potentially associated with women's rights. Column (3) introduces time and country fixed effects. Column (4) replaces country fixed effects with religion majority indicators to proxy cultural differences across countries. Column (5) interacts the religion majority indicators with GDP per capita. Column (6) controls for religion and time effects only.

TABLE A.6. Body Rights

	Dependent Variable: Body Rights Index					
	(1)	(2)	(3)	(4)	(5)	(6)
<b>A. Economic Variables</b>						
GDP p.c. (in 1000s)	0.57*** (0.13)	0.14* (0.08)	0.27*** (0.07)	0.22** (0.09)	0.33*** (0.11)	
Total Fertility Rate		-5.82*** (0.60)	2.66*** (0.62)	-4.30*** (0.65)	-4.06*** (0.65)	
Female LFP (15-64)		0.32*** (0.06)	0.10** (0.05)	0.20*** (0.07)	0.18** (0.07)	
Majority Catholic				2.68 (2.77)	2.13 (3.63)	2.25 (3.09)
Majority Muslim				-1.25 (3.57)	1.99 (3.77)	-8.22*** (2.93)
Majority Buddhist				-3.70 (4.40)	-1.72 (5.73)	0.51 (4.25)
<b>B. Interactions with Religion</b>						
Majority Catholic × GDP p.c.					0.07 (0.17)	
Majority Muslim × GDP p.c.					-0.52*** (0.12)	
Majority Buddhist × GDP p.c.					-0.18 (0.24)	
Time Fixed Effects	No	No	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	Yes	No	No	No
Observations	5,578	3,950	3,950	3,492	3,492	5,530
Adjusted $R^2$	0.106	0.268	0.776	0.430	0.445	0.335

Notes: All regressions include a dummy variable that is equal to one for the year in which a country newly gained independence. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Column (1) uses GDP per capita as the only explanatory variable. Column (2) adds the total fertility rate and female labor force participation as additional economic variables potentially associated with women's rights. Column (3) introduces time and country fixed effects. Column (4) replaces country fixed effects with religion majority indicators to proxy cultural differences across countries. Column (5) interacts the religion majority indicators with GDP per capita. Column (6) controls for religion and time effects only.

### A.5. Graphical Illustration of Time Fixed Effects

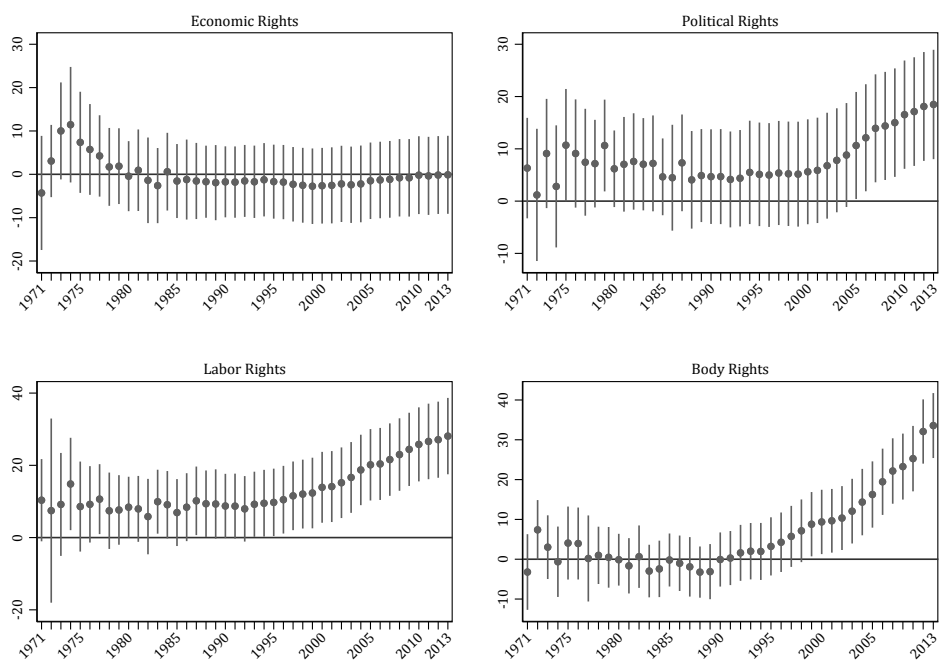


FIGURE A.1. Time Fixed Effects by Rights Index

Notes: We plot the time fixed effects from Column (5) of Tables 3 to 6.

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