Women and Globalization:  
A Study of 180 Countries, 1975-2000

Mark M. Gray  
Georgetown University

Miki Caul Kittilson  
Arizona State University

Wayne Sandholtz  
University of California, Irvine

A grant from the Center for Global Peace and Conflict Studies at the University of California, Irvine supported this research. An earlier version of this article was presented at the 2004 Annual Meetings of the American Political Science Association. The authors are grateful for constructive comments from participants in the faculty research colloquium of the Department of Political Science at Brigham Young University, and for the helpful suggestions of the editor of IO, Lisa Martin, and two anonymous reviewers.
Abstract

Women and Globalization:
A Study of 180 Countries, 1975-2000

Mark M. Gray, Miki Caul Kittilson, and Wayne Sandholtz

How do rising levels of international interconnectedness affect social, economic, and political conditions for women? Research on gender and international relations frequently offers clear propositions, but seldom submits them to broad, quantitative testing. This paper begins to fill that gap. We advance the hypothesis that, on balance and over time, increasing cross-national exchange and communication lead to improvements in women’s status and equality. Economic aspects of globalization can bring new opportunities and resources to women. But equally important, globalization promotes the diffusion of ideas and norms of equality for women. In an analysis of 180 countries from 1975-2000, utilizing cross-sectional time-series regression techniques, we examine the impact of several measures of globalization on women’s levels of life expectancy, literacy, and participation in the economy and parliamentary office. International trade, foreign direct investment, membership in the UN and World Bank, and ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), are associated with improved conditions for women.
How do rising levels of international interconnectedness affect the social, economic, and political conditions for women? Competing hypotheses are easy to identify. Indeed, research on gender and international relations sometimes offers clear propositions, but seldom submits them to broad, quantitative testing. This paper begins to fill that gap. We expect to find a considerably mixed picture: some women will benefit from globalization and some will be hurt; the status of women will improve in some respects but not others. Nevertheless, we advance the hypothesis that, on balance and over time, increasing cross-national exchange and communication lead to improvements in women’s status and equality.¹ We argue that both economic factors and ideational or normative effects support that proposition. Economic aspects of globalization bring new opportunities and resources to women. But equally important, globalization promotes the diffusion of ideas and norms of equality for women; though some societies resist such notions, others gradually abandon rules and practices that have functioned to subordinate and constrain women.

Why should a study focus on the effects of globalization for women, and not for other groups of people? First, in assessing the condition of women, we take seriously the basic insight of feminist and gender analysis approaches, that the absence of gender in theoretical and empirical research leads to distortion, or even blindness, with respect to ubiquitous social and political phenomena. Second, we note that gender is one of the few modes of differentiation that has social, cultural, political, and economic

¹ We give careful consideration to our choice of terms “status” and “conditions for women” here. Although these terms may connote a passive role for women, we recognize that women actively shape their environments. We argue that favorable conditions in women’s lives provide greater opportunity for empowerment. We avoid the terms “equality” and “empowerment” in instances where we can only measure changes for women in absolute terms (not relative to men).
implications everywhere in the world. As Gillian Youngs puts it, all institutions involve the “exercise of power to the advantage of some and the disadvantage of others,” and “gender is a pervasive basis for such differentiations.”2 The 1995 Human Development Report declares, on the basis of numerous indicators, “In no society today do women enjoy the same opportunities as men.”3 In the 1999 Human Development Report, both of the composite measures, the “gender empowerment measure” and the “gender development index,” “show disparities in every country.”4 In other words, focusing on women allows us to investigate the effects of internationalization on a group that is disadvantaged, to a greater or lesser extent, in every country in the world.

Finally, though numerous social scientists have offered arguments as to the consequences of globalization for women, these have generally been cast at a relatively high level of theoretical abstraction. Some studies include an empirical dimension, usually in the form of ethnographic or case study material. We hope to contribute to these conversations by analyzing quantitative data from about 180 countries. It is not our contention that only statistical methods can answer all the questions; far from it. But quantitative analysis can provide powerful evidence for or against some key propositions.

The first section of the article lays out various theoretical perspectives and draws from them hypotheses that could be assessed through the analysis of systematic data. The second section briefly assesses the role of international organizations and activist networks in diffusing ideas and norms regarding women. A third section describes our indicators for the independent variables (dimensions of internationalization), dependent variables (measures of the status of women), and a number of controls. The fourth section tests our hypotheses with multivariate regressions. A concluding section discusses the results and their implications for theory and research.

Theories and hypotheses

In most of the political science research on globalization and internationalization, the focus has been, implicitly or explicitly, on economic transactions across national frontiers. But transnational economic ties via trade, investment, and corporate alliances and production networks constitute only one dimension of globalization. International communications are as important as economic exchange. Trans-border interchange can involve people, ideas, information, fashions, and tastes. Cross-national communication occurs through travel and tourism, telecommunications, and the Internet. Many forms of transnational interchange include both economic and socio-cultural dimensions. For instance, migration has powerful economic causes and effects, as well as cultural repercussions in both sending and receiving countries. Transnational media and entertainment activities (movies, television, music, news and information) are simultaneously business and cultural phenomena.

Our analysis of the gendered effects of globalization includes two principal dimensions. The first has to do with economic resources and opportunities. The second concerns the spread of norms and ideas regarding the place of women in social, political, and economic life.

Economic arguments

---

5 We use the terms “globalization” and “internationalization” interchangeably. Both refer to trans-border movements of goods, services, capital, people, ideas, information, and symbols. The terms imply that countries are becoming increasingly interconnected through rising levels of cross-border interactions.

Economic arguments on the effects of globalization on women fall into two broad groups, one intensely critical and the other basically optimistic, but with reservations and qualifications. From the critical point of view, economic globalization has largely negative consequences for women. It confines them to low pay, low status, often part-time jobs that reinforce their subordination and perpetuate the devalorization of women’s work in most societies. Demand among multinational firms for cheap, flexible labor has encouraged offshore production using low-paid women. Women, however, remain excluded from the more stable and higher-paying jobs in heavy industry. In Pettman’s account, globalization (defined as increasing capital mobility, trade, and offshore manufacturing) leads to an “increasing feminization of labor” because women continue to be “constructed as dependents” and thus confined to the worst paying jobs. The removal of barriers to transnational investment, far from empowering women, has brought them dismal jobs in offshore production sites where they are subject to sexual discrimination and harassment. Furthermore, competition from foreign firms undercuts efforts to help women launch local “microenterprises.” Some within the critical camp acknowledge that the picture for women as workers in an era of mobile capital is somewhat mixed, but see it as largely discouraging. Some women may benefit from new jobs, but their “work is highly exploitative and features low wages, poor working conditions, suppression of trade unions, and little opportunity for security or advancement.”

In addition, the structural adjustment and market liberalization policies that have accompanied globalization are particularly damaging to women. They lead to cuts in public sector jobs that are often disproportionately held by women, they undercut social programs that benefit women, and they inhibit

---

7 See Enloe 1990, chap. 7; Moghadam 1999; Mason 1986.
8 Sassen 1998, chap. 6.
10 Sforza 1999.
11 Wright 1995, 864.
labor organization by women. Further, in an increasingly volatile economic context, women are often the first to suffer in times of financial crisis. Evidence from the Asian financial crisis shows that women were more likely than men to lose their jobs. Another argument is that industrial development causes environmental damage that disproportionately degrades life for Third World women. Women suffer the most from ecological problems because they are responsible for most family sustenance; finding food and fuel becomes harder, and diets suffer.

No one studying globalization and women takes an unabashedly positive view. The alternative to the critical position is a qualified one that posits, on balance, economic advantages in the form of greater agency for women in an era of globalization. The primary advantage centers on enhanced prospects for non-household employment. Indeed, globalization, including greater openness to foreign direct investment (FDI), has led to a massive infusion of women into job markets. Especially in the lower income countries, foreign multinationals often make better paying jobs available to women. Saskia Sassen, cited earlier on the negative implications of globalized production, in fact recognizes the mixed impact of globalization for women’s jobs: “On the one hand, they [women] are constituted as an invisible and disempowered class of workers . . . On the other hand, the access to wages and salaries (even if low), the growing feminization of the job supply, and the growing feminization of business opportunities . . . alter the gender hierarchies in which they [women] find themselves.”

Many analysts note that improved employment possibilities for women are not an unalloyed good. For instance, Levidow argues that though such offshore production brings women economic

---


13 Singh and Zammit 2000.


benefits, working for foreign manufacturers (in this case in the semiconductor industry) can be alienating and unhealthful, and not necessarily terribly empowering. In a superb ethnographic study of Thai women who migrated to Bangkok to work, Mills captures that sense of ambivalence. She writes that she expected to encounter much more disenchantment and unhappiness than she found, and that the women felt a real “strength of purpose and sense of personal agency.” The book balances the difficulties and alienation of factory work against the women’s own perceptions of empowerment from earning money and living on their own in the city: “They are neither victims pure and simple nor free and unfettered actors.”

Thus, at a minimum, with globalization, more women have more options for income-producing employment. More numerous job opportunities mean more ways to get out of unequal relations; they give women more chances to take their labor and skills elsewhere. One of the first places where women benefit from enhanced employment opportunities is the household. Sassen cites extensive research showing that with regular wage work, “women gain greater personal autonomy and independence . . . [They] gain more control over budgeting and other domestic decisions and greater leverage in requesting help from men in domestic chores.” As households become more dependent on female incomes, the status and relative power of women improve.

Expanded chances to earn an independent income can provide a foundation from which, over the longer term, to attain enhanced social and political status. As Sassen puts it, “In addition to the relatively improved empowerment of women in the household associated with waged employment, there is a

---

17 Levidow 1996.
18 Mills 1999, 11.
19 Dau-Schmidt 1996.
20 Sassen 1996, 27.
second important outcome – their greater participation in the public sphere and their possible emergence as public actors.”

In terms of economic outcomes, at the national level, two cross-national studies show that higher levels of economic development are associated with greater degrees of women’s equality. Apodaca’s research on economic development and women’s rights from 1976 to 1990 concludes that “women not only benefit from a larger economic pie, but … their share of that pie increases as the pie enlarges.” Sweeney finds a similar pattern from the 1980s to 2003. On the other hand, her examination of the effects of economic globalization on women’s rights shows mixed effects. Higher levels of trade openness and capital flow seem to exert their influence mainly upon women’s political rights, rather than economic rights. Yet by using the 1980s as a baseline, it is possible that Sweeney’s analysis has missed some of the initial effects of globalization, especially in creating new employment and educational opportunities for women.

Both Sweeney and Apodaca’s cross-national analyses measure outcomes for women via aggregated point scales of women’s rights. Yet such measures lose a great deal of information by condensing sets of complex indicators into uni-dimensional scales, with results that are difficult to interpret. Further, several nations are excluded from both studies due to an absence of data. Sweeney explains that “the data required to develop my measures of economic globalization are missing for a number of developing democracies.” Apodoca’s measures force her to exclude the former Soviet Union. Thus, previous studies test the effects of economic forces for a limited set of data-reporting nations, and non-random missing data may explain the inconsistent findings. We propose to test the effects of economic globalization and levels of development for a wider set of nations and a longer period of time.

---

22 Sassen 1996, 27.

23 Apodaca 1998, 11.

by selecting the measures with the widest range of nations reporting. We retain the measures in their original form, allowing us to interpret the results in terms of concrete outcomes for women.

Economic changes associated with globalization may also provide the seeds for cultural transformations that improve the conditions of women. In an impressive study of public attitudes towards gender roles in 70 nations, Ronald Inglehart and Pippa Norris argue that economic growth is only part of the story; substantial changes in social norms, beliefs and values are also necessary to bolster women’s roles in society and politics. They find that industrial and postindustrial nations are more likely to support gender equality than agrarian nations. More supportive attitudes towards women’s equality then provide a more fertile soil for the concrete policies that help women to gain equal rights and opportunities.25

We argue that the more positive, albeit ambivalent, view is more persuasive. To the extent that economic globalization expands the work opportunities available to women and increases their independent earnings, it improves their physical quality of life and creates additional options for them in their households as well as in social life. We hypothesize that trade and foreign direct investment will have differential effects for women. To the extent that trade enhances economic growth generally, it will improve physical quality of life (measured by life expectancy) and literacy. But trade may also displace employment in local industries, reducing employment opportunities for women. Inward FDI, in contrast, is more likely to create new jobs, many of which will be available to women. Certainly women often retain the bulk of unpaid domestic work, resulting in a double burden. And depending upon the cultural, class, and family contexts, not all women will benefit from paid employment. Yet, importantly, independent economic resources and opportunities give women more choices, and the agency to pursue their collective interests.

International interactions, in addition to whatever economic or material purpose they have, inevitably depend on, and work to diffuse, norms and ideas. Cross-border interactions always rely on a basis of shared norms. The more transnational activity people engage in, the more they absorb ideas and norms prevailing in international society. In other words, we posit a socialization effect. Socialization is a process through which actors learn the ideas, values, and norms of the social contexts in which they interact.\textsuperscript{26} International organizations are, among other things, forums for socialization and learning. At times they are also purposeful “teachers of norms.”\textsuperscript{27} The more a country’s citizens and organizations participate in, and value, these transnational networks of exchange, communication, and organization, the more likely they are to absorb international ideas and norms.\textsuperscript{28}

To the extent that a country internalizes norms and ideas diffused through cross-national interactions, it incorporates those norms and ideas into its domestic policies, laws, and institutions.\textsuperscript{29} It is the relationship among international interactions, socialization, and internalization that leads us to hypothesize a link between a country’s level of integration in international society and the political, economic, and social condition of its women.

The key question then becomes, which norms and ideas in international society have a bearing on the status of women? In recent decades, a number of international conferences, conventions, and declarations have promoted a variety of norms and ideas designed to improve the lot of women. They address health, nutrition, and physical quality of life; personal security; employment and income; participation in politics and government; and social status. Of course, increased attention to women’s

---

\textsuperscript{26} Eckstein 1988, 791.

\textsuperscript{27} Finnemore 1993.

\textsuperscript{28} Sandholtz and Gray 2003.

\textsuperscript{29} Cortell and Davis 1996; Koh 1998; Wendt 1999; Cortell and Davis 2000.
rights (as much of the discourse has been framed) in international forums did not simply emerge on its own. It has been the product of “a form of feminism with an internationalist orientation.”

Internationalist feminism has been the work of a broad range of women’s activist and advocacy groups that have pressured both national governments and international organizations. Links among local, national, and international women’s groups have created “transnational issue networks . . . that can exchange information, ideas, and political support.”

**International organizations and networks**

In this section, we summarize the interactions among two major international governmental organizations, the United Nations and World Bank, and transnational issue networks that have promoted the diffusion of ideas and norms supporting improvements in the status of women. From its inception, the UN has addressed issues concerning women. In the late 1940s and 1950s the UN established a Commission on the Status of Women, and sponsored a Convention on the Political Rights of Women. After a long lapse, the UN declared a “Decade for Women” (1976 to 1985) and held a series of international conferences on women: in 1980 (Copenhagen), 1985 (Nairobi), and 1995 (Beijing). The conferences established a Bill of Female Rights; addressed violence against women and women’s health, employment, education, and poverty; and culminated in 1995 with the *Platform for Action*. UN conferences on women have served as “lightning rods that have helped to channel the collective buzz of ideas and energy emanating from the global women’s movement into prescriptions for and commitments

---

30 Prügl and Meyer 1999, 3.


to policy action at the level of nation-states.” The Beijing Conference, and later the UN Assembly, endorsed an innovative approach to addressing women’s inequality called “gender mainstreaming,” which calls for governments to make gender equality an explicit and central part of all policy and planning.

The UN conferences also fostered the growth of a transnational feminist movement. Non-governmental organizations (NGOs) held meetings parallel to the UN Conferences. Attendance at the NGO forums grew considerably over time—from 1,000 in 1975 to 30,000 in 1995. These grassroots connections complement and support the connections made among official governmental delegates.

The increasing number and activism of women’s NGOs ensured that other UN conferences and specialized agencies would also address the gender dimension. For example, since the early 1980s, under the rubric of Women in Development, the United Nations Development Program has considered the impact of its programs and policies on women. Women’s concerns have figured prominently in a variety of UN conferences, especially in the 1990s, including the 1994 Earth Summit in Rio de Janeiro, the 1995 International Conference on Population and Development, the 1993 World Conference on Human Rights, and the 1995 World Summit for Social Development.

Finally, the UN’s heightened awareness of gender inequality spurred the General Assembly to adopt the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1979, calling for government action on several policies designed to support women, such as maternity leave and access to childcare. Although many nations did not ratify, including the United States,

\[\text{34} \text{ True and Mintrom 2001, 48--9.}\]

\[\text{35} \text{ See Nelson and Chowdhury 2000; Keck and Sikkink 1998; Stienstra 2000.}\]

\[\text{36} \text{ True and Mintrom 2001.}\]

\[\text{37} \text{ Joachim 2003.}\]

\[\text{38} \text{ See Kardam 1991; Goetz 1997.}\]

\[\text{39} \text{ See Tinker 1999, 99; Higer 1999; Miller 1999.}\]

\[\text{40} \text{ United Nations 1988.}\]
CEDAW became the main international legal document on women’s rights. Its existence created a source of legitimacy with which women could justify their claims to their own national governments.

Case study evidence demonstrates the substantial effects of CEDAW for women’s equality. For example, in Pakistan, the adoption of CEDAW has sparked new debate over women’s roles, invigorated the women’s movement, pushed the government to establish an autonomous National Commission for women, and marked a “definite paradigm shift in women’s access to power… albeit slowly and in limited quarters.” In a similar fashion, Celik reports that in Turkey CEDAW brought the issue of women’s rights to the national agenda, sparked the creation of women’s agencies, and led to new laws, including the right of women to own property. Further, the Turkish “women’s organizations that emerged and became active in the 1980s have used CEDAW and other means to push for tangible changes.”

Pursuant to its ratification of CEDAW, Costa Rica passed its far-reaching statute on equal rights for women. Simmons’ cross-national statistical research supports these national-level findings. In a time-series analysis, Simmons assesses the effects of CEDAW on outcomes over which governments are more likely to have control. She concludes that CEDAW improves women’s access to literacy and birth control, but has less impact on their share of public sector employment.

The World Bank has also addressed women’s issues. Although the Bank appointed an advisor on Women in Development in 1977, the Bank paid little attention to gender issues prior to the 1980s. In

---

41 Keck and Sikkink 1998.
43 Weiss 2003, 589.
44 Celik 2004, 3.
45 Rojas 2001; Brysk 2005.
47 Kardam 1991, 64-81.
light of the UN conferences and conventions, in 1987 the Bank began increasing staff for gender work.\footnote{Murphy 1997.} In the early 1990s, the Bank started to integrate women’s issues into lending and development programs. After the 1995 Beijing Conference called for the World Bank to assess how their programs affected women, the Bank sought input from women’s NGOs in its policy processes, and increased its spending on women’s health, education, and microfinance.\footnote{Hafner-Burton and Pollack 2000. A number of regional organizations have also adopted programs and policies to promote gender equality and mainstreaming. The European Union and the Organization of American States are notable examples. On the EU, see Hoskyns 1996, Ellis 1998, Elgström 2000, Pollack and Hafner-Burton 2000, Cichowski 2001a and 2001b, and Jupille 2001. On the OAS, see Meyer 1999.}

In sum, international organizations have actively articulated and diffused transnational norms of gender equality. In so doing, they have empowered women’s groups and organizations, which can use international treaties and declarations to pressure their governments to live up to their commitments in the area of gender equity, and to pursue domestic reforms.\footnote{Tinker 1999, 101.}

\textbf{Measuring Outcomes}

We operationalize our outcome variables for women’s quality of life and equality much as the United Nations’ gender indexes\footnote{Gender-related Development Index (GDI) and the Gender Empowerment Measure (GEM). For a more detailed discussion of the multidimensionality and resulting difficulties of creating one generalizable and quantitative measurement for the “status of women” see Mason (1986).} do, though instead of creating one index we analyze effects on separate indicators. We select this approach to make the analyses interpretable in terms of concrete outcomes, as opposed to general-purpose indexes whose specific meaning can be difficult to discern. In addition, with
the use of indexes, countries are excluded when they are missing data for any one component of the index; utilizing separate indicators allows us to analyze a larger set of countries.

We focus on four measures that are differentiated by gender and widely available for the largest number of states during the 1975 to 2000 period. These include female life expectancy at birth, female illiteracy rate for age 15 and above, female percentage share of the workforce, and female percentage share of seats in parliament. We do not explore measures of women in particular segments of the workforce, specific educational attainment, or female wages, because there are too many missing observations for worldwide analysis during the period studied here. To avoid possible sample biases related to missing data we restrict our analysis to the indicators with the most widespread coverage.\textsuperscript{52} Our observations are taken at five-year intervals, for 1975, 1980, 1985, 1990, 1995, and 2000.\textsuperscript{53} Descriptive statistics for the dependent variables are provided in Table 1.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|}
\hline
\textbf{Variable} & \textbf{Mean} & \textbf{Standard Deviation} \\
\hline
Female life expectancy & 72.5 & 5.2 \\
Female illiteracy rate & 10.2 & 3.4 \\
Female workforce participation & 45.1 & 12.7 \\
Female parliamentary seats & 0.3 & 0.2 \\
\hline
\end{tabular}
\caption{Descriptive statistics for the dependent variables}
\end{table}

\textsuperscript{52} Countries with missing data are disproportionately from small and/or lesser developed nations.

\textsuperscript{53} Worldwide analysis where nation-states are the unit of analysis for three of the dependent variables studied here (life expectancy, illiteracy, and labor force participation) could not be completed with data collected annually since 1975. The use of five-year intervals coincides with data reporting and collection cycles for many small and/or developing nations. In cases where an observation for these three dependent variables was missing we looked at available data for the year previous or the year that followed as a substitute to maximize observations. Given that indicators of life expectancy, illiteracy, and labor force participation are not subject to any significant year-to-year volatility the very small number of cases where this method of replacement was used does not create any substantive measurement issues.
The first dependent variable, female life expectancy at birth, has been and continues to be the primary measure for any study of physical quality of life.\textsuperscript{54} Life expectancy should reflect the effects of other potential indicators of physical quality of life (nutrition, caloric intake, clean water, access to doctors and clinics, and so on). However, these factors have been difficult to disentangle, as they are mostly collinear with, and explained by, national levels of development.\textsuperscript{55} This is a limitation for research that seeks to analyze specific changes in health infrastructure but an advantage for the research presented here because we seek not to assess the effects of specific health-related changes but rather to estimate the collective impact of those reforms on women’s physical quality of life. By focusing on life expectancy, we also minimize any missing data problems that would result from attempting to measure specific health-system indicators for a global sample of countries since 1975.\textsuperscript{56}

In 2000, the lowest levels of female life expectancy at birth in the world (about 40 years) were found in Mozambique and Namibia – two nations dealing with severe HIV/AIDS epidemics.\textsuperscript{57} At the

\textsuperscript{54} Bongaarts and Feeney 2002, 13.

\textsuperscript{55} Rodgers 1979, 343; Ram 1998.

\textsuperscript{56} Rodgers (1979) indicates that the effect of income on life expectancy is present at the national, local, and even individual level. This research indicates the use of national levels of income in addition to measures for the distribution of income (Gini coefficients) provides the best estimates. However, measures for the distribution of income are not available for a large enough number of countries and years to be used in a time-series global sample.

\textsuperscript{57} We account for observations where more than 5 percent of the population is estimated as HIV positive as an “excluded” category in the multivariate models. Given the emergence of the virus during the period of this study it is easier, and more reliable, to isolate nations and years where the virus is known \textit{not} to be present at high levels as measured here. In nations where more than 5 percent of the populations is estimated to be HIV positive there is often imperfect measurement of exact levels among the entire population and this is even more challenging over time. Thus, statistically it is easier to isolate
other extreme, female life expectancies in Japan and France exceed 82 years. On average, for all countries, female and male life expectancies at birth have increased from 61 and 57 years, respectively, in 1975 to 69 and 64 years, respectively, in 2000.

We expect that nations that become more open to international trade and investment and more involved in international organizations – including ratification of CEDAW – will have higher female life expectancies. We also have expectations about areas where female life expectancies may be lower. Although global life expectancies for both men and women have generally been increasing on a convergent pace,\(^58\) one factor countering these changes is the emergence of HIV/AIDS in the 1980s. The impact of HIV/AIDS has been most severe in Sub-Saharan Africa.\(^59\) Given existing research on these factors, we expect females in nations with lower levels of development and higher rates of HIV/AIDS to have lower life expectancies.

The next outcome variable is education, measured here by the percentage of those ages 15 or older who are illiterate. As Stromquist notes, “the ability to write and read in an increasingly technological society is a fundamental need.”\(^60\) The empowerment of women around the globe is dependent on decreasing female levels of illiteracy. In 2000, the highest levels of female illiteracy in the world were found in Niger and Burkina Faso, where more than eight in ten women, ages 15 and older, are unable to understand, read, or write simple text in their own language. At the other extreme, most of the observations where the epidemic is known not to be most severe. Although it would be preferable to have HIV rates for both males and females, this data does not exist for the set of countries studied here. Where these estimations are made in the medical literature they are typically based on samples of very specific populations (e.g. prostitutes or intravenous drug users) that are unrepresentative of men or women as a whole.


\(^{60}\) Stromquist 1990, 95.
world’s high development democracies report female illiteracy rates of less than 5 percent with virtually no differences with male illiteracy rates. On average, both female and male illiteracy rates have declined during the 1975 to 2000 period with the gender gap decreasing since 1985. The average national female illiteracy rate in 2000 was 28 percent – about 10 percentage points higher than national male rates worldwide.

We expect that, in general, countries that have become more open to international trade and investment and more involved in international organizations – including ratified signature of CEDAW – will have lower levels of female illiteracy. Government inaction is one of the primary factors related to illiteracy.61 We expect that global pressures on governments may be one of the primary factors related to the magnitude and success of domestic efforts to reduce illiteracy.

Whereas life expectancy is strongly related to development, illiteracy has only been weakly related to levels of national income; variation is more often related to cultural differences that have historically impacted women disproportionately.62 These cultural differences are in part related to religious traditions. Some religious norms have limited women’s access to schooling while others (more focused on evangelization) have sought to increase reading education so that religious texts could be studied by both men and women. Although predominantly Islamic nations are most often mentioned anecdotally as having religious norms that limit improvements in female literacy, these notions have not always withstood empirical study. Specifically, Arab states have been praised by the United Nations for being among the world leaders in rapidly improving levels of female literacy since 1970.63 However, the United Nations’ *Human Development Report* also indicates the complexities of the current status of

61 Stromquist 1990, 104.

62 Ahmed 1992, 33. However, reductions in illiteracy often do have beneficial impact on national incomes (Carceles 1990).

63 Although it is noted that these changes have occurred from relatively low levels of female literacy to begin with. United Nations Development Programme 1995, 29.
women in many Islamic societies by noting: “In general women have been more successful in overcoming cultural barriers to building their capabilities than in overcoming the barriers to using these capabilities.”

Women’s workforce participation is another condition that may favor enhanced status for women. In the language of his times, Engels noted that “the first condition for the liberation of the wife is to bring the whole female sex back into public industry.” Cotter et al. remark that there is “general agreement” now that Engels was correct and that gains in gender equality have been “fueled” by increases in female participation in the labor force. However, these gains are often qualified according to the types of jobs available to women (e.g., occupational discrimination), gender equality in incomes and promotion, and the legal and cultural environments that dictate women’s control over the incomes they earn.

Many of the countries with the highest levels of female participation in the labor force are current or former communist or Marxist states such as Cambodia, Latvia, Vietnam, Estonia, Russia, and Belarus. Developing nations such as Ghana, Tanzania, Burundi, and Rwanda also have high levels of female participation in the labor force. On average, national female participation rates in the labor force have increased from 34 percent in 1975 to 40 percent in 2000.

Once again, we expect international integration to be central to explaining these gains. Existing cross-national research indicates that increasing levels of female participation in the labor force have in part been driven by industrialization and development, or, more specifically, by the labor demands of

---

64 United Nations Development Programme 1995, 32.
66 Cotter et al. 2001, 430.
67 Semyonoc (1980) demonstrates that income inequality is decreased by increasing participation of women in the labor force.
68 See Belloc 1950; Collver and Langlois 1962; Wilensky 1968.
modern capitalist economies. Higher levels of economic development are also associated with more female employment in professional occupations. Cultural factors are also a potential explanatory factor. Some religious traditions have often directly and/or indirectly advocated particular female roles within families and households that would limit participation in the labor force. However, these traditional norms have not always withstood the cultural changes brought about by capitalist industrialization and development and have been, and continue to be, weakened in many Marxist/communist nations that have generally been more supportive of gender equality and restrictive in

---


70 Cooney 1975. Increasing female life expectancies supported by economic development may be a small and emerging factor for female participation in the labor force as well (Clark and Anker 1993, 502). As gender gaps in life expectancy increase, and larger proportions of women are widows, women are remaining in the labor force for longer periods into their senior years.

71 Clark et al. 1991.

72 Some of these norms explicitly prohibit female participation in some parts of the labor force (e.g., Islamic nations governed by Shari’ah or Islamic Law) while others have indirect impacts. For example, the Roman Catholic Church defines marriage in its Code of Canon Law as being “ordered to the good of the spouses and the procreation and education of offspring” (1985, 740). Catholic Church doctrine forbidding abortion and dissuading any form of birth control other than observance of fertility cycles indirectly implies that married women will likely spend a significant portion of their childbearing years having and raising children. The Catholic Church forbids sexual relations outside of marriage so the only officially acceptable alternative to this is life-long abstinence. Even as many Catholics may ignore these edicts we would expect that, ceteris paribus, at the margins predominantly Catholic nations would have lower levels of female participation in the labor force.
allowing the practice of traditional religions.\footnote{Inglehart (1990, 1997) has shown, higher development countries often have more “post-materialist” and tolerant attitudes, which may reflect greater levels of acceptance of women in the workplace as compared to lesser developed nations with traditional norms, often reinforced by religious doctrine and tradition.} We expect that more productive economies include more women working, though causality might flow in both directions. For the direction implied by the model, a modernization theory is most relevant. In addition, economies where larger shares of the population are involved in economic roles directly measured by GNP likely achieve greater efficiencies.

Our final dependent variable is the percentage share of women serving in national parliaments (or the lower house of bicameral legislatures). Women’s parliamentary presence marks achievements in attaining political power and has policy consequences for women’s daily lives. In a study of industrialized nations, Valerie O’Regan finds that countries with higher proportions of women in parliament are also likely to have stronger employment and wage protection policies.\footnote{O’Regan 2000.} Further, women’s numerical representation may also empower women as citizens in making claims on their government. Schwartz argues that numerical representation brings constituents into the political process by uniting them as a political group.\footnote{Schwartz 1988.} Research on political participation in the U.S. shows that where women run and are elected, women are more politically engaged.\footnote{High-Pippert and Comer 1998; Atkeson 2003.}

In 2000, the countries with the highest levels of female representation in parliament (approximately 35 percent and above) were located in Northern Europe. There are also a number of historical cases where women have occupied comparatively large shares parliamentary seats in Marxist/communist states, although they were not democratically elected (e.g., Romania in 1985, Cuba in 1990, Albania and Vietnam in 1975, and the USSR in 1980 where approximately a third of parliamentary seats were held by women). On average, the female shares of national parliaments have grown
worldwide since 1975 from 5 percent to 11 percent in 2000. When one restricts the sample to nations generally considered somewhat “democratic” by the measure of Freedom House scores, the increase is even more noticeable, starting at 5 percent in 1975 and advancing to 14 percent in 2000.

We expect many of the factors related to higher female levels of labor force participation will also be related to greater representation in parliament. In addition, we expect nations with longer histories of female suffrage and those with electoral rules designed to enhance women’s representation in national legislatures to have more parliamentary seats occupied by women. A large body of previous research shows that proportional representation (PR) party list systems are the most women-friendly. Single-member districts, alternative vote, two round, and single transferable vote systems consistently prove less favorable to the election of women. The standard explanation is that in party list PR systems, parties are more likely to add women to balance the list of candidates in an effort to broaden their appeal among voters. Further, Darcy, Welch and Clark contend that party list PR systems are conducive to women’s parliamentary representation because they bring greater legislative turnover than single-member district systems where incumbency rates tend to run higher.

We also expect that countries where more women participate in the labor force have a larger pool of women prepared to run for office. Further, countries with predominantly Protestant religious

---

77 We utilize a variable for female suffrage in all models as a partial measurement of the emergence of women’s movements. Although incomplete, this represents one of the few cross-national measures that can consistently serve as a milestone.


79 Reynolds 1999.

80 Darcy, Welch and Clark 1994.

81 See Oakes and Almquist 1993; Rule 1994; Reynolds 1999.
traditions may have higher numbers of women serving in parliament. In a systematic analysis of 180 nations, Reynolds finds that, all other things equal, Buddhist, Muslim, and Eastern Orthodox Christian countries have fewer women in parliament.

Although we have already discussed many of the potential explanatory factors for which we have expectations, there are a few that require more specific discussion – development, level of democracy, and membership in international organizations. Gross National Product (GNP) per capita is one of the primary independent variables in most empirical cross-national studies to measure varying levels of national income and development. Given our analytical goals, it is crucial to include a variable measuring economic development over time in order to distinguish between the effects of development and those of socialization on our outcome variables. GNP per capita is by no means a perfect measure of national

---

82 Many of the largest Protestant denominations provide for more equal opportunities for women within their practice of faith (O’Brien and Palmer 1993, 29). Unlike Catholic and Eastern Orthodox Christianity, some Protestant denominations ordain women as priests and some also serve as bishops. The cultural significance of women leading churches that for centuries were patriarchal may be of symbolic importance. There is also evidence of religious switching among women seeking leadership roles within religion. Perl (2006) has found that a disproportionate number of female Protestant clergy in the United States are converts from Catholicism.

83 Reynolds 1999. Certainly other explanatory factors may be at work here. Importantly, gender quota legislation for parliaments may encourage greater representation of women. However, enforcement of these policies varies greatly across the few nations who have adopted them. Further, the strength and nature of the women’s movement should improve women’s representation in politics. Yet measuring women’s movements cross-nationally is difficult, and the measures that do exist (see Weldon 2002) are largely static in nature.
wealth but it is the most widely available and widely used.84 We expect that nations with higher GNP per capita in our data set will, ceteris paribus, have more resources to dedicate to quality of life infrastructure and services and thus higher life expectancies and lower levels of illiteracy.85 Existing literature also indicates that GNP per capita would be directly associated with female life expectancy, higher participation of women in the workforce, and the share of women in parliament.

Although GNP per capita is the most widely available measure of development it is not uniformly available. GNP data do not exist for many former and current Marxist/communist nations, nor for a small number of nations undergoing periods of turmoil.86 In order to include levels of development in our models – as existing research indicates is essential – we must accept the small amount of sample bias created by the missing GNP data.87

84 We use GNP per capita after natural log transformation because we expect the initial gains of increasing GNP per capita will be greater than those at higher levels – a curvilinear effect well known to cross-national economic and social analysis. We also test the untransformed measure to ensure the best fitting application is used. These same theoretical guidelines and analytical procedures are used for all other natural log transformed variables used in our models.

85 We use GNP per capita calculated by the Atlas method. This is the most widely available data. Although some prefer to use purchasing power parity (PPP) conversions these data are not as universally available for a global set of countries during the 1975 to 2000 period. We have chosen to avoid problems of sample bias that are potentially more severe than any reliance on Atlas over PPP.

86 Including some of the years of communist rule in the USSR, Yugoslavia, Romania, Poland, Hungary, Bulgaria, Afghanistan, Vietnam, North Korea, Albania, and Cuba. To a lesser extent periods of crisis are also related to missing GNP per capita observations. For example the World Bank does not report GNPs for Afghanistan, Liberia and Somalia in the year 2000.

87 We conducted exploratory missing data analyses for each dependent variable by estimating models in which nations without GNP per capita observations were observed with dummy variables (with GNP per
The measure of authoritarianism used here is the combination (sum) of the Freedom House measures of political and civil freedom, ranging from a low score of 2 (complete democracy or presence of freedom) to 14 (complete autocracy or lack of freedom). We expect that women (as well as men) living in democratic systems will experience a higher quality of life. Elections allow for popular pressures to be more efficiently communicated, which may in turn encourage the state to provide adequate health care and education. These systems also entail greater accountability of government officials who fail to provide these services. However, our hypotheses regarding democracy and female participation in the labor force is less clear. There are competing hypotheses over the role of democracy in shaping women’s representation. On the one hand, it may be easier for women to get elected (or appointed) to “rubber-stamp” or powerless parliaments. On the other hand, authoritarianism may negatively impact women’s representation. Waylen reasons that authoritarian regimes are often built upon more traditional, gendered bases.\textsuperscript{88} However, many of the formerly communist regimes, largely built upon egalitarian ideologies in general, had high levels of women in national legislatures. Paxton finds democracy negatively impacts women’s representation.\textsuperscript{89} Without the regime-mandated gender quotas, the former communist regimes of Eastern and Central Europe certainly witnessed a fall in women’s numerical representation in the first democratic elections. To explore these hypotheses we estimate models for both the full set of countries and for the set of democratic countries only.\textsuperscript{90}

capita observations set at “0”). In most cases the nations measured by the dummy variables were associated with outcomes similar to moderately-low GNP per capita nations. These models were exploratory and intended to give an understanding of what we might expect from the largest sample. Effects on other independent variables in these models were unremarkable.

\textsuperscript{88} Waylen 1996.

\textsuperscript{89} Paxton 1997.

\textsuperscript{90} We include all parliaments – without respect to how they are formed – assuming that these positions of national leadership are important indicators of status whether seats are filled by appointment or by free
We had hoped to be able to measure the separate impacts of United Nations and World Bank membership. However, multicollinearity and fixed-effects modeling prevents the use of separate dummy variables. Further, because nearly all countries have become members of both organizations by the year 2000 the most important variation is in the length of membership. We expect that the more long-standing members of the UN and World Bank will be more likely to have absorbed international norms associated with each. We measure these histories with a single measure by adding the years of membership in both organizations.⁹¹

**Methods**

We utilize cross-sectional time-series regression techniques that take into account the specific nature of the panel data used here. Given that the number of national panels (N=180) is much larger than the number of observations over time within the panels (T=6), fixed-effects estimations are used, as recommended by Stimson for situations where N>T.⁹² These statistical methods are commonly used to avoid risks inherent in ordinary least squares (OLS) estimation on panel data where under-specified models can be subject to inference problems associated with serially correlated errors and/or

⁹¹ We include time that a nation may have spent as a territory within a UN member state (e.g., former Soviet Republics). An alternative measure excluding this time for these nations does not significantly alter the results.

⁹² Stimson 1985. Widely used time-series cross-sectional (TSCS) regression techniques (ordinary least squares with panel corrected standard errors) introduced by Beck and Katz (1995) are inappropriate for the type of data used here (635).
heteroscedasticity.\textsuperscript{93} We first attempted to use random-effects modeling for these data but regression diagnostics indicated that these methods were not appropriately controlling for the cross-sectional time-series variations in the dependent variables.\textsuperscript{94}

Thus fixed-effects models are the preferred method of estimation for our data.\textsuperscript{95} This method of estimation allows one to hold constant the many time-invariant factors that would be underspecified in random-effects models.\textsuperscript{96} The advantage of such procedures is that they allow one to focus effectively on changes over time \textit{within} countries, but the primary disadvantage is that one also loses the ability to understand potentially relevant factors that vary only across countries. Additionally, the cross-national differences represented within the independent variables that \textit{do} change over time are minimized.\textsuperscript{97} As discussed above, we do expect that there are important cross-national differences affecting outcomes on the dependent variables, which are cultural and for the most part time-invariant.

\textsuperscript{93} The primary risk is underestimated standard errors, which would lead to artificially high t-scores and possible mistakes in inferring that factors are statistical significant when they actually are not.

\textsuperscript{94} For each series of models we estimated Breusch and Pagan’s (1980) Lagrange multiplier test as modified by Baltagi and Li (1990), which indicated a preference for random effects or fixed effects estimators over OLS. We then also performed Hausman’s (1978) specification test indicating a preference for fixed effects estimators over random-effects.

\textsuperscript{95} Johnston and DiNardo (1997) note that even when random effects models are preferred, the use of fixed-effects estimators would still provide consistent parameter estimates (403).

\textsuperscript{96} Random-effects models constrain each nation to the same intercept. Fixed-effects modeling effectively sets nation-specific intercepts for n-1 cross-sections.

\textsuperscript{97} Johnston and DiNardo 1997, 399. Random-effects estimations are usually biased in over-stating the effects of observed independent variables whereas fixed-effects tend to understate their importance (Johnston and DiNardo 1997, 403).
Specifically, we expect differences in predominant religions to affect illiteracy rates, as well as the percentage of women in the workforce and parliament. Measuring religious affiliation is both simple and complicated. It is complicated in that precise estimates of religious adherence for a global sample over time are non-existent. It is simple in that the relative stability of religious affiliation within countries makes it possible to estimate baseline predominant religions with existing data sources. Even those nations without a “majority” religion in the population have relatively stable patterns of religious affiliation over time.\textsuperscript{98} We created variables that measure predominant religious affiliation (60 percent or more of the population identifying with a particular faith); however, these can not be used in fixed-effects models because there is not sufficient data to control for all important cross-national differences that would create highly-specified models and thus make random-effects estimation feasible.\textsuperscript{99} These cross-national differences are therefore subsumed into the fixed-effects.

Although we cannot examine these theoretically plausible cross-national effects, we can examine the hypotheses most central to our research. Our data representing openness to trade and foreign investment, and participation in particular international organizations and agreements does vary over time and we have argued that, ceteris paribus, these will be related to more positive outcomes for women.

Table 2 lists the definitions and sources of the variables used in the analyses presented here. We structure each model around a set of baseline control measures along with the theoretical variables of interest related to global integration. We assume that changes in development, democracy, and

\textsuperscript{98} Barrett et al. 2001. Uganda and Zambia shift during the 1975 to 2000 period between what one could refer to as “Mixed Faith” (religious pluralism, i.e. no religious faith achieves 60%) to “Mixed Christian” (Catholic + Protestant above 60%). Bosnia and Herzegovina and Chad shift from “Mixed Faith” to Islam.

\textsuperscript{99} Exploratory random-effects estimations indicated that the factors varying over time that are identified in these models as important (i.e., statistically significant) are consistent with the results of the fixed-effects estimations. The primary difference is that the random-effects models include time-invariant measures for religion and country size (area) that are also shown to be of some importance.
Marxist/communist systems may all be related to outcomes for women. Additionally, we include a variable measuring the number of years since the adoption of female suffrage in national elections, as a baseline indicator of the history of women’s rights movements within democracies. We also estimate models for female life expectancy and illiteracy that control for the male levels for each of these dependent variables. Although the male life expectancy and illiteracy variables introduce some endogeneity, the estimations do allow for some differentiation to be made regarding variables that have affected women differently than men. For life expectancy models we also include controls for the level of HIV infection and for models of female participation in the labor force we include control variables measuring the female population percentage and levels of female illiteracy. Finally, in estimations for the percentage of female representatives in parliaments we include controls for electoral systems based on proportional representation and the level of female participation in the labor force.

---

100 For this measure and the UN/World Bank membership years we use natural log transformations as we expect the cultural changes brought about by these events are most evident in the years closest to the change being made (membership or adoption of voting rights) with diminishing returns over time as the associated beneficial norms become part of the general culture.

101 This is not possible for the female percentage of the labor force or parliament seats estimations as the male percentage for each is simply the inverse of the female percentage.

102 We also estimated models where the dependent variables were female-male differences, ratios, and changes to these ratios. The limitation of all of these procedures is that they remove important information about the actual levels of life expectancy and illiteracy that are central to the understandings of quality of life. For example, a woman in a country with female life expectancies that are higher than males and even advancing disproportionately higher may still wish she were living in a nation where female life expectancies are more similar to males if female life expectancy in her country is 50 years and in the other country it is 75. Thus, even very positive changes in female-male ratios or differences may still lead to outcomes that would be considered comparatively poor in absolute terms.
Results

The results for models of levels of female life expectancy and illiteracy are presented below. Two models for each dependent variable are shown in Table 3. The only difference between these two models is that the second includes a control for the male level of the dependent variable.103

Table 3

Female life expectancy at birth

Assessing the measures of global integration in Model 1, we find that women in countries with higher levels of trade have longer life expectancies at birth. For example, the results indicate that, ceteris paribus, females in countries where trade is 77 percent of GDP have life expectancies at birth that are 8 months longer than females in states where trade measures 54 percent of GDP.104

103 Estimations were first made in Stata using the “xtreg, fe” command. For these estimations the intercept represents the average value of the fixed effects (Gould 2001). Stata “xtreg, fe” does not report many important regression diagnostics – namely multicollinearity diagnostics, Durbin-Watson scores, coefficients for the fixed effects (country dummy variables) or Adjusted R-Squares including the fixed effects. We utilize SPSS regressions with country dummy variables (n-1, as well as n with suppression of the intercept) to obtain this information – resulting in identical coefficients, standard errors, and levels of statistical significance.

104 For easier discussion of examples, the estimated effects of all variables that are transformed by natural logarithm (ln) are converted back to actual observed values. It is important to note the distribution of the
Women in nations that have signed and ratified CEDAW (*i.e.*, “CEDAW High”) have higher levels of female life expectancy at birth than those in nations who have not signed or ratified. The effect is equivalent to more than 9 months of additional life expectancy and is statistically significant. Controlling for all other factors in the model, women in nations that have signed CEDAW (*i.e.*, “CEDAW Low”) but not ratified it, have female life expectancies that are indistinguishable from nations that have not signed CEDAW. We also control for nations that have ratified CEDAW but also entered reservations about some aspect of the agreement; female life expectancy is not affected by treaty reservations.  

Among the baseline control variables, as expected, higher levels of GNP per capita are associated with higher levels of female life expectancy. Nations with more income to devote to medicine and health infrastructure tend to produce longer life spans among women. In addition, women in countries with higher levels of GNP per capita are associated with higher levels of female life expectancy. Nations with more income to devote to medicine and health infrastructure tend to produce longer life spans among women. In addition, women in countries with

---

product of the coefficient and the natural log transformed observations is non-linear; estimated changes between lower value observations produce larger effects than changes between higher value observations. To illustrate the effects of changes in specific independent variables, we compare the 1975 average (for all countries) to the 2000 average for all countries. In the example of trade/GDP ratios, for instance, 54 percent is the average for all countries in 1975 and 77 percent is the average for all countries in 2000. The other illustrations follow the same pattern.

By the terms of the convention, CEDAW reservations cannot be incompatible with the object and/or purpose of the agreement. Other nations may challenge a reservation made on these grounds. Articles 2 (removing discriminatory laws and enacting legal prohibitions against gender discrimination) and 16 (equal rights for women in marriage and family life) are the focus of many reservations on the basis of cultural or religious incompatibility. These are then often challenged by other CEDAW participating nations.

As well as lower levels of infant mortality, which are of course important determinants of life expectancy at birth (*i.e.*, the number of years, on average, an individual can expect to live at birth given current age-specific death statistics). Although post-infancy life expectancy rates could add additional
HIV infection rates of 5 percent or lower have higher life expectancy rates than women in countries with more widespread epidemics. Longer histories of women’s voting rights are also associated with higher female life expectancies. For example, women in states that have had women’s voting rights for 18 years have life expectancies at birth that are 2 years shorter than women in nations with 44 years of women voting in national elections.

In Model 2 we control for the male level of life expectancy for each observation, as a means of assessing changes for women relative to men. As noted, this introduces some endogeneity, as outcomes for men and women are strongly related; both are largely explained by and responsive to similar factors. For example, we would not expect increasing levels of development as measured by GNP per insight, these are not as widely available and would have led to a smaller and less “global” set of nations for analysis.

Like the cross-national fixed-effects, the measure for male levels of life expectancy is a control feature. Introducing these variables helps account for the N x T structure of the data in the absence of a completely or very highly specified explanatory model. Although these control variables do a significant amount of the work (as measured by the overall Adjusted R-Square) they do not actually “explain” anything. Thus, some argue that including such controls produces “models of ignorance” (Meier et al. 2001). The controls are useful in accounting for omitted theoretically important variables but always require one to consider whether the cure is worse than the disease (Johnston and DiNardo 1997, 399) in terms of increased multicollinearity with the theoretical and/or other control variables, the inability to include time-invariant theoretical variables, and the resulting large losses of degrees of freedom. For our data, the fixed-effects control measures allow us to accomplish the goal of accurately estimating the importance of factors that change over time within countries during the 1975 to 2000 period; controlling for male levels of the dependent variable allows us to draw some inferences regarding the factors that are more uniquely beneficial to women. We also estimated models controlling for time – either with a continuous year variable or dummy variables for t-1 years (i.e., two-way fixed-effects). However, at that
capita to affect only one sex. More generally, life expectancy at birth is particularly sensitive to infant mortality rates, which in turn are strongly affected by the quality of nutrition and medical services available to pregnant women. Improvements in these areas will reduce infant mortality – and increase life expectancy – for both male and female babies. Any factor that improves health for women during child-bearing years therefore benefits men as well. Thus even the changes brought about by ratifying CEDAW, to the extent they lead to improvements in women’s health, could be indirectly beneficial to men. The results for Model 2 are useful in that these allow for some isolation of variables that have affected women differently than they have affected men. However, it is critical to note that these results in no way invalidate or minimize the importance of Model 1, which does show which variables are related to changing levels of female life expectancy in absolute terms.

Point regression diagnostics indicate that the cure becomes statistically fatal in that the collective control measures explain nearly everything but of course nothing in substantive terms. It is of little use to understand variations in the dependent variables in terms of country $i$ being country $i$ in year 1, year 10 and so on. Adding a control for year introduces additional multicollinearity and instability, and leaves little room for the theoretical variables to “do their work” in explaining changes over time within panels. There is of course no insight in understanding “things get better (or worse) with time” when year is an overpowering proxy for the processes and events that are actually leading to changes. Also, unlike other studies where two-way fixed effects may make some theoretical sense, we have no reason to assume that any of our dependent variables are actually affected by time alone. We do anticipate changes occurring with advances in development but we already control for this by including a standard measure of GNP per capita in each model. The absence of a control variable for time means that we cannot rule out some potential alternative explanations that display a trend over time. However, the variables included in the models do measure the two most important (and theorized) time-related processes, development and socialization. We therefore believe that the risk of omitting an alternative, time-trending explanatory variable is small.
The results of Model 2 indicate that as life expectancies for men increase by 1 year, female life expectancies increase by 1 year and 3 weeks. Additionally, controlling for male levels of life expectancy, females in countries where trade is 77 percent of GDP have life expectancies at birth that are 1 month longer than females in states where trade measures 54 percent of GDP. Foreign Direct Investment also emerges as a factor but the effect is negative and small. Controlling for male levels of life expectancy, women in nations where FDI inflows are 4 percent of gross fixed capital formation (GFCF) have life expectancies that are slightly more than 2 weeks longer than women in nations where FDI inflows are 20 percent of GFCF.

CEDAW ratification is no longer statistically significant after controlling for male life expectancy. However, CEDAW is a statistically significant predictor of improving life expectancy outcomes for both women and men.\(^{108}\)

**Female illiteracy**

Moving up the hierarchy of needs, we present models for female illiteracy, where coefficients should be interpreted keeping in mind that positive signs represent *negative* outcomes (higher illiteracy) and negative signs represent *positive* outcomes (lower illiteracy).

In Model 1, among the global integration variables, countries that have signed and ratified CEDAW, that are more open to trade, and that have longer histories of membership in primary international organizations (United Nations and World Bank) tend to have lower levels of female illiteracy. States that have ratified CEDAW have female illiteracy rates that are 3.6 percentage points lower than nations that have yet to ratify the agreement. Countries that have signed CEDAW but not yet

---

\(^{108}\)This was confirmed by duplicating Model 1 for male life expectancy. However, this remains an unexplained correlation and establishing causation would require further analysis beyond the scope of the data collected here. It is possible that CEDAW and life expectancy outcomes are both explained by an omitted factor.
ratified it and countries that have ratified but logged a reservation to the agreement show no statistically significant change to female illiteracy.

Countries that become more open to the international system in terms of greater movement of goods and services across borders are more likely to have lower levels of female illiteracy. Controlling for all other factors in the model, a country that trades 54 percent of GDP is expected to have female illiteracy rates 1.3 percentage points higher than one that trades 77 percent of GDP. Furthermore, membership and participation in international organizations that have encouraged norms of gender equality are associated with positive effects on women’s literacy. For example, a nation that has been a member of the United Nations and the World Bank for 35 years (i.e., 70 years of collective membership) is expected to have female illiteracy rates that are 5.7 percentage points lower, on average, than nations that have been members of these international organizations for only 12 years each (i.e., 24 years collective membership).

A result running counter to expectations is that nations more open to investment (those with higher FDI inflows as a percentage of GFCF) have slightly higher levels of female illiteracy. This may be a result of increasing foreign capital creating labor demands that draw women into the labor force before completing education.\textsuperscript{109} The estimated effect, though, is very small. For example, female illiteracy is expected to be 0.5 percentage points lower in countries where FDI as a percentage of GFCF is 4 percent as compared to those where it is 20 percent. The coefficient for a five-year lagged observation of FDI inflows is in the opposite direction, although it does not achieve statistical significance.

As noted in the literature, levels of development, as measured by GNP per capita, are not consistently related to lower levels of illiteracy among women, as lesser developed countries have made significant gains in literacy while some mid-level development countries have not.\textsuperscript{110} Results from the

\textsuperscript{109} Another hypothesis is that foreign investment is seeking out the lowest labor costs and thus targets less developed areas where illiteracy rates are higher.

\textsuperscript{110} United Nations Development Programme 1995.
fixed-effects estimations indicate that, *ceteris paribus*, higher national incomes are associated with slightly *higher* levels of illiteracy during the 1975 to 2000 period. However, the effect is equivalent to less than 1 percentage point for the average change in GNP per capita for the panel between 1975 and 2000. The highest income nations with the highest levels of illiteracy are all in the Middle East or North Africa (primarily oil producing states). For example, in 2000, Zambia had a GNP per capita of approximately $310 and a female illiteracy rate of 28.9 percent. In this same year, Saudi Arabia had a GNP per capita of $7,230 and a *higher* female illiteracy rate, of 33.0 percent. Also in 2000, some of the former Soviet republics with comparatively low GNP per capita had some of the lowest female illiteracy rates in the world (e.g., Tajikistan, Moldova, Armenia, Belarus).

Controlling for all other factors, higher levels of authoritarianism are associated with slightly *lower* levels of female illiteracy. The estimated difference between the most authoritarian states and the least authoritarian states is equivalent to a 3.4 percentage point difference in illiteracy rates. This finding is in part related to patterns of democratization during the 1975 to 2000 period. Some of the former Soviet republics have remained relatively authoritarian and have very low levels of female illiteracy, whereas some other countries that have become more democratic during the period – many in Asia and Africa – have yet to reduce female illiteracy rates significantly. There are also a few long-standing outlier democracies that continue to have comparatively high levels of female illiteracy (e.g., Papua New Guinea, India). The female illiteracy rate is 3.9 percentage points higher in states that are ruled by communist or Marxist regimes. A longer history of female voting is associated with lower levels of illiteracy.111

---

111 It is also apparent that in many nations the extension of female suffrage led to more educational outreach and lower levels of illiteracy to ensure that all members of the electorate were able to cast an “informed” vote. It is also true that an increase in educational opportunities for women *predated* both the extensions of the suffrage and the women’s movements that sought this reform. In this regard lower levels of female illiteracy might have been a historical precursor to successful women’s movements and thus, some of the causality of this relationship likely flows in the opposite direction as well.
Controlling for all other factors in the model, the female illiteracy rate in nations with 44 years of female voting history is 8.3 percentage points lower than in nations with only 18 years female voting history.

Once again we estimated a second model controlling male levels of illiteracy. The coefficient for male illiteracy indicates that for every 1 percentage point increase in the proportion of men being considered illiterate, the percentage for female illiteracy increases by 1.1 percentage points. With the introduction of this variable, the signs for several coefficients – including those for GNP per capita, authoritarianism, and years of female suffrage – actually shift direction. However, this is in large part due to the overwhelming nature of the fixed-effects controls and the inclusion of a partially endogenous male illiteracy variable that together explain all but 1 percent of the variance in female levels of illiteracy. The coefficients for the trade ratio variable and length in membership in the UN and World Bank remain consistent in direction albeit with weaker estimated effects. Again, these results in no way alter the findings in Model 1, which estimate the effects of globalization on women’s illiteracy in absolute terms.

Female participation in the labor force

Results for the global integration variables (in Table 4) indicate important associations with membership in international organizations and agreements that support the empowerment of women. Controlling for all other factors in the model, signing and ratifying CEDAW is associated with an increase in the percentage of women in the workforce of 2 percentage points. Countries that have ratified CEDAW with reservations are associated with an additional 0.7 percentage point increase. This result may be an indication that some of the nations that have entered reservations are making more genuine
attempts to implement the treaty within their specific contexts. Membership in international organizations is also important. For example, a nation that has been a member of the United Nations and the World Bank for 35 years each (i.e., 70 years of collective membership) is expected to have a female share of the labor force that is 0.9 percentage points higher, on average, than nations that have been members of these international organizations for only 12 years each (i.e., 24 years collective membership).

As expected from existing cross-national research findings, higher levels of GNP per capita are associated with larger percentages of women in the workforce. Changes in the supply of the potential female labor are also a factor. For every one percent increase in the female population, the female percentage of the labor force increases 0.6 percentage points. Finally, we hypothesized that trade and FDI might have differential effects on employment for women; the models show no significant effect for either variable.

In Model 2 we attempt to understand the indirect influence of one of the other dependent variables – female illiteracy – on the female percentage of the labor force. We do so with some caution as

---

Many of the long-term post-industrial democracies have logged reservations that are very specific to existing policies: Australia (maternity leave, exclusion of women from combat), Austria (night work), France (right to choose a family name), Ireland (custody of children, social security more favorable to women) and Luxembourg (hereditary transmission of the crown). Among those that have ratified without reservation are some nations with questionable implementation and human rights issues such as Afghanistan, Burundi, Haiti, Liberia, and Rwanda. There are also a number of nations that have made broad and apparently contradictory reservations. For example, Bangladesh does not agree that they are bound to condemning and eliminating discrimination (Article 2) because this would conflict with Islamic law.

Increases in the female percent of the population of course also represent declines in supply of the available pool of male labor.
the female illiteracy variable has more missing data than the labor force variable and thus the number of countries available for analysis declines from 163 in Model 1 to 146 in Model 2. Thus the sample is slightly altered. We hypothesized that decreasing illiteracy rates would lead to increasing participation of women in the labor force; the results support that proposition. This implies that the factors identified as related to lowering levels of female illiteracy (Table 3) are also indirectly associated with increasing the number of women employed in the workforce.\textsuperscript{114}

*Female representatives in parliament*

The model for the share of seats in parliament held by women (the lower house in bicameral legislatures) is presented in Table 4 and includes two sets of estimations. The first includes all countries – those with democratically elected parliaments and those with assemblies that are not freely and fairly elected or that are shaped entirely by executive appointment. The second model is restricted to observations where nations are considered democratic (as measured by Freedom House).

For all countries, increasing foreign investment and ratified signature of CEDAW are both associated with more women serving in parliament. An increase in FDI as a percentage of GFCF from 4 percent to 20 percent is associated with an increase of 0.6 percentage points in women’s share of parliamentary seats. Ratifying CEDAW is associated with an increase of 2.1 percentage points. Higher levels of development are also associated with larger shares of parliamentary seats held by women. This may reflect a modernization effect through greater acceptance of gender equality norms among high GNP per capita nations. Although rarely elected in free and fair elections, communist or Marxist states have had female representation in parliament that is 5.3 percentage points higher than in other states. In nations using proportional representation (PR) allocation rules, the percentage of women in parliament is

\textsuperscript{114} We do not attempt to present a formal path analysis due to the limitations caused by the listwise missing data for the dependent variables.
3.4 percentage points higher. More women in the labor force is positively associated with more women in parliament. For example, increasing female labor force participation from 32 percent to 40 percent is associated with a 2.9 percentage point increase in the percentage of parliamentary seats held by women. Once again, this provides evidence of indirect path connections between the models for women’s levels of illiteracy, labor force participation, and representation in parliament.

When the same model is restricted to democracies only, a few changes are evident. The democracies-only model alters the importance of the global integration measures. Among democracies, CEDAW ratification has not led to greater shares of parliament seats held by women. However, increasing foreign investment is again associated with more women serving in parliament. An increase in FDI as a percentage of GFCF from 4 percent to 20 percent in democracies is associated with an increase in the female share of parliament seats of 0.9 percentage points.

The coefficients for GNP per capita and female share of the labor force are slightly larger among democracies. Proportional representation in democracies is no relationship with the share of parliamentary seats won by women. However, it is important to note that in a fixed-effects model, this coefficient most accurately represents those democratic countries that have dropped or adopted PR electoral systems at some point during the 1975 to 2000 period.116

The “authoritarianism” measure remains in the model even though it is restricted to democracies because this is a continuous scale that still measures differences in authoritarianism even among democracies. Also, the communist/Marxist variable drops out of the regression because none of those states have been considered democratic by Freedom House.

116 The proportional representation variable is time invariant for nations that have not made changes and this cross-sectional aspect is already accounted for in the fixed-effects modeling. For this same reason, we do not include a measure of country size (kilometers-squared) in these models even though it is strongly associated with varying levels of trade and proportional representation. In estimations where area is included – capturing the set of nations where area has changed during the period – a statistically
Testing direction of causality

For each dependent variable, CEDAW ratification is related to more positive outcomes for women. Thus it is the most consistent global integration indicator identified. An alternative interpretation of this result could be that CEDAW is merely a proxy for those countries already having in place norms, institutions, and policies supportive of the empowerment of women. In this line of reasoning, participating in CEDAW is an outcome of other factors that are positively associated with the dependent variables. Thus, perhaps countries that are predisposed (for internal reasons) to promote equality for women will both ratify CEDAW and show more favorable outcomes on the dependent variables.

To test for this possibility we analyze the data for 1975 – before CEDAW was in existence. We isolate those nations that would ratify the convention between 1980 and 1985 with a dichotomous dummy significant effect emerges only in the models for women in parliament and only then with prohibitively high levels of multicollinearity with the measures of proportional representation and trade (nations increasing in size having larger percentages of women in parliament). Area has no effect on the statistical significance of the global integration measures.

We also tested CEDAW variables that measured the amount of time since ratification which performed similar to the simple CEDAW dummy variables. For easier discussion and interpretability we use the dummy variable however, in the long-term it may be more useful to use a CEDAW years measure like the one used here for the UN and World Bank to account for variations in the time that nations have had to implement the convention and for wider socialization to occur. For the time frame of this study and the relative newness of CEDAW, this was not an important distinction. The difference between the dummy variable and time measure was most prominent in models of female life expectancy. This is not surprising as one might expect the longest lag time for changes to this outcome measure after CEDAW ratification, as opposed to outcomes for literacy, workforce participation, or parliamentary representation.
variable. We then use this dummy variable, called “CEDAW Prospective” as an explanatory variable in simple OLS models for each dependent variable. If the countries that ratify CEDAW share certain characteristics, the CEDAW Prospective variable will capture them. If those common characteristics lead to both CEDAW ratification and better outcomes for women on the dependent variables, then the CEDAW Prospective variable will be statistically significant in the models.\textsuperscript{118} The results of these cross-sectional estimations for 1975 are presented in Table 5.

<< Table 5 >>

In all but one of the models estimated the CEDAW Prospective measure does \textit{not} emerge as a statistically significant predictor. Thus, early participation in CEDAW cannot simply reflect domestic environments already favorable to women in terms of life expectancy, female participation in the labor force, and the percentage of seats in parliament held by women.

There is only one partial exception. The CEDAW Prospective measure is a statistically significant predictor of female illiteracy ($p=.04$). The set of nations that ratified CEDAW between 1980 and 1985 did have comparatively lower female illiteracy rates. However, these simple OLS models are underspecified without the country dummy variables used in the fixed effects cross-sectional time-series models. Adding just one set of potentially important cross-sectional variables – measuring predominant religion – causes the CEDAW Prospective variable to lose statistical significance. The influence of religion, circa 1975, is as expected, with Islamic countries having systematically higher levels of illiteracy (as noted, there has been improvement since). Predominantly Catholic and Buddhist countries had noticeably lower levels of female illiteracy and these countries were much more likely to ratify CEDAW

\textsuperscript{118} Even a non-specialist’s knowledge of world affairs and a quick review of the list of nations that initially ratified CEDAW would quickly dispose of the notion that these were just the collection of “progressive” nations.
during the 1980 to 1985 period (76 percent and 60 percent ratifying, respectively) and Islamic nations were much less likely to do the same (27 percent ratifying).\footnote{119

One other result of note is that longer histories of membership in the UN and World Bank are associated with lower levels of female participation in the labor force. Yet, once again, when one controls for religion this effect is no longer present and the anticipated result emerges. Catholic countries, on average, have among the longest histories of membership in these organizations and are also associated with lower levels of female participation in the labor force in 1975.

A further confirmation of these results comes through the use of Event History Analysis (EHA), specifically Cox Proportional Hazards Models, as presented in Table 6. Here we are able to place the ratification of CEDAW as a dependent variable (failure = ratification) and test the relationship with other primary variables (independent and dependent) that may have affected decisions to ratify during the 1980 to 2000 period.

\begin{table}[h]
\centering
\begin{tabular}{l l l}
\hline
\textbf{Model} & \textbf{Hazard Ratio} & \textbf{Significance} \\
\hline
Model 1 & 1.00 & 0.00 \\
Model 2 & 1.00 & 0.00 \\
Model 3 & 1.00 & 0.00 \\
Model 4 & 1.00 & 0.00 \\
\hline
\end{tabular}
\caption{Table 6: Hazard ratios for CEDAW ratification.}
\end{table}

These models largely confirm the results of the OLS regressions for 1975 as the hazard ratios for three of the four dependent variables are not statistically significant predictors of CEDAW ratification between 1980 and 2000. In addition, ratios of female to male levels of life expectancy and illiteracy do not predict CEDAW ratification (Model 2). However, these estimations indicate that nations with more women in parliament are more likely to have ratified CEDAW. This makes some sense as ratification usually involves the approval of a legislature and those legislatures with larger numbers of women might be expected to be more supportive of CEDAW. Yet, interestingly when one restricts the analysis to

\footnote{119
Predominance is measured as 60\% of the population or more affiliated with a particular faith. The excluded category includes all nations without a predominant religion, or a religious faith that is not predominant in any other nation.}
democracies only (Model 3) this relationship is no longer statistically significant. Thus, it is women in largely non-democratic parliaments that are essential to the statistical significance of this relationship.

The impact of women in parliament for the entire set of nations also does not hold up with the addition of independent variables that might be expected to be related to ratification. In Model 4, higher levels of development and authoritarianism are associated with CEDAW ratification. The final estimation, Model 5, estimates the impact of religion. Here again we confirm that predominantly Catholic nations were among the first and most likely to ratify CEDAW.

In short, the model deploying the CEDAW Prospective variable and the event history analysis, taken together, refute the notion that CEDAW ratification and favorable outcomes on at least three of the four dependent variables are both the product of other underlying factors. For the one dependent variable for which there is some evidence of endogeneity, the causal mechanism is somewhat to be expected and does not preclude that causality flows in both directions. This assertion is strengthened by the indirect linkages between improving levels of literacy that lead to increases in labor force participation of women, which in turn influences representation in parliament.

Conclusion

The evidence presented in our analysis shows that global norms and institutions make a difference for the quality of life and status of women. We have found that more often than not, when domestic cultures are more open to international influences, outcomes for women improve, as measured by health, literacy, and participation in the economy and government. Membership in the UN and World

120 Any historical variable, measured in years (e.g., women’s voting years, UN and World Bank membership) are converted to dichotomous variables as nations “leave” this type of estimation upon ratifying CEDAW. Using historical measures may lead to misleading, and even counter-intuitive results, as nations not ratifying, and staying in the panel for more observations, will continue to accumulate years on these measures. Of course in the real world nations do not “disappear” upon ratifying CEDAW.
Bank, along with international trade and investment activity, are frequently associated with improved outcomes for women. But the most consistently important factor across models is ratification of CEDAW. Participation in this agreement has played a role in increasing female levels of literacy, participation in the economy, and representation in parliament. Further, our analysis confirms that the effects of CEDAW are independent; ratification of CEDAW and positive changes for women on the dependent variables cannot be attributed to underlying domestic factors. Finally, with respect to life expectancy and illiteracy, our models show that at least some forms of international integration not only produce absolute gains for women, but also contribute to greater equality vis-à-vis men.

In examining the “rising tide” of changes in women’s roles around the world, Ronald Inglehart and Pippa Norris argue that cultural change is necessary for institutional change, which ultimately brings improvements in women’s lives.\textsuperscript{121} We concur: changes in attitudes and values are key to women achieving greater equality. Yet our analysis suggests that this process is not unidirectional. In a mutually reinforcing manner, changes in institutions can alter culture. Participation in international organizations and declarations designed to promote women’s equality can shape national attitudes. In this way, institutions such as CEDAW may act as mechanisms for change.

Finally, though our findings do support the conclusion that, on balance, expanding international ties open the way to improvements in the quality of life and status of women, they in no way imply that globalization is good for all women everywhere. Where international trade and investment erode traditional local economies, or degrade the environment, women as well as men suffer. When transnational enterprises create new jobs in one country, they may well eliminate them in another, diminishing economic opportunity and standards of living. But our initial proposition seems to hold up: increasing international exchange and communication create new opportunities for income-generating work and expose countries to norms that, in recent decades, have promoted equality for women. International norms and institutions can, at a minimum, give women one more source of leverage in

\textsuperscript{121} Inglehart and Norris 2003.
pressing for domestic reforms. Advocates of equality for women at the national level can insist that their
governments measure up to international standards and commitments. Because our findings have these
practical implications for political bargaining over women’s issues, future research may shed light on the
national processes behind these large-scale shifts. By moving between the aggregate level and in-depth
studies of particular cases, it may be possible to more fully draw out some of the mechanisms behind
these relationships, including the role of women’s groups in leveraging policy changes from international
agreements like CEDAW.
References


<br>


<br>


<br>


<br>


<br>


<br>


<br>


<br>


<br>


Jupille, James Caporaso and Joseph. 2001. The Europeanization of Gender Equality Policy and Domestic Structural Change. In *Transforming Europe: Europeanization and Domestic Change*,


<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean Statistic</th>
<th>Standard Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Life Expectancy</td>
<td>965</td>
<td>24.0</td>
<td>83.3</td>
<td>65.4</td>
<td>12.2</td>
</tr>
<tr>
<td>Female Illiteracy</td>
<td>836</td>
<td>0.2</td>
<td>98.2</td>
<td>34.9</td>
<td>30.9</td>
</tr>
<tr>
<td>Female Participation in Labor Force</td>
<td>911</td>
<td>4.7</td>
<td>55.4</td>
<td>37.2</td>
<td>9.7</td>
</tr>
<tr>
<td>Female Representatives in Parliament</td>
<td>969</td>
<td>0.0</td>
<td>42.7</td>
<td>8.0</td>
<td>8.3</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>815</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Definition</td>
<td>Source(s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Life Expectancy at Birth</td>
<td>Female life expectancy at birth.</td>
<td>World Development Indicators (WB), Women’s Indicators and Statistics Database (UN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Illiteracy age 15 and above</td>
<td>Percentage of women ages 15+ who cannot, with understanding, read and write a short, simple statement on their everyday life.</td>
<td>World Development Indicators (WB), Women’s Indicators and Statistics Database (UN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Participation in Labor Force</td>
<td>Female % of the labor force.</td>
<td>World Development Indicators (WB), Women’s Indicators and Statistics Database (UN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Representatives in Parliament</td>
<td>Female % of representatives in parliament (lower house if bicameral).</td>
<td>Women in Parliaments 1945-1995 (IPU), Women’s Indicators and Statistics Database (UN), IPU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNP per Capita</td>
<td>Natural log of GNP per capita (Atlas method), in U.S. dollars.</td>
<td>World Development Indicators (WB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authoritarianism</td>
<td>Sum of civil and political freedom scores ranging from 2 (complete freedom) to 14 (virtually no freedom).</td>
<td>Freedom House</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communist/Marxist</td>
<td>Dichotomous variable: communist or Marxist state.</td>
<td>World Political Almanac (Cook and Walker 2001)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women Voting Years</td>
<td>Natural log of years since the first institution of female suffrage in national elections.</td>
<td>IPU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td>Natural log of total area in square kilometers.</td>
<td>Cross-National Time-Series Data Archive (Banks 2000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No HIV Epidemic</td>
<td>Dichotomous variable: less than 1% of the population HIV+.</td>
<td>UNAIDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low HIV Epidemic</td>
<td>Dichotomous variable: between 1% and 5% of the population HIV+.</td>
<td>UNAIDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female Population</td>
<td>Percentage of the population that is female.</td>
<td>World Development Indicators (WB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportional Representation</td>
<td>All seats for parliamentary elections are allocated with a system of proportional representation (PR).</td>
<td>IPU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Ratio</td>
<td>Natural log of the trade ratio (total imports plus total exports divided by GDP).</td>
<td>World Development Indicators (WB), Penn World Tables 6.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI Inflows</td>
<td>Foreign direct investment inflows as a percentage of gross fixed capital formation.</td>
<td>Foreign Direct Investment Database, United Nations Conference on Trade and Development (UNCTAD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UN/World Bank Years</td>
<td>Natural log of collective years membership in the UN and World Bank (including years as a territory within a UN or World Bank nation; e.g. former Soviet republics or within another state configuration; e.g. Czechoslovakia).</td>
<td>WB, UN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEDAW Low</td>
<td>Dichotomous variable: non-ratified signatory to the Convention on the Elimination of All Forms of Discrimination Against Women.</td>
<td>UN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEDAW High</td>
<td>Dichotomous variable: ratified signatory to CEDAW.</td>
<td>UN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEDAW Reservation</td>
<td>Dichotomous variable: CEDAW participant but with a reservation.</td>
<td>UN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Religions:</td>
<td>Dichotomous variable: where 60% of the population identifies as a member of one of these global faiths. In cases where no one Christian denomination is primary but 60% or more of the population identifies with some Christian faith the observation is coded “Mixed Christian.”</td>
<td>World Christian Encyclopedia: A Comparative Survey of Churches and Religions in The Modern World (Barrett et al. 2001)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Female Life Expectancy and Illiteracy

<table>
<thead>
<tr>
<th></th>
<th>Female Life Expectancy</th>
<th>Female Illiteracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1:</td>
<td>Model 2:</td>
</tr>
<tr>
<td></td>
<td>Female Levels</td>
<td>Controlling for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male levels</td>
</tr>
<tr>
<td></td>
<td>Model 1:</td>
<td>Model 2:</td>
</tr>
<tr>
<td></td>
<td>Female Levels</td>
<td>Controlling for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male levels</td>
</tr>
<tr>
<td>Intercept</td>
<td>31.5092***</td>
<td>89.4333***</td>
</tr>
<tr>
<td></td>
<td>-0.1083</td>
<td>19.5063***</td>
</tr>
<tr>
<td><strong>Baseline Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNP per Capita (ln)</td>
<td>1.8473***</td>
<td>1.3911*</td>
</tr>
<tr>
<td></td>
<td>0.1218</td>
<td>-0.7275*</td>
</tr>
<tr>
<td>Authoritarianism</td>
<td>0.0683</td>
<td>-0.2744*</td>
</tr>
<tr>
<td></td>
<td>0.0139</td>
<td>0.2493***</td>
</tr>
<tr>
<td>Communist/Marxist</td>
<td>0.4498</td>
<td>3.8867*</td>
</tr>
<tr>
<td></td>
<td>0.1688</td>
<td>2.4891**</td>
</tr>
<tr>
<td>Women Voting Years (ln)</td>
<td>2.2421***</td>
<td>-9.2499***</td>
</tr>
<tr>
<td></td>
<td>-0.2510</td>
<td>1.6944*</td>
</tr>
<tr>
<td>No HIV Epidemic</td>
<td>1.9610**</td>
<td>--</td>
</tr>
<tr>
<td>Low HIV Epidemic</td>
<td>3.1478***</td>
<td>--</td>
</tr>
<tr>
<td>Male Level of DV</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>1.0624***</td>
<td>1.1406***</td>
</tr>
<tr>
<td><strong>Global Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Ratio (ln)</td>
<td>1.8228***</td>
<td>-2.1905*</td>
</tr>
<tr>
<td></td>
<td>0.2407*</td>
<td>-1.2971**</td>
</tr>
<tr>
<td>FDI inflows (% of GFCF)</td>
<td>-0.0010</td>
<td>0.0286*</td>
</tr>
<tr>
<td></td>
<td>-0.0034*</td>
<td>0.0057</td>
</tr>
<tr>
<td>FDI inflows (Lagged 5 Years)</td>
<td>-0.0026</td>
<td>-0.0208</td>
</tr>
<tr>
<td></td>
<td>-0.0023</td>
<td>-0.0096</td>
</tr>
<tr>
<td>UN/World Bank Years (ln)</td>
<td>0.6456</td>
<td>-5.3518***</td>
</tr>
<tr>
<td></td>
<td>-0.0741</td>
<td>-1.2301*</td>
</tr>
<tr>
<td>CEDAW Low</td>
<td>0.0841</td>
<td>-0.6249</td>
</tr>
<tr>
<td></td>
<td>0.1059</td>
<td>0.2678</td>
</tr>
<tr>
<td>CEDAW High (Ratification)</td>
<td>0.7943*</td>
<td>-3.5888***</td>
</tr>
<tr>
<td></td>
<td>-0.1547</td>
<td>0.5432</td>
</tr>
<tr>
<td>CEDAW Reservation</td>
<td>0.7308</td>
<td>0.5723</td>
</tr>
<tr>
<td></td>
<td>0.0538</td>
<td>0.5202</td>
</tr>
<tr>
<td>Number of Obs. (Panels)</td>
<td>801 (174)</td>
<td>710 (147)</td>
</tr>
<tr>
<td></td>
<td>801 (174)</td>
<td>710 (147)</td>
</tr>
<tr>
<td>R-Square Within Panels (Model)</td>
<td>.397</td>
<td>.595</td>
</tr>
<tr>
<td></td>
<td>.966</td>
<td>.890</td>
</tr>
<tr>
<td>Adjusted R-Square (FE)</td>
<td>.915</td>
<td>.927</td>
</tr>
<tr>
<td></td>
<td>.915</td>
<td>.927</td>
</tr>
<tr>
<td>Adjusted R-Square (Model+FE)</td>
<td>.956</td>
<td>.974</td>
</tr>
<tr>
<td></td>
<td>.997</td>
<td>.993</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001. Table reports unstandardized fixed-effects regression coefficients. Excluded reference category: High HIV epidemic. Coefficients for fixed-effects (FE) (country dummy variables) are not reported to conserve space (available upon request). Variance explained by the FE variables is included in Adjusted R-Square FE and Adjusted R-Square Model+FE.
Table 4. Female Participation in Labor Force and Female Representatives in Parliament

<table>
<thead>
<tr>
<th></th>
<th>Female Percentage of Labor Force</th>
<th>Female Percentage of Representatives in Parliament</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1: All Nations</td>
<td>Model 2: Controlling for Female Illiteracy</td>
</tr>
<tr>
<td>Intercept</td>
<td>-9.5357</td>
<td>-10.9176</td>
</tr>
<tr>
<td><strong>Baseline Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNP per Capita (ln)</td>
<td>1.9869***</td>
<td>2.0663***</td>
</tr>
<tr>
<td>Authoritarianism</td>
<td>0.0826</td>
<td>0.0772</td>
</tr>
<tr>
<td>Communist/Marxist</td>
<td>-0.4405</td>
<td>-0.2758</td>
</tr>
<tr>
<td>Women Voting Years (ln)</td>
<td>-0.6953</td>
<td>-1.2350*</td>
</tr>
<tr>
<td>Female Population (%)</td>
<td>0.6017***</td>
<td>0.6941***</td>
</tr>
<tr>
<td>Female Illiteracy (%)</td>
<td>--</td>
<td>-0.0452**</td>
</tr>
<tr>
<td>Female Labor Force (%)</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Proportional Representation</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td><strong>Global Integration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Ratio (ln)</td>
<td>-0.1750</td>
<td>-0.2939</td>
</tr>
<tr>
<td>FDI inflows (% of GFCF)</td>
<td>0.0077</td>
<td>0.0082</td>
</tr>
<tr>
<td>FDI inflows (Lagged 5 Years)</td>
<td>0.0065</td>
<td>0.0073</td>
</tr>
<tr>
<td>UN/World Bank Years (ln)</td>
<td>0.8338*</td>
<td>0.7282</td>
</tr>
<tr>
<td>CEDAW Low</td>
<td>0.2624</td>
<td>0.2401</td>
</tr>
<tr>
<td>CEDAW High (Ratification)</td>
<td>1.9593***</td>
<td>1.8565***</td>
</tr>
<tr>
<td>CEDAW Reservation</td>
<td>0.6738*</td>
<td>0.6407</td>
</tr>
</tbody>
</table>

Number of Obs. (Panels)         | 764 (163)                        | 705 (146)                                         | 760 (163)                           | 418 (117)              |
R-Square Within Panels (Model)  | .495                             | .478                                             | .344                                | .535                   |
Adjusted R-Square (FE)          | .933                             | .933                                             | .596                                | .604                   |
Adjusted R-Square (Model+FE)    | .959                             | .958                                             | .730                                | .800                   |

*p<.05, **p<.01, ***p<.001. Table reports unstandardized fixed-effects regression coefficients. Excluded reference category: Non-PR electoral system. †Restricted to cases where authoritarianism score is less than or equal to 8. Coefficients for fixed-effects (FE) (country dummy variables) are not reported to conserve space (available upon request). Variance explained by the FE variables is included in Adjusted R-Square FE and Adjusted R-Square Model+FE.
Table 5. Natural Experiment: The Influence of Prospective CEDAW Ratification on the Dependent Variables, 1975

<table>
<thead>
<tr>
<th>Variable</th>
<th>Female Life Expectancy</th>
<th>Female Illiteracy</th>
<th>Female Illiteracy</th>
<th>Female Participation in the Labor Force</th>
<th>Female Participation in the Labor Force</th>
<th>Female Representatives in Parliament†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>30.020***</td>
<td>114.519***</td>
<td>120.382***</td>
<td>-22.090</td>
<td>-5.501</td>
<td>-0.56</td>
</tr>
<tr>
<td><strong>Baseline Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GNP per Capita (ln)</td>
<td>6.124***</td>
<td>-11.880***</td>
<td>-12.532***</td>
<td>-1.583</td>
<td>-1.744</td>
<td>.444</td>
</tr>
<tr>
<td>Area (ln)</td>
<td>-.710*</td>
<td>1.434</td>
<td>.673</td>
<td>-.415</td>
<td>-.797</td>
<td>-.017</td>
</tr>
<tr>
<td>Authoritarianism</td>
<td>-.609**</td>
<td>2.740***</td>
<td>1.791**</td>
<td>.195</td>
<td>.499</td>
<td>-.098</td>
</tr>
<tr>
<td>Communist/Marxist</td>
<td>7.041</td>
<td>-5.489</td>
<td>-.753</td>
<td>6.398</td>
<td>-.663</td>
<td>12.052***</td>
</tr>
<tr>
<td>Women Voting Years (ln)</td>
<td>1.728*</td>
<td>-7.813**</td>
<td>-5.348*</td>
<td>3.407*</td>
<td>2.673*</td>
<td>.497</td>
</tr>
<tr>
<td>Female Population (%)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.673***</td>
<td>1.374***</td>
<td>.054</td>
</tr>
<tr>
<td>Female Labor Force (%)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>.037</td>
</tr>
<tr>
<td>Proportional Representation</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-</td>
<td>--</td>
<td>4.096***</td>
</tr>
<tr>
<td><strong>Global Integration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade Ratio (ln)</td>
<td>-1.655</td>
<td>1.545</td>
<td>1.126</td>
<td>-3.093</td>
<td>-3.659*</td>
<td>-.593</td>
</tr>
<tr>
<td>FDI inflows (% of GFCF)</td>
<td>.013</td>
<td>-.028</td>
<td>.057</td>
<td>-.076</td>
<td>-.099</td>
<td>.009</td>
</tr>
<tr>
<td>FDI inflows (Lagged 5 Years)</td>
<td>-.020</td>
<td>.102</td>
<td>.136</td>
<td>-.019</td>
<td>-.016</td>
<td>-.021</td>
</tr>
<tr>
<td>UN/World Bank Years (ln)</td>
<td>1.085</td>
<td>-1.739</td>
<td>.306</td>
<td>-3.176*</td>
<td>-1.029</td>
<td>-.757</td>
</tr>
<tr>
<td>CEDAW Prospective</td>
<td>1.150</td>
<td>-8.327*</td>
<td>-1.864</td>
<td>-.973</td>
<td>1.308</td>
<td>.649</td>
</tr>
<tr>
<td><strong>Primary Religion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>-15.765***</td>
<td></td>
<td></td>
<td>-8.141***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthodox Christian</td>
<td>-4.423</td>
<td></td>
<td></td>
<td>-8.658</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>-5.169</td>
<td></td>
<td></td>
<td>5.470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Mixed” Christian</td>
<td>-7.113</td>
<td></td>
<td></td>
<td>4.999</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islam</td>
<td>20.981***</td>
<td></td>
<td></td>
<td>-4.418</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buddhism</td>
<td>-25.987*</td>
<td></td>
<td></td>
<td>-1.081</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hinduism</td>
<td>16.432</td>
<td></td>
<td></td>
<td>-4.250</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Observations</td>
<td>107</td>
<td>103</td>
<td>103</td>
<td>106</td>
<td>106</td>
<td>105</td>
</tr>
<tr>
<td>Adjusted R-Square</td>
<td>.778</td>
<td>.734</td>
<td>.828</td>
<td>.349</td>
<td>.498</td>
<td>.310</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001. New predominately cross-sectional variables that were not included in the fixed-effects full panel models are in *italics*. Table entries are unstandardized OLS regression coefficients. Excluded reference categories: Non-PR electoral system, other religion. †Restricting the sample to democracies only does not affect the results for the CEDAW Prospective measure (B = .422, p = .785).

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3†</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Life Expectancy</td>
<td>0.9936</td>
<td>--</td>
<td>0.9946</td>
<td>1.0116</td>
<td>1.0012</td>
</tr>
<tr>
<td>Female Illiteracy</td>
<td>0.9939</td>
<td>--</td>
<td>0.9929</td>
<td>0.9927</td>
<td>1.0030</td>
</tr>
<tr>
<td>Female Labor Force (%)</td>
<td>1.0070</td>
<td>1.0080</td>
<td>0.9673*</td>
<td>0.9965</td>
<td>1.0010</td>
</tr>
<tr>
<td>Female Representatives in Parliament (%)</td>
<td>1.0285*</td>
<td>1.0315**</td>
<td>1.0147</td>
<td>1.0182</td>
<td>1.0270*</td>
</tr>
<tr>
<td>Female/Male Life Expectancy</td>
<td>--</td>
<td>1.3162</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Female/Male Illiteracy</td>
<td>--</td>
<td>0.9960</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Additional Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women’s Voting Rights</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.1132</td>
<td>--</td>
</tr>
<tr>
<td>Female Population (%)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.0039</td>
<td>--</td>
</tr>
<tr>
<td>GNP per Capita (ln)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.7368*</td>
<td>--</td>
</tr>
<tr>
<td>Trade Ratio (ln)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.7877</td>
<td>--</td>
</tr>
<tr>
<td>FDI inflows (% of GFCF)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.9963</td>
<td>--</td>
</tr>
<tr>
<td>Authoritarianism</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.9200*</td>
<td>--</td>
</tr>
<tr>
<td>Communist/Marxist</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.8909</td>
<td>--</td>
</tr>
<tr>
<td>UN Member</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.9975</td>
<td>--</td>
</tr>
<tr>
<td>World Bank Member</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.0914</td>
<td>--</td>
</tr>
<tr>
<td>Primary Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roman Catholic</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>2.0575**</td>
</tr>
<tr>
<td>Orthodox Christian</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.1166</td>
</tr>
<tr>
<td>Protestant</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.5759</td>
</tr>
<tr>
<td>“Mixed” Christian</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.2893</td>
</tr>
<tr>
<td>Islam</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.5687</td>
</tr>
<tr>
<td>Buddhism</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.7438</td>
</tr>
<tr>
<td>Hinduism</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>1.1437</td>
</tr>
<tr>
<td>Number of Subjects</td>
<td>148</td>
<td>148</td>
<td>88</td>
<td>134</td>
<td>148</td>
</tr>
<tr>
<td>Number of Failures</td>
<td>134</td>
<td>134</td>
<td>77</td>
<td>121</td>
<td>134</td>
</tr>
<tr>
<td>Initial Log Likelihood</td>
<td>-601.505</td>
<td>-601.505</td>
<td>-286.355</td>
<td>-525.766</td>
<td>-601.505</td>
</tr>
<tr>
<td>LR Chi-Square</td>
<td>13.65**</td>
<td>11.55**</td>
<td>5.71</td>
<td>21.55</td>
<td>29.23**</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001. Table entries are Hazard Ratios. Failure = CEDAW ratification, from 1980 to 2000. †Restricting to democracies only.