The Economics and Politics of Women's Rights

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Keywords

Abstract

Women's rights and economic development are highly correlated.
Today, the discrepancy between the legal rights of women and men
is much larger in developing compared with developed countries.
Historically, even in countries that are now rich, women had few
rights before economic development took off. Is development the
cause of expanding women's rights, or conversely, do women's
rights facilitate development? We argue that there is truth to both
hypotheses. The literature on the economic consequences of women's
rights documents that more rights for women lead to more spend-
ing on health and children, which should benefit development. The
political-economy literature on the evolution of women's rights finds
that technological change increased the costs of patriarchy for men
and thus contributed to the expansion of women's rights. Combin-
ing these perspectives, we discuss the theory of Doepke & Tertilt
(2009), who find that an increase in the return to human capital
induces men to vote for women's rights, which in turn promotes
growth in human capital and income per capita.

1. INTRODUCTION

In today's developed countries, by and large, women enjoy the same legal rights as men. This has not always been the case. Two hundred years ago, in most countries women were considered the property of men (typically either a father or a husband) and had no intrinsic rights of their own. They usually could not own property or sign contracts, they had no control over their own bodies, they could not vote, they had no legal way to end a marriage, and they had no access to their children after a separation. What explains the expansion of women's rights since? And what was the economic impact of these changes? In this article, we provide a survey of the economics and politics of women's rights.

We focus on legal rights to emphasize the distinction between equality in opportunity and equality in outcomes.[1] Men and women are different, and hence gender differences in outcomes such as labor force participation, life expectancy, and political involvement should not be surprising. For example, even a small comparative advantage of women in child rearing may lead to an optimal division of labor in which many women specialize in home production (Becker 1991 [1981]). Inequalities in outcomes do not necessarily imply that women are disadvantaged. However, if formal rights are gender specific, then women are denied the same opportunities as men. A large literature on gender differences in outcomes exists, whereas the formal rights of women have received increasing attention only recently.[2]

We start by documenting the salient facts on women's rights in relation to economic development. In contemporary cross-country data, measures of women's rights and development are highly correlated.[3] That women in today's least-developed countries have the least legal rights might suggest that rights will expand naturally once economic development takes hold, just as they did in developed countries. However, there are important differences between today's poor countries and the historical situation in rich countries. Focusing on the cases of the United States and England, we show that the historical expansion of women's rights unfolded through distinct stages: Basic economic rights came first, political rights were next, and equal treatment in the labor market and greater control over their own bodies ultimately followed. In contrast, in most African countries, women gained formal political rights (as part of the end of colonialism) before obtaining economic rights. Moreover, there are many specific traditions (such as foot binding, child marriage, and witch killings) affecting the rights of women that are specific to certain cultures. Contemporary phenomena, such as HIV/AIDS, sex-selective abortions, and international sex trafficking, also represent challenges to gender equality that were not present in earlier time periods (Kristof & WuDunn 2009).[4]

After reviewing the facts, we describe the economic consequences of women's rights. The bulk of the literature focuses on the effects of property (often land) rights for women.

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[1]Although the focus is on formal rights, we sometimes also describe de facto rights, such as whether violence against women is accepted in a society.

[2]There exists a substantial body of work on other examples of expanding legal rights, such as the abolition of slavery and franchise extensions in the nineteenth century. However, explanations for these phenomena (such as the threat of violence and revolution) usually do not fit the case of women's rights, calling for a separate analysis.

[3]Duflo (2005) and Sinha et al. (2007) provide surveys on the relationship between gender inequality and development (see also World Bank 2012).

[4]For example, a myth in some African tribes is that sex with a virgin cures HIV (Leclerc-Madlala 2002).

In line with economic intuition, a number of empirical studies find that more rights lead to a redistribution of resources toward women and higher investment in both physical and human capital. Some studies find a decrease in fertility when women obtain more economic rights. Furthermore, equality in the division of marital assets tends to decrease female labor force participation. There is also research on the economic consequences of the inclusion of women in politics through suffrage and gender quotas. The main finding here is that when women are involved in politics, both as voters and as policy makers, the composition of government spending shifts toward higher expenditures related to health and children. Some studies also find an overall increase in government expenditures, but here the evidence is less robust. Finally, improvements in women's control over their own bodies seem to increase their career prospects and life satisfaction and may positively affect female bargaining power in the household.

The political-economy literature on the origins of women's rights is relatively small.[5] Why was there a change in women's rights as economic growth took hold? Considering that women are physically weaker than men, it is not surprising that men initially dominated society and chose to endow women with an inferior legal position. What is more puzzling is that men ultimately gave up their control over women. A recent literature tries to understand the economic forces behind the expansion in women's rights. The forces can be grouped into two broad categories. On the one hand, general cultural changes may have changed male attitudes toward women's rights. On the other hand, technological change may have altered men's economic incentives for extending rights to women. We discuss evidence for each explanation. Although culture may have played some independent role, the existing explanations suggest that technological change may have driven both cultural attitudes about women's rights and the expansion of rights.

The findings on the consequences and origins of women's rights suggest that causality between economic development and women's rights runs in both directions. We conclude our survey by discussing the theory of Doepke & Tertilt (2009), which captures the feedback between economics and politics in a model in which human capital–driven growth and the expansion of women's rights mutually reinforce each other. In the model, men initially have all the power, but they can vote to endow women with economic rights that give them more bargaining power in marriage. As voters, men face a trade-off between the bargaining power of their own wives (which they would prefer to be low) and the bargaining power of other men's wives (which they would prefer to be high). There are two different reasons why men would like women other than their own wives to have power. First, because women attach more weight to the future well-being of their children, empowering women leads to faster human capital accumulation. Men benefit from a general rise in education because education levels under patriarchy are inefficiently low. Second, men more specifically would like their own daughters to have rights, so as to protect them from exploitation by their husbands. Doepke & Tertilt show that men's incentives to support women's rights depends on the return to education. Thus technological change that increases the demand for human capital can endogenously trigger female empowerment. Conversely, once women have rights, human capital accumulation speeds up even more, implying that political change feeds back into economic development.

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[5]The seminal work by Boserup (1997 [1970]) is the first economic analysis of how the position of women changes with development. However, Boserup does not deal with the political economy of women's legal rights, which is our focus here.

Section 2 gives an overview of the basic facts on women's rights across countries and throughout history. In Section 3, we discuss the economic consequences of various forms of women's rights. Section 4 takes a political-economy perspective to analyze the driving forces behind changes in women's rights. In Section 5, we review the theory of Doepke & Tertilt (2009), in which skill-biased technical change drives both economic development and the expansion of women's rights. Section 6 concludes.

2. THE FACTS

In this section, we illustrate the wide heterogeneity in women's legal rights around the world, documenting the close association between women's empowerment and economic development. We start with a cross-country comparison and then move to a brief historical description for two countries: England and the United States.

2.1. Women's Rights Across Countries

There is tremendous variation in women's legal rights across countries. On the whole, contemporary data support the notion of a strong link between women's rights and development.

Figure 1 shows a scatter plot of the gender empowerment measure (GEM; an index constructed by the United Nations Development Program) and GDP per capita across countries (see the Appendix for a detailed data description). The correlation coefficient of 0.8 suggests a strong connection between women's rights and economic development.
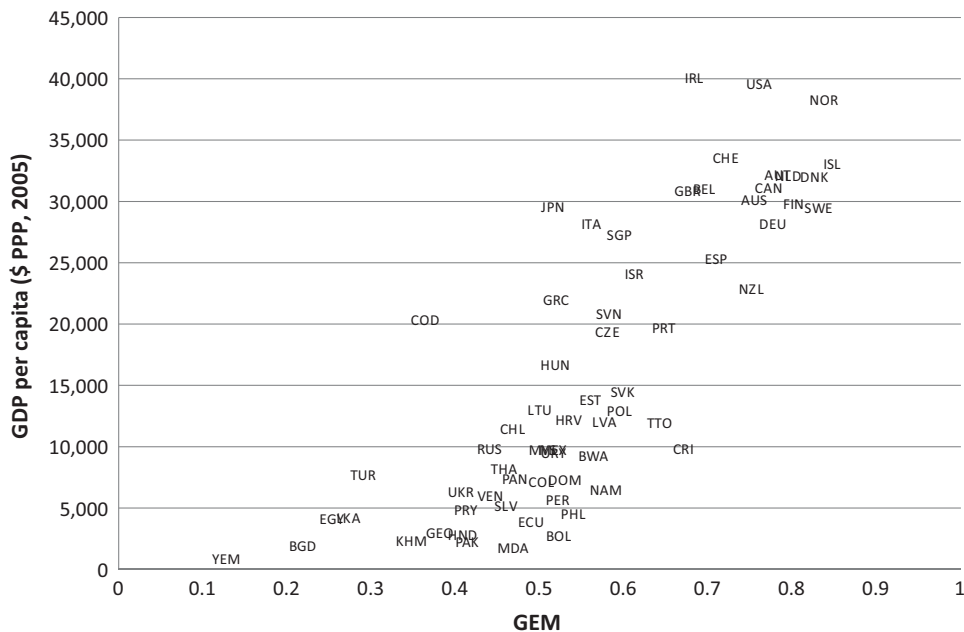
Figure 1

Female empowerment and economic development across countries. Abbreviations: GEM, gender empowerment measure; PPP, purchasing power parity.

The GEM is a mixture of legal rights and economic outcomes for women. Given our emphasis on formal rights, in **Table 1** we display several measures of female empowerment that capture the concept of legal rights more closely. The table gives average values for four groups of countries based on income and also includes the United States as a benchmark. We list values for individual countries in **Table 4** in the Appendix.

Table 1 contains several measures of property rights. A value of 1 for a country means that women have full property rights, whereas a zero means they do not. The data show that women in high-income countries have almost equal access to land, property, and credit as men do, whereas women in many low-income countries are excluded. The relationship between women's property rights and development is also apparent in **Figure 2**, which plots women's access to land relative to GDP per capita. In all countries with a per-capita income of $20,000 or above (with the exception of Israel), women have equal access to land, whereas most low-income countries cluster on the lower left-hand corner of the graph.

Table 1 Women's rights across countries by income group

Measure of women's rights	United States	High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries
Property rights					
Women's access to land	1	0.92	0.83	0.79	0.30
Women's access to bank loans	1	0.98	0.92	0.85	0.55
Women's access to property	1	0.98	0.93	0.89	0.52
Family law					
Repudiation	0	0.07	0.12	0.16	0.28
Polygyny	0	0.11	0.18	0.25	0.67
Parental authority	1	0.89	0.74	0.75	0.26
Inheritance discrimination	0	0.12	0.28	0.29	0.67
Rights related to a woman's own body					
Female genital mutilation	0	0.04	0.03	0.03	0.32
Violence against women	0.33	0.35	0.50	0.50	0.66
Freedom of movement	0	0.02	0.09	0.00	0.12
Obligation to wear a veil in public	0	0.04	0.15	0.15	0.18
Contraceptive prevalence (%)	76.4	70.8	52.9	57.3	28.1
Political rights					
Median year of suffrage	1920	1919	1946	1944	1957
Women in parliament (%)	15	21.3	15.1	14.0	13.0
Gender empowerment measure	0.76	0.68	0.54	0.44	0.33

For data sources and variable descriptions, see Appendix A.1.
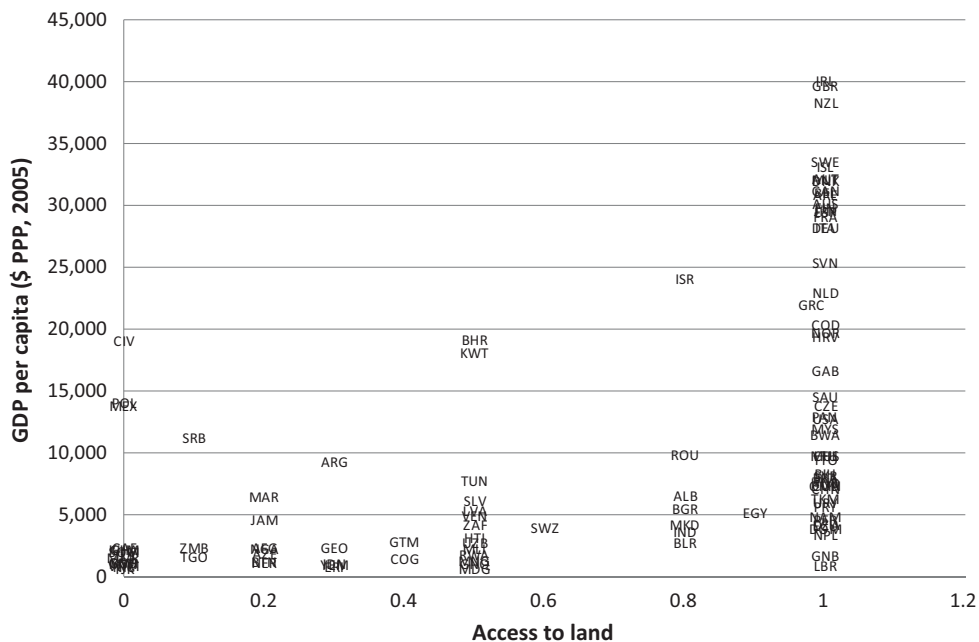
Figure 2

Access to land and economic development across countries. Abbreviation: PPP, purchasing power parity.

Many countries have laws related to women's role in the family. For example, "parental authority" is a measure of child custody rules, normalized such that a low value means that mothers do not have the same authority as fathers. As **Figure 3** shows, parental authority is equal for fathers and mothers in essentially all high-income countries, whereas in low-income countries, parental authority is mostly in the hands of men. "Inheritance discrimination" is a variable that measures whether there is a gender bias in inheritance practices, ranging from zero (no gender bias) to 1 (males are favored). The data show that sons are strongly favored over daughters in low-income countries and are somewhat favored in middle-income countries, whereas there is no distinction between sons and daughters in the United States. "Repudiation" relates to divorce law. A high number means that husbands can unilaterally cancel the marriage contract, which leaves women without any protection in divorce. A low number means that repudiation is not allowed. Again, we see that repudiation is common in low-income countries, whereas it is essentially nonexistent in high-income countries.[6] Another variable related to marriage law is "polygyny." A high number means polygyny is a legally (or socially) acceptable practice, whereas a low number means it is not. Although the (non)acceptability of polygyny is not exactly a right for women, a marriage law that allows polygyny establishes an asymmetry between men and women, as in those same countries polyandry, the practice of women marrying multiple men, is typically not allowed. The data show that the acceptability of polygyny decreases with income and is nonexistent in high-income countries.[7]

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[6]The only high-income countries that allow repudiation are Bahrain and the United Arab Emirates.

[7]There are few exceptions in the Middle East (Bahrain, Kuwait, the United Arab Emirates, and Israel).
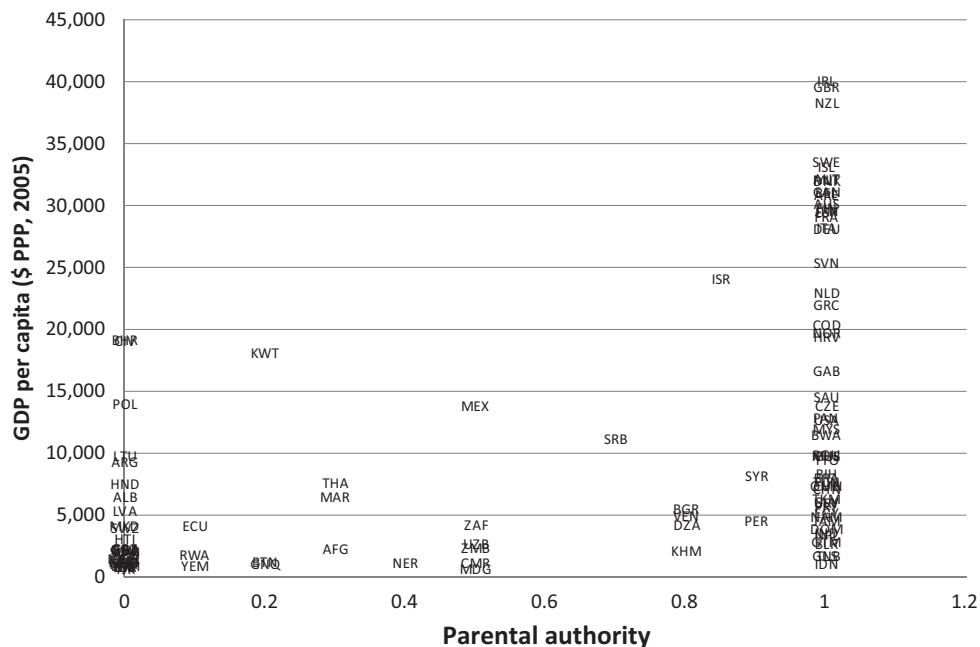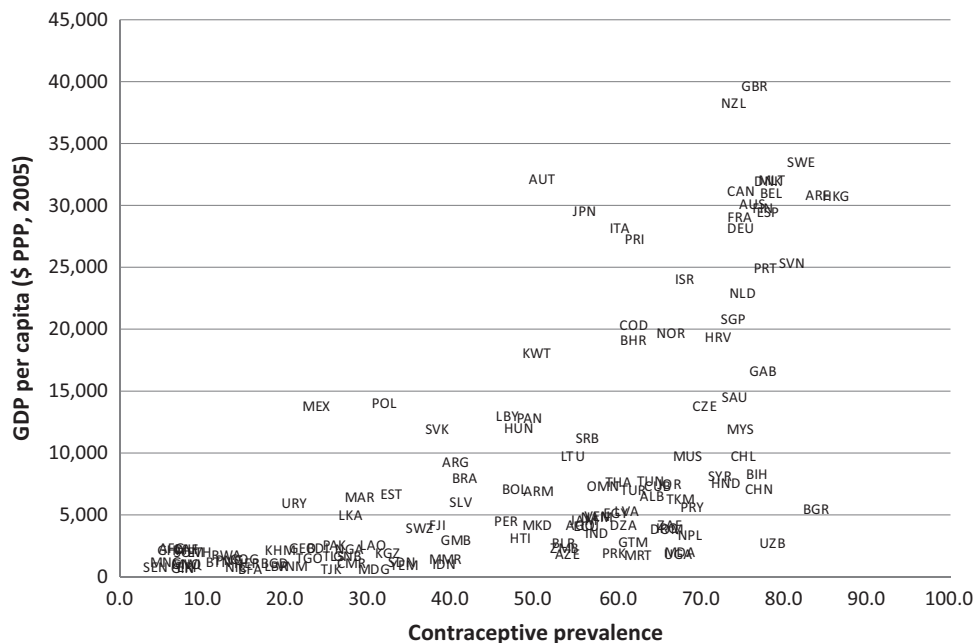
Figure 3

Equality in child custody and economic development across countries. Abbreviation: PPP, purchasing power parity.

How much control do women have over their own bodies? High-income countries have strict laws against rape and domestic violence, thereby granting women essentially full control over themselves. This is not the case in all parts of the world. The variable "violence" in **Table 1** is a summary index of legislation punishing acts of violence against women, including rape, domestic violence, and sexual harassment. The value for low-income countries is about twice as high as for high-income countries, showing that the protection from violence is much weaker in poor countries. A specific type of violence against the female body is the practice of "female genital mutilation," which essentially exists only in low-income countries. "Freedom of movement" is also severely restricted in poor countries. Similarly, in many poor countries, women are obliged to wear a veil. Also related to control over one's own body is access to contraception. Because data on the legality and availability of different forms of contraception are difficult to obtain, **Table 1** simply shows the percentage of women using modern methods of birth control.[8] The strong positive correlation between contraceptive prevalence and economic development is illustrated in **Figure 4**.

Finally, let us consider political rights. Suffrage (i.e., the right to vote and to run for public office) was extended much earlier in high-income countries (median year of 1919) than in low-income countries (median year of 1957). Another measure related to the political process (even though not directly a right) is the percentage of seats in parliament that are

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[8]In some developing countries, access to contraceptives may be limited not only by low availability, but also by legal and customary restrictions that force women to seek their husband's consent to access family planning services (e.g., Ashraf et al. 2010).

Figure 4

Contraceptive prevalence and economic development across countries. Abbreviation: PPP, purchasing power parity.

held by women. Even if the women's share is far from equal to the men's share in most countries, high-income countries exhibit a higher share (21.3%) compared with the rest of the world. Interestingly, the slope of both indicators with respect to income is not very steep, in particular when moving from middle-income to low-income countries.

2.2. The History of Women's Rights in England and the United States

The legal position of American and English women has changed dramatically over the past two centuries. We discuss these two countries together because the evolution of rights is remarkably parallel. The initial situation was also similar, as the legal system in both countries is grounded in the common law (with exceptions in a few US states that were initially colonized by Spain or France).

The changes to women's rights over the past 200 years can be grouped into three phases. During the second half of the nineteenth century, women gained economic rights related to property, child custody, and divorce. During the early twentieth century, political rights were extended to women. Finally, women gained full equality in the labor market and improved rights over their own bodies. **Tables 2** and **3** list the most important milestones in women's rights for the United States and England, respectively.

Up until the nineteenth century, under the common law women lost their legal identity upon marriage: They could not hold property or land in their own names, or write wills or contracts, nor did they have legal control over their own children. The legal rights of husband and wife were merged upon marriage and exercised exclusively by the husband (Hecker 1971). One of the earliest changes in the legal position of married women

Table 2   US timeline for women's rights

Year	Milestone
1769	"The very being and legal existence of the woman is suspended during the marriage" (from English common law).
1785	Pennsylvania was the first state to pass a statue that allowed both men and women to file for divorce under extreme circumstances (desertion of at least four years, bigamy, sexual incapacity before marriage, and cruelty). Other states followed shortly.
1838	Kentucky gave school suffrage (the right to vote at school meetings) to widows with school-age children.
1838	Iowa was the first state to allow sole custody of a child to its mother in the event of a divorce.
1839	Mississippi was the first state that gave married women limited property rights.
1844	Maine passed a sole trader law that granted a married woman the ability to engage in business without the need for her husband's consent. Maine also passed a property law that granted married women separate control over property.
1857	Maine passed an earnings law that granted married women the rights to their own earnings.
1861	Kansas gave school suffrage to all women. Many states followed before the turn of the century.
1869	Wyoming was the first state that gave women the same voting rights as men. Most states did not follow until the beginning of the twentieth century.
1886	All but six states allowed divorce on the grounds of cruelty.
1895	Almost all states had passed some form of sole trader laws, property laws, and earnings laws.
1920	The Nineteenth Amendment to the US Constitution was passed, granting all women the right to vote.
1965	In the *Weeks v. Southern Bell* ruling, many restrictive labor laws were lifted, opening previously male-only jobs to women.
1970	The Uniform Marriage and Divorce Act promoted the equitable distribution of property.
1973	*Roe v. Wade* legalized abortion.
1974	Credit discrimination against women was outlawed by the US Congress.
1975	States were denied the right to exclude women from juries.
1981	The Supreme Court ruled that excluding women from the draft is unconstitutional.

Information taken from Hecker (1971), Salmon (1986), and Khan (1996).

concerned child custody rules. In 1838 Iowa was the first US state that permitted custody to mothers, with other states following shortly thereafter (Mason 1994). In England, the Custody of Infants Act was passed in 1839 and gave mothers the possibility of custody for children below seven years of age. After several further reforms, by the end of the nineteenth century women could be awarded custody of all minor children in the case of divorce.

Table 3   England timeline for women's rights

Year	Milestone
Until 1850	There was stark disparity between the legal rights of married versus single women. Single women were considered femes sole, which allowed them the right to make contracts and own property in their own name. Married women were legally considered femes covert, which meant that upon marriage, their legal rights merged and became that of their husbands. Married women had practically no rights regarding property, child custody, or the ability to make contracts.
1839	The Custody of Infants Act granted mothers (under special circumstances) custody of children under seven years of age in the event of divorce.
1857	The Matrimonial Causes Act permitted secular divorce, allowing both men and women to file. However, this law allowed men to file on the grounds of adultery, whereas women could initiate a divorce only if adultery was coupled with incest, bigamy, cruelty, or desertion. This act also gave divorced women the status of femes sole.
1869	Municipal suffrage was granted to single women and widows.
1870	An act provided public elementary education in England and Wales. This act created school boards and gave women school suffrage.
1870	The Married Women's Property Act granted women limited control over their earnings and modest legacies. This act did not give women the same property rights as men; rather it was intended to protect the most vulnerable women from their husband's exploitation.
1873	The second Custody of Infants Act allowed mothers to petition for custody of children up to 16 years of age.
1878	The Matrimonial Causes Act allowed courts to absolve a wife from her obligation to cohabit and to require her husband to pay a weekly sum to support her, if he had been convicted of aggravated assault against her and she was considered in further danger.
1882	The Married Women's Property Act ("an Act to consolidate and amend Acts relating to the Property of Married Women") gave women the ability to hold separate property and to contract with respect to their separate estates.
1886	The Married Women Act allowed maintenance orders to be issued against men who neglected, willfully refused to support, or deserted their wives.
1888	County suffrage was conferred.
1894	Parish and district suffrage gave both single and married women the right to elect and be elected to parish and district councils.
1907	Women became eligible to become mayors, aldermen, and county and town councilors.
1918	The Representation of the People Act gave women the right to vote provided they were more than 30 years of age and either they or their husbands met a property qualification.
1918	The Parliament (Qualification of Women) Act allowed women to stand for Parliament.
1928	The Equal Franchise Act gave women equal voting rights with men.
1935	An act passed that secured a married woman's right to assume personal liability for her contracts.

Information taken from Hecker (1971), Shanley (1986), Kertzer & Barbagli (2001), and the British Parliament archives (available at **http://www.parliament.uk**).

Divorce laws were also relaxed (and made more symmetric) during the nineteenth century. A key step was the 1857 Matrimonial Causes Act in England. In the United States, by the end of the century divorce was allowed on the grounds of cruelty in almost all states (Griswold 1986). Another key area of reform concerned marital property law. Maine was the first state that passed a law to allow married women to own separate property in their own names in 1844. By the end of the century, all married American women had access to some form of property and earnings protection (Khan 1996). In England, the Married Women's Property Act was passed in 1870 and expanded in 1874 and 1882, giving English women control over their own earnings and property (Holcombe 1983, Combs 2005).

By 1900, the initial expansion of women's economic rights was complete, yet women still lacked most political rights. The women's suffrage movements began to emerge during the first half of the nineteenth century. In the United States, a handful of Western states had already granted women's suffrage during the nineteenth century, starting with Wyoming (1869) and Utah (1870). However, in the majority of states, the enfranchisement of women followed only after the Nineteenth Amendment to the US Constitution, which granted full voting rights to women in 1920 (Braun & Kvasnicka 2010). Similarly, British women gained partial suffrage through the Representation of the People Act of 1918.[9] In the same year, all women over 21 years old were granted the right to stand for Parliament through the Parliament (Qualification of Women) Act. Equal voting rights with men were achieved only through the Representation of the People Act of 1928, also known as the Equal Franchise Act, which granted universal suffrage to women over age 21.[10]

Even by the mid-twentieth century, women had not gained legal rights equal to men along all dimensions. In particular, women continued to face unequal legal treatment in the labor market long after they had gained the right to vote. In the United States, restrictions on the hours worked, wages, and work conditions of female employees were introduced in almost all states during the late nineteenth and early twentieth centuries, typically disguised as protective legislation (Goldin 1990, chapter 7). For example, women were not allowed to work night shifts, yet night-shift experience was required to move up the career ladder (Huber 1976). Similarly, marriage bars, which excluded married women from certain occupations such as clerical work and teaching, were common until World War II. Legislation that promoted equal treatment in the labor market was introduced during the second half of the twentieth century: the Civil Rights Act of 1964 in the United States and the Equal Pay Act of 1970 in England. Thus equality in the labor market was achieved relatively late, and indeed, to the extent that gender discrimination is still an issue of public debate today, the focus is usually on equality in the labor market.

The twentieth century also saw an expansion of women's control over their bodies. Until 1976, marital rape was legal in every state in the United States. Although by now marital rape is a crime everywhere, some states still do not consider it as serious as other forms of rape. Access to birth control was initially severely restricted. In the United States, the Comstock Act of 1873 outlawed the dissemination of birth control devices or information through the mail. By the 1950s and 1960s, most states had legalized birth control, but many state laws still prohibited the dissemination of information about contraception, and some states still prohibited the possession of contraception. A 1965 Supreme Court

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[9]The act gave the right to vote to women over the age of 30 who met minimum property qualifications.

[10]Acts are available at **http://www.parliament.uk**.

decision limited states' ability to restrict access to birth control (*Griswold v. Connecticut*). Of course, technological change was also important for expanding access, in particular through the introduction of the birth control pill. In the United States, the Food and Drug Administration approved the pill in 1960. However, until the end of the 1960s it could not be prescribed to single women below the age of majority without parental consent. The early 1970s saw a liberalization of abortion with the lifting of bans in all states by 1973 as a result of the Supreme Court decision in *Roe v. Wade* (Goldin & Katz 2002).

Another area of reform in the United States during the 1970s concerned the allocation of assets upon divorce. Most US states were originally based on the British common law system, where upon divorce assets were awarded to the spouse who held the formal title. Only eight states, primarily those with a French or Spanish colonial legacy, had a community property system, in which assets were divided equally. The distribution of property rights over marital assets became a relevant issue as divorce laws were liberalized and divorce rates increased in the second half of the twentieth century. In 1970, the federal Uniform Marriage and Divorce Act provided guidelines for title-based states for adopting the equitable distribution of property in order to grant women a larger share of assets in divorce settlements (Golden 1983).[11] The last title-based state to introduce the equitable distribution of property was Mississippi in 1989 (Freed & Walker 1990).

3. ECONOMIC CONSEQUENCES OF EXTENDING RIGHTS TO WOMEN

In this section, we discuss the economic consequences of the expansion of women's rights. One first-order effect is to redistribute resources (property, earnings, decision power) from men to women in the household, in the labor market, or on the ballot. Granting property rights to women also removes inefficiencies in their economic behavior and increases the scope for investment in their human capital. Women's political rights (as voters and as representatives) have been shown to have a substantial impact on policy outcomes and favor the public provision of goods, in particular in health and education. Below we summarize a number of empirical and theoretical studies that have examined the implications of extending economic and political rights to women.

3.1. Women's Property Rights

In England, the Married Women's Property Act of 1870 greatly expanded women's control over personal property within marriage.[12] In response, women shifted the composition of their portfolios from real property (such as a cottage) to more personal property (such as money and furniture). However, no difference was observed in their total asset holdings (Combs 2005), possibly because of their limited earning possibilities. The extension of economic rights also had an effect on the economic lives of women living in the United States. Like in England, the immediate impact was limited by the relatively low participation of women in the labor market during the nineteenth century. Nevertheless, patent data from 1790 to 1895 reveal that granting economic rights to women, in particular rights that gave a woman the ability to own and operate a business without her

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[11]In equitable-distribution regimes, assets are divided by courts, irrespective of the title to the property, to achieve equity.

[12]Even prior to this act, women had some control over their real assets.

husband's permission or oversight, led to more patenting by female inventors, especially in urban areas (Khan 1996). Similarly, between 1850 and 1920, the relative investment in the human capital of women increased in those states in which they had gained property and earning rights (Geddes et al. 2009). However, there is no evidence that the expansion of economic rights had any significant impact on female labor force participation, at least between 1860 and 1900 (Roberts 2006).

In more recent decades, women's property rights over marital assets upon divorce have had a sizeable impact on household behavior in the United States (see Hamilton 1999 for an analysis of wives' property rights over marital assets in Québec during the nineteenth century). For married couples, such rights influence the outside option in marital bargaining and can thus affect the intrahousehold allocation.[13] Community property regimes, which often award more resources to women upon divorce than title-based regimes, are associated with lower hours of work by women and higher hours of work by men (Chiappori et al. 2002). In the 1970s and 1980s, the elimination of the title-based system brought an increase in the amount of assets awarded to women. However, an equal division of property may not always grant more assets to women, or to secondary earners more generally, compared with separate property. Women who consume as much as their husbands in marriage, but who have lower permanent income, may be better off in a separate property system, in which they can accumulate more savings than their husbands to avoid a drop in consumption upon divorce. The equal division of property may also generate a distortion in the incentives to accumulate assets during marriage, as it prevents spouses from saving proportionally to their consumption in marriage. Enforceable prenuptial agreements may be better suited to facilitating consumption smoothing upon divorce, especially for women (Voena 2011).

In developing countries, where agriculture usually accounts for a large share of output, gender disparities in access to land and in the security of land property pose particular challenges (Joireman 2008, World Bank 2012). From a theoretical viewpoint, we would expect the lack of secure property rights to negatively affect the incentives to invest (Besley 1995). Indeed, Zimbabwean women are less likely than men to invest in tree planting when their property rights are insecure due to likely changes in their marital status. However, they are as likely as men to plant when their land tenure is secure (Fortman et al. 1997). The lack of well-defined property rights for women is a substantial barrier to efficient agricultural production in sub-Saharan Africa. Udry (1996) shows that the profitability of land is lower for wives than for husbands. Goldstein & Udry (2008) suggest that lower profitability may result from the land tenure system. Fear of expropriation, which is more likely for women, leads them to be less likely to let their land fallow and thus negatively affects the productivity of their plots.

Access to secure property rights may also influence women's bargaining position within their marriages. For instance, land property for women in Nepal is associated with greater intrahousehold empowerment of wives and better health outcomes for the children (Allendorf 2007). Examining a land-titling program in Peru that explicitly targeted

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[13]Allocations are also affected by laws that govern the circumstances under which divorce is allowed. In the United States, the introduction of unilateral divorce, which allows one spouse to obtain divorce without the consent of the other, was associated with a significant reduction in rates of domestic violence and female suicide (Stevenson & Wolfers 2006) and with changes in the labor supply of women (although evidence on labor supply is not conclusive; see Gray 1998 and Stevenson 2008). Eswaran & Malhotra (2011), in contrast, find that more female autonomy increases domestic violence in India, as men use violence to increase their bargaining power.

gender equality in land ownership, Field (2003) establishes a causal relationship among land rights, female empowerment, and lower fertility. Women who became more likely to appear as owners on property documents as a result of the program were more likely to participate in household decision making and were significantly less likely to give birth.[14]

Summing up, the evidence from a variety of contexts seems to suggest that more property rights for women lead to higher investment, both in physical and human capital, as well as lower fertility.

3.2. Women's Political Rights

Empirical evidence indicates that the extension of suffrage to women affected legislative behavior, which is what a model of electoral competition would predict. Female suffrage seems to have shifted public spending toward welfare programs and public health. In the United States, the enfranchisement of women was associated with a 24% increase in state social spending, and in particular with higher local public health spending. Other types of public spending did not respond to women suffrage. Female suffrage was also associated with an 8%–15% decline in child mortality (Miller 2008). Further empirical evidence suggests that not only the composition but also the total amount of public spending was affected: Suffrage coincided with more liberal voting patterns and an increase in government expenditures (Lott & Kenny 1999). A similar pattern has been observed in six Western European countries between 1869 and 1960 (Aidt & Dallal 2008). Abrams & Settle (1999) use OECD (Organization for Economic Co-operation and Development) data between 1960 and 1992 to examine the impact of Switzerland's extension of the franchise to women in 1971. They document a 28% increase in social welfare spending with respect to other neighboring countries that had already granted women's suffrage. More recently, Funk & Gathmann (2008) examine survey data on all federal votes in Switzerland between 1981 and 2003, in which voters make direct decisions on a broad range of issues two to three times a year. They find only limited evidence that women favor a larger government, but female voters and politicians have a substantial impact on the composition of public spending, favoring public health provision, equal gender rights, environmental protection, and unemployment and social security provisions rather than nuclear energy and the military.

Why do women vote differently from men? One argument is that women have intrinsically different preferences and, in particular, care more about children and public health and less about defense than men. A different argument is that women face different economic conditions than men, such as lower incomes and higher financial vulnerability. As a result of these different circumstances, women may demand more public welfare programs. The enfranchisement of women would then increase public spending: As the income of the decisive voter falls relative to the mean, she supports more governmental redistribution (Abrams & Settle 1999). Edlund & Pande (2002) examine the impact of changes in divorce laws, the rise in single motherhood, and female poverty in the United States and find evidence that supports the hypothesis that the political gender gap responds to changes in the economic gender gap (see also Edlund et al. 2005 for an analysis of this hypothesis in Europe).

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[14]Along with different preferences for children, differences in the opportunity cost of childbearing also may explain why empowering women can reduce fertility (Iyigun & Walsh 2007).

Other evidence on women's political rights comes from natural experiments that instituted quotas for female politicians. In most countries, women occupy only a small fraction of legislative positions and are generally less likely to participate in politics (World Bank 2012).[15] Gender quotas have been introduced in some countries to expand female presence in politics. The majority of empirical evidence on the impact of gender quotas comes from India, where the specific design of the program allows for causal inference (for a comprehensive review on gender quotas, see Pande & Ford 2011). Exploiting random variation in reserved and unreserved seats, Chattopadhyay & Duflo (2004) find that female village council heads in West Bengal and Rajasthan favor spending on infrastructure that is relevant for women in their community.[16] Data on state legislators indicate that in the United States female policy makers affect the composition of public spending as well: More women in state governments contributed to the rise in health care spending as well as a decreased growth rate on prison spending (Rehavi 2007). However, data from US city mayor elections suggest that women's impact may not be as relevant in local governments (Ferreira & Gyourko 2010).

3.3. Women's Rights over Their Bodies

The twentieth century also saw fundamental changes that gave women greater control over their bodies and their lives. Legal access to oral contraceptives gave women control over the timing of childbearing, and thus their labor market participation (Bailey 2006) and their access to professional careers (Goldin & Katz 2002). Access to contraceptives can also improve women's intrahousehold bargaining position (Chiappori & Oreffice 2008). In fact, data from Europe suggest that allowing abortion and oral contraceptives increased women's self-reported life satisfaction (Pezzini 2005).[17] In some developing countries, access to contraceptives may be limited not only by low availability, but also by spousal discordance in the demand for children and husband consent requirements. Ashraf et al. (2010) found that Zambian women who were offered family planning services alone were significantly more likely to use them compared with women who were offered the same services in the presence of their husband.

More rights over their own bodies likely led to other changes beyond women's reproductive choices. In a theoretical paper, Tertilt (2006) analyzes the impact of giving women property rights over their own bodies in the context of polygyny in Africa. The analysis shows that allowing women to make their own marriage decisions (in contrast to fathers owning daughters and selling them to future husbands) leads to an increase in savings, a decrease in fertility, and thereby higher output per capita (see also Tertilt 2005 for an economic analysis of polygyny). The reason is that self-ownership of women decreases the

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[15]Lower access to education does not appear to explain the lower involvement of Kenyan women in community participation, although it increases their political knowledge (Friedman et al. 2011).

[16]Exposure to quotas seems to also reduce voters' gender bias and lead to the greater likelihood of the election of a female policy maker after reservations are removed (Beaman et al. 2008). Other evidence on female representatives in India uses variation due to close elections and indicates that the impact of women policy makers is closely tied to their caste (Clots-Figueras 2007) and has only limited impact on education policy (Clots-Figueras 2011).

[17]Access to contraceptive and to abortion may not always increase the well-being of women. Akerlof et al. (1996) suggest that the availability of such technologies may have eroded the bargaining power of some women, who remained pregnant out of wedlock, and thus decreased the frequency of shotgun marriages and increased poverty among women. More generally, it is interesting to point out that the overall self-reported satisfaction of women has been consistently declining both in absolute terms and relative to men since the 1970s (Stevenson & Wolfers 2009).

returns on daughters for men, who start investing more in physical capital and less into acquiring wives and large families.[18]

4. POLITICAL ORIGINS OF EXPANDING WOMEN'S RIGHTS

We now turn to the political economy of women's rights. Why did legislators and voters, all of whom were male until female suffrage was introduced, decide to empower women? And what explains the timing of the reforms?

4.1. Cultural Explanations

Traditionally, the spread of women's rights has been mostly attributed to cultural changes. For example, historians emphasize the role of the women's movement in changing attitudes about gender equality and ultimately convincing legislators to support women's rights (see, e.g., Keyssar 2000). From this perspective, women's rights have been grouped with a general trend toward more rights for various groups in society, including the abolition of slavery, rights for gay people, and even animal rights. These cultural changes in turn have been argued to be rooted in the Age of Enlightenment, which emphasized equality among people. However, not all Enlightenment philosophers agreed that equality should extend to equality between the sexes. Whereas some favored female emancipation, many others, such as Kant and Rousseau, remained strongly opposed.[19]

Once considered beyond the realm of economics, cultural change has recently become an area of active economic research. One caveat is that this literature concentrates on the impact of culture on economic choices (such as female labor force participation) and the evolution of culture itself; in contrast, it does not deal explicitly with women's legal rights and the political-economy implications of cultural change [one exception is Givati & Troiano (2011), who examine how cultural attitudes toward gender-based discrimination influence optimal maternity leave policy]. Nevertheless, recent findings in the economics of culture suggest pathways through which cultural changes may have promoted political reform.

Several recent papers empirically assess the importance of culture using data from second-generation immigrants in the United States (Antecol 2000, Fernández & Fogli 2009, Alesina & Giuliano 2010). The main finding is that the choices of second-generation Americans concerning fertility and female labor supply are correlated with average fertility and labor-force participation rates in their countries of origin. Because second-generation Americans face the same economic conditions and circumstances as other Americans, these findings are interpreted as evidence for a cultural transmission of preferences. For example, the parent generation (i.e., the immigrants) may have formed cultural attitudes about family size or traditional gender roles while growing up in the home country and then passed on the same views to their American-born children. There is also evidence for a transmission of preferences via television. Chong et al. (2008) find that exposure to soap operas in Brazil led to a decrease in fertility. Similarly, Oster & Jensen (2009) show how

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[18]Similarly, requiring the consent of the marrying individual to the marriage, and not the consent of his family only, favors younger generations and may increase investment (Edlund & Lagerlöf 2006).

[19]For example, Kant and Rousseau argued that women should not be educated. Conversely, Marie Jean Antoine Nicolas Caritat, Marquis de Condorcet, was an early advocate for women's suffrage in his essay "Sur l'admission des femmes au droit de cité," published in 1790.

attitudes about the status of women changed with the arrival of cable television in rural India: The reported acceptability of domestic violence declined, reported son preference and fertility declined as well, and women's autonomy went up.

A number of theoretical papers develop explicit models of the transmission of culture. In Fernández et al. (2004), attitudes toward women's work are formed in childhood. Men who grow up with working mothers are more likely to marry women who remain in the labor force. Fogli & Veldkamp (2011) model culture as endogenously changing beliefs. Specifically, beliefs about the impact of working mothers on their children's success evolve as more information becomes available. The more women participate in the labor force, the faster beliefs change as the information content of observing one's peers increases. This evolution of beliefs leads to an S-shaped increase in female labor force participation (a related point is also made in Fernández 2007).

The evidence on evolving attitudes toward women's role in society suggests that cultural change may have contributed to political reform, by changing legislators' and voters' views about the society in which they want to live. However, this does not imply that cultural change is a deep driving force of political change by itself: The important question is why culture changed when it did. To this end, there is evidence that cultural norms often have economic origins. For example, Miguel (2005) relates the culture of witch killing in Tanzania to poverty. Using variation in rainfall as an instrument for poverty, he documents that witch killing was more prevalent in areas where lack of rainfall led to starvation. Hence killing women (and calling them witches) may have evolved as a solution to a severe economic problem. (Oster 2004 makes a similar point in the context of Renaissance Europe.) Cheung (1972) suggests that the tradition of foot binding in China (which results in crippled feet) was a way to establish property rights over daughters. Young girls were often relied on for weaving and spinning in the household. Bossen et al. (2011) argue that foot binding disappeared when the arrival of commercial cloths made the home production of these products unprofitable, which once again links cultural change to technological change. Alesina et al. (2011a,b) find that current cross-country variation in attitudes toward gender roles is related to historical agricultural practices, namely the extent to which agriculture was plow-based (for which male strength was important) versus hoe-based (which women could easily do). Finally, Greenwood & Guner (2009, 2010) argue that technological progress in home production and birth control technology led to falling marriage and divorce rates and more liberal attitudes toward premarital sex, respectively.

In sum, one interpretation of the evidence on culture is that the ultimate cause of political reform was economic change that altered attitudes toward women. However, attitudes are a slow-moving variable, and cultural transmission may have been important for the economic changes to reach their full effect, perhaps with a considerable lag. Of course, this still leaves open the question of exactly which kind of economic changes were responsible for changing attitudes toward women's rights, which is what we turn to next.

4.2. Explanations Based on Technological Change

Several papers argue that technological change, broadly defined, was responsible for the extension of economic rights to women during the nineteenth century (Geddes & Lueck 2002, Doepke & Tertilt 2009, Fernández 2009). Geddes & Lueck (2002) tie the expansion of rights to increasing labor market opportunities for women. Even though husbands initially had all legal power, they were unable to control how much effort their wives chose

to exert at work. When women had no rights, effort provision was inefficiently low. By endowing their wives with economic rights, husbands were able to induce their wives to put in more effort, leading to larger family incomes. In essence, men faced a trade-off between getting a larger share of a smaller pie or a smaller share of a larger pie. This trade-off shifted as women's labor market opportunities improved. One caveat for applying this logic to the nineteenth-century reforms is that married women's labor force participation was very low at the time and did not increase when economic rights were expanded.[20] However, the mechanism may be relevant for improvements in women's access to the labor market that took place in the twentieth century.

Whereas in Geddes & Lueck (2002) men's motivation is simply to maximize their consumption, in Doepke & Tertilt (2009) and Fernández (2009) men's political preferences are driven by concern for their daughters. The mechanism in Doepke & Tertilt (2009) relates to women's role in the education of children rather than in the labor market. By empowering women, men can improve the welfare of their daughters (at the expense of the sons-in-law) and ensure a better education for their grandchildren. These motives become more important when the return to human capital increases over time (we discuss this theory in more detail in Section 5). Fernández (2009) proposes a related theory in which fertility decline is the ultimate driving force of women's rights. As in Doepke & Tertilt (2009), men have conflicting interests in their role as husbands and fathers. As fertility declines, fathers desire to leave larger bequests to each child. However, without female rights, bequests to daughters are essentially confiscated by the sons-in-law. This problem increases in the size of the desired bequest and is thus exacerbated by declining fertility as well as increasing wealth. Thus the process of development that triggered the demographic transition and drove wealth accumulation may have also led men to support economic rights for women.

Bertocchi (2011) examines the reasons for extending voting rights to women. Once again, the argument is related to women's role in the labor market. In her model, people's preferred tax rate is decreasing in income. Given that on average women's earnings are lower than those of men, the inclusion of women in the political decision process leads to an increase in taxes, which most men oppose. However, as the gender wage gap declines (e.g., because of gender-biased technological progress), the gap between the tax rates preferred by male and female voters declines. If there is a societal cost of excluding women from the franchise, men will voluntarily give women voting rights once the tax gap is sufficiently small.

One way to test the various political-economy explanations for changing women's rights is to identify groups that historically were in favor of the expansion of women's rights. Some evidence of this kind can be derived from cross-state variation in the timing of changes in women's rights in the United States. Geddes & Lueck (2002) find that states with larger city populations, more female schooling, and higher per-capita wealth granted property rights to women earlier. In addition, Fernández (2009) finds that states with low fertility rates were also quick to expand women's rights.

Jones (1991) analyzes data on voting behavior in the US House and Senate on female suffrage during the nineteenth century. She finds that the sex ratio played a large role: Representatives from states with a large majority of men were more inclined to vote for suffrage than those with a more balanced sex ratio. Similarly, Braun & Kvasnicka (2010)

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[20]Moreover, there is no correlation between female labor force participation rates and women's rights in cross-state data (Roberts 2006).

argue that unbalanced sex ratios explain why Western states were the first to grant female suffrage. Giving women the right to vote was less costly for men in states where they were the majority, and it was hoped that suffrage would attract more women to the West. Jones (1991) establishes a link between prohibition and female suffrage. Those states where the liquor industry was particularly powerful were more opposed to women suffrage (women were more supportive of prohibition).[21] Although interesting, a large variation in sex ratios as well as the connection to prohibition are specific to the US context.

At the individual level, the presence of daughters has been shown to have a favorable effect on men's attitude toward women's rights. This finding has been documented among American legislators, but also in US, Canadian, and British household surveys (see Warner 1991, Warner & Steel 1999, Washington 2008, Oswald & Powdthavee 2010).[22] This finding is in agreement with the general notion that concern about the next generation is what drives men to support women's rights.

5. FEEDBACK BETWEEN ECONOMIC AND POLITICAL CHANGE: A THEORY OF WOMEN'S LIBERATION

Taken together, the studies discussed above suggest that causality between economic development and women's rights runs in both directions: Women's rights affect choices that feed back into development, and economic development in itself may be a key force driving the political expansion of women's rights. To examine this two-way relationship, we now discuss the theory of Doepke & Tertilt (2009), in which economic development and political change are mutually reinforcing trends.

Doepke & Tertilt focus on the expansion of economic rights for married women during the nineteenth century in England and the United States. As described in Section 2.2, these reforms took place before women gained the right to vote. Thus to explain why the reforms took place, one has to understand what men stood to gain from expanding women's rights. The argument laid out in Doepke & Tertilt (2009) is that men face a trade-off between the rights of their own wives and those of other men's wives. More legal rights for married women improve their bargaining position in the household and thus increase the female share of household consumption. Thus from a man's perspective, one's own wife should ideally not have any rights. At the same time, men also care about their daughters and therefore would like their daughters to have rights to protect them from exploitation by their husbands. Moreover, women attach a higher weight to the well-being of children, which implies that more bargaining power for women translates into higher education investments for children. Because men prefer a higher level of education for their grandchildren than their sons-in-law, this provides another motive for supporting women's rights. Based on this trade-off, Doepke & Tertilt argue that the ultimate cause of the expansion of women's rights is technological change that increases the return to education. If technology is such that human capital is irrelevant, men prefer patriarchy. In contrast, in a world with high returns to education, men care greatly about the education of their descendants, leading them to support women's rights.

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[21]Similarly, Berman (1987) shows that in Arizona in 1912–1916 it was mostly farmers, Mormons, and Western-born natives who favored prohibition, third-party candidates, and women's suffrage.

[22]However, a recent study based on US nationally representative data suggests that the presence of female offspring may increase conservative political preferences among voters (Conley & Rauscher 2010).

To illustrate this mechanism, we review the main model ingredients here. The economy is populated by overlapping generations of men and women in each period. There is random matching in the marriage market. Apart from gender, people are homogeneous, implying that all couples are identical. Men and women derive utility from their own consumption, their spouses' consumption, and the number and well-being of their children. The preferences are summarized by the following recursive utility function, indexed by gender $g \in \{m, f\}$:

$$U_g(c_g, c_{-g}, n, U_m', U_f') = u(c_g, c_{-g}, n) + \gamma_g\left(\frac{U_m' + U_f'}{2}\right).$$

Here c_g is own consumption, and c_{-g} denotes the spouse's consumption. Couples have equal numbers of sons and daughters. The number of boy-girl pairs is denoted by n, and U_m' and U_f' represent the utility of sons and daughters, respectively. The weight γ_g that people attach to the welfare of their children differs by gender. In particular, women care more about children: $\gamma_f > \gamma_m$.

The couple faces a common budget constraint. Each spouse is endowed with one unit of time, which can be used for working or raising and educating children. For simplicity, it is assumed that only women raise children. Therefore, men spend all their time working. Women, conversely, have to allocate their time optimally between working t_f and educating boys e_m and girls e_f. In addition to the education time, it takes ϕ units of time to raise a boy-girl pair. The female time constraint is therefore given by

$$t_f + (\phi + e_m + e_f)n \leq 1.$$

The labor of both spouses as well as their human capital is combined by a household production function to produce consumption goods. The household budget constraint for a family in which the wife and husband have human capital H_m and H_f is

$$c_m + c_f = A(t_f H_f)^\alpha (H_m)^{1-\alpha},$$

where $0 < \alpha < 1$.

The point of educating children is to increase their human capital. The human capital production function depends on education time e_g as well as the human capital of the parents:

$$H_g' = \max\{1, (Be_g)^\theta H_f^\beta H_m^{1-\beta}\},$$

where θ and B are technology parameters that determine the return to education, and β specifies the relative importance of fathers' versus mothers' human capital. Notice that children always receive at least one unit of human capital even if they are not educated. The interpretation is that people have basic productive skills, such as physical strength, that do not depend on receiving formal instruction. The presence of basic human capital implies that parents will not educate their children if the return to education is sufficiently low.

Each couple chooses fertility, the time allocation, and the division of consumption among the spouses. Given that men and women have different preferences (regarding the allocation of consumption between them and the education of the children), decisions must be made using some form of bargaining between the spouses. Doepke & Tertilt (2009)

assume that bargaining power depends on the political regime, i.e., women's legal rights. On the one extreme, when women have no legal rights, they also do not have bargaining power in the household. Hence men make all decisions—the "patriarchy" regime. On the other extreme, when women do have legal rights, they have better outside options, and thus they participate in household decision making. This case is modeled as cooperative bargaining—the "empowerment" regime.[23]

The political regime is determined through a vote by the male population. Because all men alive at a given time are identical, they agree on the preferred regime. However, if there is technological change, different generations of men face different political incentives. From the perspective of a male voter, the trade-off is between higher own consumption (under patriarchy) and higher well-being of daughters as well as faster accumulation of human capital (under empowerment).

Consider now what happens when, owing to technological change, the return to education increases over time. As long as the return is still low, parents prefer not to educate their children, people only have basic human capital, and there is no economic growth. In this situation men prefer patriarchy, as the gain from sharing power with women is relatively small.[24] Once the return to education surpasses a certain threshold, parents will start to educate their children. However, from a man's perspective, the speed of accumulation of human capital is inefficiently low. One reason for this is an externality in the marriage market: Men do not internalize that their children's human capital will also benefit their children's future spouses. This externality leads to underinvestment in human capital. A second channel is that given the structure of preferences, men disagree with their sons-in-law about the optimal education of grandchildren. These frictions do not matter as long as parents do not educate their children, but they become increasingly severe as the return to education keeps increasing. At some point, a second threshold is reached in which men are willing to sacrifice some own consumption to help their daughters and speed up the accumulation of human capital. By voting for women's rights, men can achieve exactly that: They have to share more resources with their wives, but they also provide more bargaining power to all other women in the economy (including their daughters), which leads to more investment in education. Once the empowerment regime is adopted, the political reform feeds back into economic change: The growth rate of output per capita increases because of faster human capital accumulation.

Formally, Doepke & Tertilt (2009) show that a gradual increase in the return to education θ leads to an endogenous transition from patriarchy to empowerment. The first effect of a rise in θ is that education starts to increase and fertility starts to fall. Ultimately, the return to education is sufficiently large for men to vote for empowerment. After the empowerment is implemented, the trends toward low fertility and more education accelerate even more.

According to the model, development (specifically, human capital accumulation) is a prerequisite for women's rights because men are willing to give up patriarchy only if the demand for human capital is high. In this sense, development causes women's rights. Conversely, women's rights lead to a further increase in the growth rate of human capital

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[23]More specifically, the patriarchy allocation maximizes the male value function only, whereas the empowerment allocation maximizes the equally weighted sum of the female and male value functions.

[24]Daughters would still benefit from the empowerment regime, but the human capital channel is absent.

and output. Thus women's rights also cause development. In sum, economic development and political change mutually reinforce each other.

Doepke & Tertilt (2009) also show that the predictions of the theory are consistent with the timing of the expansion of women's rights in England and the United States during the second half of the nineteenth century. The model implies that women's rights are first introduced during a phase of beginning mass education and declining fertility. And indeed, in the United States the total fertility rate declined from close to seven children at the beginning of the nineteenth century to only about 2.5 children for women born around the turn of the twentieth century. The elementary school enrollment rate increased dramatically over the same time horizon, from less than 50% at the beginning of the century to essentially 100% by the end. The expansion of legal rights took place right in the middle of these transitions. The picture for England is similar, with the main difference that fertility stayed high for the first half of the nineteenth century. When the major legal reforms were carried out in the second half of the century, fertility was falling fast and education levels were rapidly rising.

6. CONCLUSION

Less than two centuries ago, in England, the United States, and many other countries women had no legal existence separate from their husbands. Less than one century ago, women had no political rights in most countries. Not even half a century ago, even in the most developed countries women still faced severe discrimination in many areas of life, including the labor market. Today, we observe a high correlation between measures of women's rights and GDP per capita—women's rights are still lacking in most of the poorest countries of the world.

In this review, we describe the consequences of extending rights to women, in particular economic rights, political rights, and rights over their own bodies. In addition to redistributing resources to women, expanding women's economic rights appears to favor investment. Similarly, the introduction of women's suffrage has shifted the composition of public spending toward spending related to health, education, and children. We also examine the political origins of the expansion of women's rights in high-income countries. Although cultural changes may have played a role, we argue that the most promising explanation is technological change that shifted voters' and politicians' incentives for supporting women's rights. In particular, in the theory of Doepke & Tertilt (2009), technological progress that increases the return to schooling increases men's incentives to support women's rights. This finding gives hope for the position of women in today's poorest countries: As these countries develop, the extension of rights to women may happen naturally as a consequence of technological change that raises the demand for human capital.

At the same time, women in today's developing countries face a number of unique challenges that were not present in the historical development process of industrialized countries. For example, son preference appears to be more pronounced in several Asian countries today than it ever was in Europe (Das Gupta et al. 2003). This might be a result of modern technologies such as amniocentesis and ultrasound that allow the early detection of a fetus's gender, giving rise to selective abortion. Accordingly, in countries such as China or India, sex ratios of recent birth cohorts are quite skewed (Sen 1990). Even though one might think that the scarcity of women will eventually benefit them and lead to a

higher appreciation of daughters, so far no such shift in attitudes has been observed.[25] Rather, in some instances, the scarcity of women seems to make women's plight even worse, for example, through sex trafficking and bride kidnapping. To date, we still lack a systematic empirical and economic analysis of these issues.

At a more general level, we also need a better understanding of the nature of the gender asymmetries that underlie observed differences in behavior between men and women. One possibility is that men and women have different hard-wired preferences, for evolutionary reasons.[26] Indeed a sizeable part of the existing literature is implicitly or explicitly based on the assumption of a preference gap between men and women. However, a second possibility is that differences in economic and legal circumstances lead women to act differently from men. For example, if marital resources are not split evenly upon divorce, then women might favor more social insurance than men do. Similarly, if women have little access to savings technologies, they may invest more in children to insure their old-age consumption. As Doepke & Tertilt (2011) show, distinguishing these explanations for gender differences in behavior is difficult. For example, endogenous specialization in household production may lead women to act as if they cared more about children, even when the true preferences of men and women are symmetric.

In summary, this review shows that substantial progress has been made in understanding the causes and consequences of the expansion of women's rights. Yet many open questions remain. Most importantly, more empirical and theoretical research is needed to identify the precise mechanisms underlying the economics of women's rights and to analyze the specific challenges surrounding the expansion of women's rights in developing countries.

APPENDIX: CROSS-COUNTRY DATA

A.1. Data Description

With the exception of women's suffrage, all data are from the OECD Gender, Institutions and Development Database (**http://www.oecd.org/document/16/0,3746,en_2649_ 33731_39323280_1_1_1_1,00.html**). Here we give the definition of each variable and its original source.

Gender empowerment measure. The GEM measures inequality between men's and women's opportunities, combining measures of inequality in political participation and decision making, in economic participation and decision making, and in power over economic resources (based on United Nations Dev. Prog. 2005).

GDP per capita. The per-capita gross domestic product is in international dollars based on purchasing power parity, 2005 (based on World Bank 2005).

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[25]Edlund & Lee (2009) argue that the sex ratio has become less skewed in recent years in South Korea as a response to development. Neelakantan & Tertilt (2008) show that a skewed sex ratio at birth does not directly translate into scarcity in the marriage market, if spousal age gaps and gender-specific mortality are taken into account (see also Anderson & Ray 2010 on the topic of missing women).

[26]For example, women may have evolved to care relatively more about children because they have a lower reproductive capacity then men or because men face paternity uncertainty (Doepke & Tertilt 2009).

Table 4 Cross-sectional facts

Country	Income group	Land access	Credit access	Property access	Repudiation	Polygyny	Parental authority	Inheritance	Female mutilation	Violence	Freedom of movement	Veil	Contraception	Year of suffrage	Parliament (%)	GEM
Australia	HIC	1	1	0	0	0	1	0	0	0.5	0	0	76.1	1902	24.7	0.754
Austria	HIC	1	1	0	0	0	1	0	0	0.17	0	0	50.8	1918	33.9	0.782
Bahrain	HIC	0.5	1	0	1	1	0	1	1	0.75	0	0	61.8	1973	0	n/a
Belgium	HIC	1	1	0	0	0	1	0	0	0.17	0	0	78.4	1919	34.7	0.695
Canada	HIC	1	1	0	0	0	1	0	0	0.25	0	0	74.7	1917	21.1	0.771
Denmark	HIC	1	1	0	0	0	1	0	0	0.25	0	0	78.0	1915	36.9	0.825
Finland	HIC	1	1	0	0	0	1	0	0	0.5	0	0	77.4	1906	37.5	0.801
France	HIC	1	1	0	0	0.01	1	0	0	0.25	0	0	74.6	1944	12.2	n/a
Germany	HIC	1	1	0	0	0	1	0	0	0.17	0	0	74.7	1918	32.8	0.776
Greece	HIC	0.98	0.98	0.02	0	0	1	0	0	0.33	0	0	n/a	1927	14	0.519
Hong Kong, China	HIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	86.2	n/a	n/a	n/a
Iceland	HIC	1	1	0	0	0	1	0	0	0.5	0	0	n/a	1915	30.2	0.847
Ireland	HIC	1	1	0	0	0	1	0	0	0.17	0	0	n/a	1918	13.3	0.683
Israel	HIC	0.8	0.8	0.2	0	0.15	0.85	0.15	0.02	0.08	0.1	0.1	68.0	1948	15	0.612
Italy	HIC	1	1	0	0	0	1	0	0	0.42	0	0	60.2	1945	11.5	0.561
Japan	HIC	1	1	0	0	0	1	0	0	0.67	0	0	55.9	1945	7.1	0.515
Korea, Rep.	HIC	1	1	n/a	0	n/a	1	0	0	0.17	n/a	0	61.8	1948	13	0.363
Kuwait	HIC	0.5	1	0	0	1	0.2	0.8	0	0.5	0	0	50.2	n/a	0	n/a
Luxembourg	HIC	1	1	0	0	0	1	0	0	0.42	0	0	n/a	1919	23.3	n/a
Malta	HIC	1	1	0	0	0	1	0	0	0.67	0	0	n/a	1947	9.2	n/a
Netherlands	HIC	1	1	0	0	0	1	0	0	0.17	0	0	78.5	1919	36.7	0.794
New Zealand	HIC	1	1	0	0	0	1	0	0	0.33	0	0	74.9	1893	28.3	0.75
Norway	HIC	1	1	0	0	0	1	0	0	0.25	0	0	73.8	1907	38.2	0.837
Portugal	HIC	1	1	0	0	0	1	0	0	0.25	0	0	66.3	1931	19.5	0.647
Puerto Rico	HIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.42	n/a	n/a	77.7	n/a	n/a	n/a
Singapore	HIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	n/a	n/a	62.0	1947	16	0.594
Slovenia	HIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	73.8	1945	12.2	0.582
Spain	HIC	1	1	0	0	0	1	0	0	0.25	0	0	80.9	1931	36	0.709
Sweden	HIC	1	1	0	0	0	1	0	0	0	0	0	78.0	1861	45.3	0.831

(*Continued*)

Table 4 (*Continued*)

Country	Income group	Land access	Credit access	Property access	Repudiation	Polygyny	Parental authority	Inheritance	Female mutilation	Violence	Freedom of movement	Veil	Contraception	Year of suffrage	Parliament (%)	GEM
Switzerland	HIC	1	1	0	0	0	1	0	0	0.25	0	0	82.0	1971	25	0.72
United Arab Emirates	HIC	0	1	0	1	1	0	1	0.31	0.75	0.5	1	27.5	n/a	0	0.315
United Kingdom	HIC	1	1	0	0	0	1	0	0	0.08	0	0	84.0	1918	18.1	0.675
United States	HIC	1	1	0	0	0	1	0	0	0.33	0	0	76.4	1920	15	0.76
Argentina	UMC	1	1	0	0	0	1	0	0	0.25	0	0	n/a	1947	33.7	n/a
Botswana	UMC	0.3	0.5	0.5	0	0.2	0	1	0	0.33	0	0	40.4	1965	11.1	0.564
Chile	UMC	1	1	0	0	0	1	0	0	0.42	0	0	n/a	1931	12.5	0.467
Costa Rica	UMC	1	1	0	0	0	1	0	0	0.33	0	0	75.0	1949	35.1	0.67
Croatia	UMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.25	n/a	n/a	n/a	1945	21.7	0.534
Czech Republic	UMC	1	1	0	0	0	1	0	0	0.42	0	0	72.0	1920	17	0.579
Estonia	UMC	1	1	0	0	0	1	0	0	0.33	0	0	70.3	1918	18.8	0.56
Gabon	UMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	n/a	n/a	32.7	1956	9.2	n/a
Hungary	UMC	1	1	0	0	0	1	0	0	0.5	0	0	77.4	1918	9.1	0.518
Latvia	UMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	48.0	1918	21	0.576
Lebanon	UMC	0.5	1	0	0	0.1	0	0.7	0	0.75	0.5	0.5	61.0	1952	2.3	n/a
Libya	UMC	1	1	0	0.2	0.5	0.5	1	0	1	0	0	39.7	1964	n/a	n/a
Lithuania	UMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	n/a	n/a	46.6	1921	22	0.499
Malaysia	UMC	1	0.8	0	0	0.7	0	0.7	0.3	0.42	0	0	54.5	1957	9.1	0.503
Mauritius	UMC	1	1	0	0	0	1	0	0	0.42	0	0	74.7	1956	5.7	n/a
Mexico	UMC	1	1	0	0	0	1	0	0.2	0.17	0	0	68.4	1947	22.6	0.516
Oman	UMC	0	1	0	1	0	0.5	1	0	0.75	0.5	1	23.7	n/a	2.4	n/a
Panama	UMC	1	1	0	0	0	1	0	0	0.17	0	0	58.2	1941	16.7	0.471
Poland	UMC	1	1	0	0	0	1	0	0	0.33	0	0	49.4	1918	20.2	0.594
Saudi Arabia	UMC	0	0.2	0.8	1	1	0	1	0	1	0.7	1	31.8	n/a	0	n/a
Slovak Republic	UMC	1	1	0	0	0	1	0	0	0.67	0	0	74.0	1920	16.7	0.598
Trinidad and Tobago	UMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.33	n/a	n/a	38.2	1946	19.4	0.642
Uruguay	UMC	1	1	0	0	0	1	0	0	0.42	0	0	n/a	1932	12.1	0.516
Venezuela, RB	UMC	1	1	0	0	0	1	0	0	0.42	0	0	21.0	1946	9.7	0.441
Albania	LMC	0.5	0.5	0.2	0	0	0.8	0.2	0	0.75	0	0	57.5	1920	6.4	n/a

(*Continued*)

Table 4 (*Continued*)

Country	Income group	Land access	Credit access	Property access	Repudiation	Polygyny	Parental authority	Inheritance	Female mutilation	Violence	Freedom of movement	Veil	Contraception	Year of suffrage	Parliament (%)	GEM
Algeria	LMC	0.8	0.8	0.2	1	1	0	1	0	0.75	0	0	64.0	1962	6.2	n/a
Armenia	LMC	1	1	0	0	0	0.8	0	0	0.75	0	0	60.5	1921	5.3	n/a
Belarus	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	n/a	n/a	50.4	1919	29.4	n/a
Bolivia	LMC	0.8	0.5	0	0	0	1	0	0	0.42	0	0	53.4	1938	19.2	0.522
Bosnia and Herzegovina	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	n/a	n/a	47.5	n/a	16.7	n/a
Brazil	LMC	1	1	0	0	0	1	0	0	0.58	0	0	76.7	1934	8.6	n/a
Bulgaria	LMC	1	1	0	0	0	1	0	0	0.33	0	0	41.5	1944	26.3	n/a
China	LMC	0.8	0.8	0.2	0	0	0.8	0.2	0	0.58	0	0	83.8	1949	20.2	n/a
Colombia	LMC	1	1	0	0	0	1	0	0	0.33	0	0	76.9	1954	12	0.501
Cuba	LMC	1	1	0	0	0	1	0	0	0.5	0	0	73.3	1934	36	n/a
Dominican Republic	LMC	1	1	0	0	0	1	0	0	0.5	0	0	64.7	1942	17.3	0.529
Ecuador	LMC	1	1	0	0	0	1	0	0	0.17	0	0	65.8	1929	16	0.489
Egypt, Arab Rep.	LMC	1	1	0	0.9	1	0.1	0.9	0.97	0.75	0	0.7	56.1	1956	2.9	0.253
El Salvador	LMC	0.9	0.9	0.1	0	0	1	0	0	0.17	0	0	59.7	1939	10.7	0.459
Fiji	LMC	0.5	0.5	0	0	0	1	0	0	0.75	0	0	41.0	1963	8.5	n/a
Guatemala	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.67	n/a	n/a	38.2	1946	8.2	n/a
Honduras	LMC	0.4	0.7	0	0	0	1	0	0	0.67	0	0	61.8	1955	5.5	0.408
Iran, Islamic Rep.	LMC	1	1	0	1	1	0	1	0	1	0	1	72.9	1963	4.1	n/a
Iraq	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	n/a	n/a	13.7	n/a	31.6	n/a
Jamaica	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.67	n/a	n/a	65.9	1944	11.7	n/a
Jordan	LMC	0.2	1	0.8	0	1	1	1	0	0.25	0	0.8	55.8	1974	5.5	n/a
Kazakhstan	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.25	n/a	n/a	66.1	1924	10.4	n/a
Macedonia	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	n/a	n/a	n/a	1946	19.2	n/a
Morocco	LMC	0.8	0.8	0.2	1	1	0	1	0	0.25	0	0	50.3	1963	10.8	n/a
Namibia	LMC	0.2	0.4	0.6	0	1	0.3	0.7	0	0.5	0	0	28.9	1989	25	0.578
Paraguay	LMC	1	1	0	0	0	1	0	0	0.17	0	0	57.4	1961	10	0.412
Peru	LMC	1	0.5	0	0	0	1	0	0	0.42	0	0	68.9	1955	18.3	0.521
Philippines	LMC	1	1	0	0	0	0.9	0.05	0	0.17	0	0	46.5	1937	15.3	0.539
Romania	LMC	1	1	0	0	0	1	0	0	0.33	0	0	63.8	1929	11.1	0.46

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Table 4 (*Continued*)

Country	Income group	Land access	Credit access	Property access	Repudiation	Polygamy	Parental authority	Inheritance	Female mutilation	Violence	Freedom of movement	Veil	Contraception	Year of suffrage	Parliament (%)	GEM
Russian Federation	LMC	0.8	0.8	0.2	0	0	1	0	0	0.25	0	0	n/a	1918	9.8	0.44
Serbia and Montenegro	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	58.3	n/a	7.9	n/a
South Africa	LMC	0.1	0.5	0.5	0	0.5	0.7	1	0.1	0.42	0	0	56.3	1930	32.8	n/a
Sri Lanka	LMC	0.5	1	0	0	0.5	0.5	0	0	0.33	0	0	66.1	1931	4.9	0.272
Swaziland	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	27.7	1968	10.8	n/a
Syrian Arab Republic	LMC	0.6	0.6	0.4	0.2	0.7	0	1	0	0.5	0	0	36.1	1949	12	n/a
Thailand	LMC	1	1	0	0	0	0.9	0	0	0.33	0	0	72.2	1932	10.6	0.457
Tunisia	LMC	1	1	0	0	0	0.3	1	0	0.25	0	0	60.0	1957	22.8	n/a
Turkey	LMC	0.5	1	0	0	0	1	0	0	0.42	0	0	63.9	1930	4.4	0.29
Turkmenistan	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	61.8	1927	26	n/a
Ukraine	LMC	1	1	0	0	0	1	0	0	0.42	0	0	67.5	1919	5.3	0.406
West Bank and Gaza	LMC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Afghanistan	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	n/a	n/a	4.8	n/a	n/a	n/a
Angola	LIC	0.2	0.8	0.2	0	0.8	0.3	0.5	0.2	0.5	0	0	6.2	1975	15	n/a
Azerbaijan	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	55.4	1921	10.5	n/a
Bangladesh	LIC	0.2	0.7	0.5	0.8	1	0	1	0	0.08	0.3	0.5	53.8	1972	2	0.218
Benin	LIC	0	1	0	0	0.8	0	0.5	0.17	0.75	0	0	18.6	1956	7.2	n/a
Bhutan	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.67	n/a	n/a	18.8	1953	8.7	n/a
Burkina Faso	LIC	0.2	0.5	0.5	0.4	0.9	0.2	0.6	0.72	0.5	0.2	0	11.9	1958	11.7	n/a
Burundi	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	15.7	1961	18.4	n/a
Cambodia	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.58	n/a	n/a	23.8	1955	9.8	0.347
Cameroon	LIC	0	0.5	0.6	0.2	0.6	0.8	0.3	0.2	0.75	0	0	19.3	1946	8.9	n/a
Central African Rep.	LIC	0	1	0.4	0	0.7	0.5	1	0.43	0.75	0	0	27.9	1986	7.3	n/a
Chad	LIC	0	0.5	0.8	0.5	1	0	1	0.45	0.5	0.5	0.5	7.9	1958	6.5	n/a
Congo, Dem. Rep.	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.05	0.75	n/a	n/a	31.4	1967	12	n/a
Congo, Rep.	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	n/a	1963	8.5	n/a
Cote d'Ivoire	LIC	0.4	1	0	0.6	0.8	0	0.2	0.43	0.42	0	0	15.0	1952	8.5	n/a
Equatorial Guinea	LIC	0	0	1	0	1	0	1	0	1	0	0	n/a	1963	18	n/a
Eritrea	LIC	0.5	0.5	0.5	0.5	0.7	0.2	1	0.95	0.5	0	0.5	8.0	1955	22	n/a

(*Continued*)

Table 4 (*Continued*)

Country	Income group	Land access	Credit access	Property access	Repudiation	Polygyny	Parental authority	Inheritance	Female mutilation	Violence	Freedom of movement	Veil	Contraception	Year of suffrage	Parliament (%)	GEM
Ethiopia	LIC	0.3	0.5	0.5	0	0	0	0	0.8	0.75	0	0	8.1	1955	7.7	n/a
Gambia, The	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.8	0.5	n/a	n/a	9.6	1960	13.2	n/a
Georgia	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	40.5	1918	9.4	0.381
Ghana	LIC	0.3	0.5	0.5	0	1	0	0.7	0.25	0.58	0	0	22.0	1954	10.9	n/a
Guinea	LIC	0	1	0	0.8	1	0	0.2	0.99	0.5	0	0	6.2	1958	19.3	n/a
Guinea-Bissau	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	1	n/a	n/a	7.6	1977	14	n/a
Haiti	LIC	1	1	0	0	0.3	1	0	0	0.67	0	0	27.4	1950	3.6	n/a
India	LIC	0.5	0.5	0.5	0.2	0.2	0	0.7	0	0.33	0.6	0.5	48.2	1950	8.3	n/a
Indonesia	LIC	0.8	0.8	0.2	0.2	0.5	1	0.2	0.1	0.67	0	0	57.4	1945	11.3	n/a
Kenya	LIC	0.3	0.3	0.7	0.2	0.6	1	1	0.38	0.17	0	0	39.0	1919	7.1	n/a
Korea, Dem. Rep.	LIC	n/a	n/a	0	n/a	0	n/a	n/a	n/a	1	0	n/a	80.5	n/a	20.1	n/a
Kyrgyz Republic	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.58	n/a	n/a	59.5	1918	6.7	n/a
Lao PDR	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.42	n/a	n/a	32.2	1958	22.9	n/a
Lesotho	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.25	n/a	n/a	30.4	1965	11.7	n/a
Liberia	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.6	1	n/a	n/a	6.4	n/a	5.3	n/a
Madagascar	LIC	1	1	0	0	0.2	0	0.1	0	0.75	0	0	18.8	1959	6.9	n/a
Malawi	LIC	0.5	0.5	0.5	0	0.7	0.5	0.5	0.2	0.75	0	0	30.6	1961	14	n/a
Mali	LIC	0	0.3	0.7	0.8	1	0	1	0.92	1	0	0	8.1	1956	10.2	n/a
Mauritania	LIC	0.5	0.5	0.5	1	1	0	1	0.25	0.5	0	0.5	8.0	1961	3.7	n/a
Moldova	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.42	n/a	n/a	62.4	1978	15.8	0.468
Mongolia	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.58	n/a	n/a	67.4	1924	6.8	n/a
Mozambique	LIC	0.5	0.5	0.5	0	1	0	1	0.4	0.75	0	0	5.6	1975	34.8	n/a
Myanmar	LIC	1	1	0	0	0	0.5	0	0	0.75	0	0	32.7	1935	n/a	n/a
Nepal	LIC	0	0.3	0.6	0	0.1	0	0.8	0	0.58	0	0	39.3	1951	5.9	n/a
Nicaragua	LIC	1	1	0	0	0	1	0	0	0.5	0	0	68.6	1955	20.7	n/a
Niger	LIC	0	0.7	0.8	1	1	0	1	0.05	1	0	0.8	14.0	1948	12.4	n/a
Nigeria	LIC	0.2	0.2	0.5	0	0.9	0.4	0.8	0.25	0.75	0.5	0.5	15.3	1958	4.7	n/a
Pakistan	LIC	0.2	0.3	0.5	1	1	0	1	0.05	0.5	1	1	27.6	1947	21.3	0.414
Papua New Guinea	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	25.9	1964	0.9	n/a

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Table 4 (*Continued*)

Country	Income group	Land access	Credit access	Property access	Repudiation	Polygymy	Parental authority	Inheritance	Female mutilation	Violence	Freedom of movement	Veil	Contraception	Year of suffrage	Parliament (%)	GEM
Rwanda	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1	n/a	n/a	13.2	1961	48.8	n/a
Senegal	LIC	0.5	0.5	0.5	0.2	0.9	0.1	0.7	0.2	0.25	0	0	12.9	1945	19.2	n/a
Sierra Leone	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.9	0.75	n/a	n/a	4.3	1961	14.5	n/a
Somalia	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.98	0.75	n/a	n/a	n/a	n/a	n/a	n/a
Sudan	LIC	0	0	1	0.8	1	0	1	0.89	0.75	0.7	1	8.3	1964	9.7	n/a
Tajikistan	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.5	n/a	n/a	33.9	1924	n/a	n/a
Tanzania	LIC	0	0.2	0.8	0.3	0.65	0	1	0.18	0.25	0	0	25.4	n/a	21.4	n/a
Timor-Leste	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.83	n/a	n/a	n/a	n/a	25.3	n/a
Togo	LIC	0	0.3	0.7	0	0.6	1	0.5	0.12	0.75	0	0	25.7	1945	6.2	n/a
Uganda	LIC	0.1	0.1	0.9	0	0.3	0	1	0.05	0.75	0	0	22.8	1962	23.9	n/a
Uzbekistan	LIC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.75	n/a	n/a	67.2	1938	17.5	n/a
Vietnam	LIC	0.5	0.7	0.3	0	0	0.5	0.5	0	0.75	0	0	78.5	1946	27.3	n/a
Yemen, Rep.	LIC	0	0.5	0.7	1	1	0	1	0.23	0.75	0.5	1	20.8	1967	0.3	0.127
Zambia	LIC	0.3	0.3	0.7	0	0.8	0.1	1	0	0.75	0	0	34.2	1962	12.7	n/a
Zimbabwe	LIC	0.1	0.3	0.7	0	0.8	0.5	1	0.1	0.67	0	0	53.5	1957	10	n/a

Abbreviations: GEM, gender empowerment measure; HIC, high-income country; UMC, upper-middle-income country; LMC, lower-middle-income country; LIC, lower-income country.

Women's access to land. Women's access to land ownership is between 1 ("full") and 0 ("impossible") (primarily based on Lang 1998).

Women's access to bank loans. Women's access to bank loans is between 1 ("full") and 0 ("impossible") (primarily based on Lang 1998).

Women's access to property. Women's rights to own property other than land is between 0 ("no") and 1 ("yes") (primarily based on Lang 1998).

Repudiation. Repudiation measures the possibility of the unilateral termination of marriage through a husband's repudiation of his wife. The level of discrimination is between 0 ("not possible") and 1 ("legally binding practice") (primarily based on Lang 1998).

Early marriage. Early marriage is defined as the share of female population between ages 15 and 19 ever married (based on United Nations Dev. Prog. 2005).

Polygyny. The acceptance of polygyny within a society is between 0 ("no") and 1 ("complete acceptance") (based on various primary sources).

Parental authority. Parental authority granted to the father and mother equally is between 0 ("no") and 1 ("yes") (primarily based on Lang 1998).

Inheritance discrimination. Inheritance discrimination measures inheritance practices in favor of male heirs. The level is between 0 ("no") and 1 ("yes") (primarily based on Lang 1998).

Female genital mutilation. For the prevalence of female genital mutilation, the share of women affected ranges from 0 ("none") to 1 ("all") [based on various sources (e.g., WHO, Amnesty International, StopFGM)].

Violence against women. Violence against women measures legislation punishing acts of violence against women (e.g., rape, domestic violence, sexual harassment). The level of discrimination is between 0 ("specific legislation in place") and 1 ("no legislation in place") (based on United Nations Dev. Fund Women 2003).

Freedom of movement. Freedom of movement measures women's ability to move freely outside of the house. The level of discrimination is between 0 ("yes") and 1 ("no") (primarily based on Lang 1998).

Obligation to wear a veil in public. For the obligation of women to wear a veil in public, the level of discrimination ranges from 0 ("no") and 1 ("full") (primarily based on Lang 1998).

Contraceptive prevalence. Contraceptive prevalence is defined as the percentage of women of reproductive age (15–49) married or in a union who are using (or whose partner is using) a modern contraceptive method (based on data from the World Health Organization, 2005).

Women's suffrage. Women's suffrage is defined as the year in which women's right to vote was recognized on a universal and equal basis. If partial rights were recognized before full rights were granted, we report the year of granting partial recognition of the right to vote (United Nations Dev. Prog. 2004).

Women in parliament. Women in parliament is defined as the fraction of seats in parliament held by women (based on World Bank, GenderStats, 2005).

ACKNOWLEDGMENTS

DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

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