2015

Economic Freedom and the Lives of Women: An Empirical Analysis

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ECONOMIC FREEDOM AND THE LIVES OF WOMEN: AN EMPIRICAL ANALYSIS

By

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A Dissertation submitted to the
Department of Economics
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

2015

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To my mother, my sister, my grandmother, my aunts, all of the women who inspired me at a young age, and the ones who continue to inspire me everyday.

ACKNOWLEDGMENTS

I would like to thank my dissertation committee for assisting me with the completion of this project. In particular, I thank James Gwartney for being my mentor throughout my time at Florida State. This dissertation would not have been possible without his guidance. I also wish to thank Randall Holcombe, Bruce Benson, Anastasia Semykina, and Richard Feiock for their guidance at various stages of this project.

Keith Ihlanfeldt, Brian Meehan, Daniel Bennett, Boris Nikolaev, Joseph Connors, Martin Rode, Bjorn Kauder, Christian Bjørnskov, Robert Lawson, Joshua Hall, Virgil Storr, Peter Boettke, Antony Davies, Stefani Haeffle-Balch, Adam Martin, and many other individuals provided helpful feedback on various chapters at different seminar and conference settings. This dissertation was greatly improved by the discussions I had with these colleagues.

All views presented in this dissertation are mine alone, as are any errors.

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ABSTRACT

Recent literature on comparative institutional analysis has found that the set of institutions consistent with the concept of economic freedom correlates with higher levels of per capita income (Gwartney, Holcombe, and Lawson 2004), more rapid economic growth (Dawson 2003, 2006; Gwartney, Holcombe, and Lawson 2004, 2006; de Haan, Lundström, and Sturm 2006), more entrepreneurial activity and investment (Gwartney, Holcombe, and Lawson 2006; Dawson 2006; Bjørnskov and Foss 2008), less unemployment (Feldmann 2007, and 2010), a healthier populace (Becker, Philipson, and Soares 2005) and happier individuals (Bjørnskov, Dreher, and Fischer 2010; Gropper, Lawson, and Thorne 2011). Some researchers have examined the impact of economic freedom on income inequality (Berggren 1999; Scully 2002) as well as quality of life adjusted inequality (Becker, Philipson, and Soares 2005). However, there has been little research investigating the impact of economic freedom on women's lives and status.

This dissertation is a broad examination of the impact economic freedom has on the lives of women across the world. Chapter one reviews the existing literature on inequality, institutions, gender and economic development. It also discusses the major data sources used throughout this study. Chapter two focuses on the measurement of gender disparity in formal and informal economic institutions and incorporates these new measures into the existing indexes of economic freedom. In chapter three, a model explaining the determinants of gender discrimination is developed, which is related to Becker's (1957/1971) economic model of discrimination. The measure of gender-disparity in informal institutions developed in chapter two is used to empirically test this model. Chapter four empirically tests the impact of economic freedom on a key set of development outcomes for women: educational outcomes. The final chapter summarizes the major findings of this study, and discusses their implications for public policy and future lines of economic research.

CHAPTER ONE

INTRODUCTION

Woman wants liberty to become the woman she wants to become.

James M. Buchanan[1]

In "Natural and Artifactual Man" Buchanan provides a defense of economic freedom and liberty on ethical grounds. His argument is that institutional arrangements found in free markets provide the personal autonomy that allows individuals to choose who they wish to become. The ability to discover and become and individual of one's own choosing, he further argues, is what differentiates humans from other animals.

The ethical arguments in Buchanan's essay relate closely to those at the heart of the human capabilities approach to economic development. Sen (1999) and Nussbaum (2008) both argue that human capabilities are necessary to be fully realized human beings who live meaningful lives. Economic development traditionally defined and measured as increasing per capita incomes, does not fully capture a person's quality of life. True prosperity, it is argued, depends upon what individuals can actually accomplish.

The work of Sen (1987/1999; 1990; 1999), and Nussbaum (1999; 2000; 2011) pioneered the capabilities approach to development economics. This approach focuses on identifying the actual constraints to human functioning and flourishing (i.e. what are the limitations to an individual's ability to become the person they want to become and do the things they want to do) instead of solely focusing on increasing per capita incomes and growth rates. This line research helped change the way economists define development by focusing on a person's capability to achieve different goals they may have. The practical contributions provided the means to measure this alternative definition of economic development, resulting in the World Bank's

[1] The original quote appears at the end of "Natural and Artifactual Man" as *Man wants liberty to become the man he wants to become*. While Buchanan references only man in this particular quote, he is refering to both men and women This is clear from his use of "men and women" throughout the essay. In addtion, the entirety of his work emphasizes the importance of non-discrimination in the law and granting *all* individuals equal rights. I changed the language simply to emphasize that the primary focus of this dissertation is how liberty and economic freedom impact the lives of women.

Human Development Indicators. The policy influence can be directly seen in the Millennium Development Goals, a worldwide effort to expand access to a number of human capabilities.

This dissertation asks a different and related question, and sets the ethical issues aside. The empirical question of interest in this dissertation is whether or not economic freedom provides women with the set of tools necessary for them to become the women they wish to become. How do these types of economic institutions influence social attitudes towards women's participation in the formal economy? Are countries that are more economically free more or less likely to prioritize males over females in education, employment, and leadership opportunities? How does economic freedom influence a woman's incentive to acquire human capital beyond what is learned in primary school? Can the measure of economic freedom be improved upon by adjusting for formal legal barriers that women face when it comes to exercising economic rights? Do these adjustments significantly alter the relative EFW rankings of countries once legal barriers and gender norms are taken into account?

The literature on cross-country differences in status according to gender mostly ignores the potential for the differences in economic institutions as a possible explanation for the differences in women's rights and well-being across countries. The work of Geddes, and Lueck (2002), Doepke and Tertilt (2009), Doepke, Tertilt, and Voena (2012) Fernandez (2007, and 2009), Duflo (2012), and Alesina, Guiliano, and Nunn (2013) all offer potential explanations for gender disparity in development outcomes ranging from differences in per capita income and technology to differences in the degree of inter-jurisdictional competition. None of these authors highlight the role of economic institutions.

Recent literature finds that the set of institutions consistent with the concept of economic freedom is associated with higher levels of per capita income (Gwartney, Holcombe, and Lawson 2004), more rapid economic growth (Dawson 2003, 2006; Gwartney, Holcombe, and Lawson 2004, 2006; de Haan, Lundström, and Sturm 2006), more entrepreneurial activity and investment (Gwartney, Holcombe, and Lawson 2006; Dawson 2006; Bjørnskov and Foss 2008), less unemployment (Feldmann 2007, and 2010), a healthier populace (Becker, Philipson, and Soares 2005) and happier individuals (Bjørnskov, Dreher, and Fischer 2010; Gropper, Lawson, and Thorne 2011). Some researchers have examined the impact of economic freedom on income inequality (Berggren 1999; Scully 2002) as well. However, there has been very little research on the impact of economic freedom on women's lives.

Additionally, Becker et al. (2005) provide evidence supporting the idea that when quality of life is incorporated into measures of global inequality, worldwide inequality has been on the decline. While they do not offer a causal explanation for the decline, they suggest that health care innovations and reductions in the cost of these treatments have been driving the decline in global inequality. Economic freedom may provide the incentive for entrepreneurs to develop quality-of-life-enhancing innovations and thereby contribute to a reduction in global inequality. Barro (2000) finds little relationship between inequality and rates of economic growth and investment among countries. Berggren's (1999) work provides some evidence of a causal relationship between movements toward economic freedom and reductions in inequality. The relationship is attributed largely to trade liberalization and financial deregulation. However, little work has been done to examine whether or not a similar relationship can be found between gender-specific inequality and economic rights.

The primary data sources used in this dissertation are (1) the Fraser Institute's Economic Freedom of the World (EFW) Index, (2) the World Values Survey (WVS), and (3) the OECD's *Gender, Institutions, and Development Database* (GID-DB). Each data source is briefly defined here, but will be described in more detail in the following chapters.

Economic Freedom of the World Index: Because the main objective of this paper is to explore the effect of institutions consistent with economic freedom on development outcomes for women, a comprehensive measure of the quality of economic institutions is required. The Economic Freedom of the World annual report (Gwartney and Lawson 2014) provides the most comprehensive cross-country measure of economic freedom currently available.[2] These data have been used by other researchers to empirically examine the impact of economic institutions on various measures of economic performance. Gwartney and Lawson (2003) explain that the goal of the Economic Freedom of the World Index (hereafter EFW index) is to measure the consistency of the institutions of a particular country with personal choice, voluntary exchange, freedom to compete, and the protection of person and property. The EFW index measures institutional quality in five areas: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) exchange with foreigners, and (5) regulation of

[2] See Berggren (2003) for a description of the benefits of the EFW measure and a review of its use in the literature.

capital, labor, and business. The EFW index provides us with a chain-linked panel dataset for 124 countries relevant for this research project.[3]

World Values Survey: To capture a country's prevailing social norms and informal institutions, an extensive qualitative survey covering a broad cross-country sample of the world's population is necessary. The World Values Survey (WVS) is conducted by a worldwide network of social scientists studying personal values and their impact on social and political life. The WVS in collaboration with the EVS (European Values Study) conducted national surveys in 102 countries in waves from 1981 to 2013. These surveys are designed to capture current social attitudes about, as well as changes in, what people want out of life, what is important to them and what they believe.[4]

Gender Institutions and Development Database: The OECD's *Gender, Institutions, and Development Database* (GID-DB) provides comparative data on discriminatory social institutions related to gender inequality. The dataset covers 160 countries[5] for the year 2009 and contains data on 60 different indicators of gender discrimination. It is utilized in this dissertation for its information on legal practices that impact women's economic development. Specifically, the dataset contains information regarding the extent to which a society's legal institutions allow women to have access to the same economic rights as men. The GID-DB uses an ordinal scale in which a score of "0" indicates that the economic rights of men and women do not differ in that society. Alternatively, a score of "1" represents a society in which significant additional barriers for women's access to economic rights exist. An intermediate score of "0.5" indicates that there are moderate differences between the legal rights of men and women.

This dissertation is a study of the broad impact economic freedom has on the lives of women across the world. The remainder of this study is organized as follows. Chapter two focuses on the measurement of gender disparity in formal and informal economic institutions and incorporates these new measures into the existing index of economic freedom. In chapter three, an empirical model explaining the determinants of gender discrimination is developed using Becker's (1957/1971) model of discrimination as the theoretical foundation. The measure of

[3] For a deeper discussion of what the EFW index measures and how it is compiled, see Gwartney, J. D. and Robert A. Lawson. 2003. "The Concept and Measurement of Economic Freedom." *European Journal of Political Economy*, 19(3): 405-430

[4] Data from all five waves of the Values Surveys, carried out in 1981, 1990-1991, 1995-1996, 1999-2001 and 2005-2007 can be obtained from: http://www.wvsevsdb.com/wvs/WVSData.jsp

[5] The OECD provides data for the year 2012 as well, but this data lies outside the scope of the current study.

social norms towards women's role in society developed in chapter two is used to test this empirical model. Chapter four uses panel data to examine the impact of economic freedom on a set of women's educational outcomes. The final chapter summarizes the major findings of this dissertation, discusses public policy implications, and highlights future lines of research.

CHAPTER TWO

ADJUSTING THE ECONOMIC FREEDOM OF THE WORLD INDEX TO ACCOUNT FOR GENDER DISPARITY IN FORMAL AND INFORMAL ECONOMIC RIGHTS

2.1 Introduction

This chapter takes seriously the criticisms that indexes of economic freedom do not account for significant disparities along gender lines. Using data available from reputable third party sources, existing measures of economic freedom are adjusted to account for formal and informal barriers to the exercise of economic rights by women. These new measures of economic freedom are compared with the originals, and there is a discussion of the countries for which this adjustment results in a large change in the perceived level of economic freedom.

The development of indexes that measure the quality of economic institutions, such as the Fraser Institute's Economic Freedom of the World (EFW) index (Gwartney et al.1996), has enabled scholars to empirically examine the relationship between economic freedom and various development outcomes.[6] Greater insight has been gained into the relationship between economic freedom and GDP growth (Gwartney et al. 1999; Dawson 2003), entrepreneurial investment (Dawson 1998, Sobel et al. 2007; Bjørnskov and Foss 2008), health and general well being (Heckelman and Stroup 2000; Stroup in Gwartney et al. 2011), and happiness (Veenhoven 2000; Ovaska and Takashima 2006; Gropper et al. 2011; Nikolaev 2014).[7] The development of tools such as the EFW index expands the set of potential research projects the profession can undertake and allows us to test economic theories in new ways. Refinements to existing measures can increase the accuracy of such analyses.

The Fraser Institute's EFW index measures the quality of institutions based on the extent to which individuals in a particular society are able to determine for themselves, the best way to conduct their lives. It defines this set of economic institutions as economic freedom. This theoretical framework is best described in Berlin (1958/1969), while Rabushka (1991) and

[6] See Berggren (2003) for an initial survey of the literature on economic freedom, and Hall and Lawson (2013) for a more recent account of this research.

[7] The happiness research must be interpreted with caution, as the more recent studies provide support for the view that the relationship between happiness and freedom matter more for poorer countries than for those with higher GDP levels. See for instance Bjørnskov et al. 2010, Gropper et al. 2011, and Nikolaev 2014.

Walker (1996) discuss the extension of these ideas to the construction of an index of economic freedom. The concept of economic freedom employed by the authors of the EFW report is one of negative freedom.

Negative economic freedom is the absence of barriers to individual choice and voluntary exchange. Generally speaking, negative economic freedom can be thought of as the absence of coercion (Jones and Stockman 1992). Thus, any country possessing a set of institutions that allows for the free flow of individuals, ideas, goods, and services within the country and across national borders would be classified as free when viewed from the perspective of negative freedom. The EFW index quantifies institutions that measures the strength of negative economic rights in five areas: (1) size of government, (2) legal structure and security of property rights, (3) access to sound money, (4) exchange with foreigners, and (5) regulation of capital, labor, and business. The measure helps us gain insight into questions such as: Are property rights well protected? Are business regulations costly and burdensome? Do the rules within a particular country facilitate voluntary exchange between individuals or do they erode the potential benefits from trade? To what extent are resources allocated via the market process versus the political process? Can people and goods move freely across borders?

Indexes like the EFW index are not without shortcomings. Most substantive criticisms focus on what is included in or left out of the index, or how the various subcomponents are weighted in the calculation of the index. Some critics argue that the EFW index is biased because economists who are affiliated with free market research organizations produce it (Hanson 2003; Paldam 2003). However, this can also be perceived as one of the EFW index's strengths (De Haan et al. 2006). Since individuals identifying with such organizations are more likely to ensure that the index captures economic freedom in a negative sense, they refrain from including extraneous variables that measure outcome variables that are inconsistent with a negative rights framework such as entitlements or measures of human capabilities. The EFW index steers clear of these types of variables and any others that do not adhere to the negative rights concept of freedom.

Some criticisms ignore the fact that the stated goal of the EFW index is to measure economic freedom from a negative rights perspective. When viewed from a negative rights perspective, the composition of the EFW index becomes intuitive, as does the interpretation of what the index actually measures. It becomes clear that even the most highly contested EFW

subcomponents, such as "military conscription," are included because they fit neatly within the negative rights framework. The conscription measure, as with all other measures in the EFW index, provide information about the extent to which an individual can choose how to direct their own efforts and exercise complete control over the returns to these efforts.

Other critics of the index have noted that the concept of negative rights as the theoretical starting point for economic freedom does not speak to a country's political institutions. Thus, non-democratic countries can be (and sometimes are) classified as highly economically free according to EFW scores. But whether or not a country is a democracy does not necessarily capture economic freedom. An authoritarian regime can implement changes in the direction of supporting negative economic freedoms, perhaps more quickly than what can be accomplished in a representative democracy. Democracies also tend to move in the direction of increasing property rights violations and the erosion of the rule of law over time.

Work by De Haan and Sturm (2000) further questions what is included in indexes of economic freedom. Hanson (2003) critiques the use of proxy measures in general, and economic freedom indexes specifically.[8] First, he finds it troubling that the Fraser Institute, Freedom House, and Heritage Institute indexes are highly correlated with one another and are often interpreted as measuring the same thing. However there are major theoretical differences between what is included in each index. While the Heritage and Fraser Institute differ from one another, both indexes arguably measure economic freedom from a negative rights perspective. Both include measures of property rights protection, rule of law, size of government, the regulatory environment, and the extent to which the country has open trade.[9]

The Freedom House index of economic freedom, which was only released for one year, also primarily focuses on ownership rights.[10] This index deviates from the negative rights framework of the other two indexes in that certain institutions that limit individual choice, such as labor regulations, are deemed consistent with economic freedom. The Fraser Institute's EFW index and the Heritage index would treat such interventions as barriers that prevent potential

[8] See Heckelman (2005) for an excellent response to Hanson's critique of the Fraser index.
[9] The Fraser index additionally includes a measure of stable monetary policy, as inflation can be an indirect tax on citizens. Furthermore, volatile and uncertain inflation and interest rates due to government policies negatively influence both the value of property and opportunities for mutually beneficial exchange.
[10] Interestingly, the Freedom House index did attempt to account for differences in access to economic institutions on the bases of both gender and ethnicity. These measures were just a small subcomponent averaged in to the overall index unlike the adjustments to the overall index created in this chapter.

mutually-beneficial, voluntary exchanges from taking place. Thus, these types of institutions are inconsistent with economic freedom on indexes that use a strict negative rights theoretical framework. Because all three indexes focus largely on measuring property rights, it is not surprising that they remain highly correlated despite the differences in how each index classifies the same regulatory environments. Finally, Hanson (2003) argues that users of economic freedom indexes do not fully consider the potential endogeneity problems in their research questions. While this may have been true for the early stages of this literature, research in the area of economic freedom has broadened since then. Scholars have employed increasingly sophisticated techniques, such as instrumental variable analysis, to account for statistical problems like endogeneity.

This paper offers a new critique of indexes of economic freedom. These measures of institutional quality implicitly assume that all members of society have equal access to economic institutions. This is simply not true. There is no acknowledgement in existing measures that women in many societies do not have the same access to economic rights as men. Both formal restrictions on the economic freedom of women and strong social norms that render taboo a women's participation in formal economic activity place very real barriers in front of women wishing to own property, operate a business, and engage in voluntary exchange. This deficiency in measurement acts as a barrier to our ability to fully understand the impact of market institutions on women as a group. Without better accounting for existing gender disparities, our understanding of how economically free countries are in relation to one another is skewed. Further, our current analyses of statistical relationships between economic freedom and various development outcomes are muddied.

This work is grounded in the theoretical framework of New Institutional Economics, which argues that the rules governing our choices and our exchanges largely determine the pattern of economic outcomes, i.e. the distribution of wealth and well-being. Thus, the relevant disparity measures for this study are ones capturing the differences in rules faced by men and women, not measures capturing the differences in their development outcomes. Dependent variables of interest in future research are likely to be different measures of development outcomes like gender differences in income, human capital, life span, and other proxies for well-being. As such, focusing only on the rules that individuals face, rather than development outcomes, will help minimize endogeneity problems in future research.

This study uses a set of measures recently developed by the Organization for Economic Co-Operation and Development (OECD) to capture the gender disparity in access to formal economic rights, the *Gender, Institutions, and Development Database* (GID-DB). Questions from the World Values Survey (WVS) are also used to create a measure of social norms regarding gender preferences in education, employment and leadership roles. These data sources contain several subcomponents that reflect gender disparity in formal and informal laws. These measures can be used to adjust the EFW index to obtain a more accurate reading of the quality of the economic institutions that exist across the world.

The subcomponents selected for inclusion in each index are chosen because, like the components of the EFW index, they measure gender disparity in the security of various types of property rights, contract enforcement, and in the ability for individuals to engage in voluntary transactions.[11] Differences in access to political institutions and civil liberties that do not directly relate to the exchange process are not considered in this index. Each component selected to adjust the economic freedom measures adhere to the strict negative rights framework.

The remainder of this chapter is structured as follows. Section two describes the data used and the steps taken to construct the Gender Disparity in Economic Rights Index. It also discusses how country economic freedom scores change after adjusting for gender differences in economic rights. Section three, describes the components of the World Values Survey used, and the process followed to create the Index of Norms towards Women's Role in Society. It also contains a discussion of those results. The final section concludes by describing overall patterns and general observations about the data, as well as offering directions for future research.

2.2 Using the Gender, Institutions, and Development Database to Construct the Gender Disparity in Economic Rights Index

The OECD's *Gender, Institutions, and Development Data Base* (GID-DB) is a collection of 60 different cross-country measures of gender-disparity for 161 countries. The GID-DB provides a comprehensive source of information about a country's informal institutions in four major categories: family code, physical integrity, civil liberties, and ownership rights (Jutting et

[11] See Rabushka 1991, Walker 1996, and Gwartney et al. 1996 for a detailed description of the reasoning behind the Fraser Institute's EFW index. See Gwartney et al. 2014 for an explanation of the current methodology and variables included in the index.

al. 2008). The 2009 and 2012 versions of the GID-DB do not include data for OECD member countries.[12]

This study creates a composite index out of the GID-DB subcomponent variables that have a strong theoretical influence on a woman's ability to exercise economic rights. The index includes only those variables relating to the ownership and inheritance of property, variables restricting an individual's ability to arrange and engage in voluntary transactions, and variables preventing individuals from maintaining control of their property and the fruits of their labor. Measures of development outcomes, such as female absolute and relative educational enrollment rates, women's absolute and relative mortality rates, and women's access to the political process, are excluded. Five of the 14 components included in the GID-DB meet these criteria.

To use the GID-DB to create a measure of gender disparity in access to economic rights in a way that is consistent with the Fraser Institute's EFW index, the original scale of the OECD data was inverted by subtracting the original scores from one. This adjustment provides a more intuitive interpretation of both the index of gender-disparity that is created using this OECD data. It also makes it easier to interpret the results of using this data to adjust the EFW index. After the inversion, values of "0" indicate extensive gender inequality when it comes to exercising a particular economic right, while values of "1" indicate complete gender equality.[13] For example, Brazil in 2009 has a score of "0" in the "Freedom of Movement" category according to the original OECD data. After inverting the data, Brazil would have a score of "1" indicating no additional gender restrictions. The variables are described in detail in Table 2.1. Differences between the 2009 and 2012 variables definitions are noted.

[12]The GID-DB does not provide data for OECD member countries, so additional data was used to supplement the 2009 and 2012 OECD figures. First, the World Bank's *Women, Business, and the Law* report provides data on several similar topics. This data was used to create an initial estimate of the variable values for OECD member countries. Second, the preliminary figures were then compared with the figures in the 2014 GID-DB, since data for OECD member countries is now incorporated into the database. There were very few differences between the two data sources. In many cases, part of the discrepancies can be explained by slight changes in the way each component is measured between the 2012 and 2014 databases.

[13]It is important to note that some of these restrictions may apply to certain groups of women in the population and not others. For example, in countries like Bahrain, restrictions on inheriting property are places on Sunni Muslim women, but not on Shia women to the same extent. In such instances, the OECD takes measures to adjust the value according to the proportion of the population impacted by the restriction.

Table 2.1: Description and Sources for Gender Disparity in Economic Rights Index Variables (OECD 2009 and 2012 Data)[14]

Variable	Description	Scoring	Source[15]
Inheritance	Measures whether bequests to female heirs are treated in the same manner as bequests to male heirs.	0 = inheritance is only given to male heirs; 0.5 = customary inheritance laws give preference to male heirs; 1= there is no legal difference between the treatment of male and female heirs.	Lang (1998)
Freedom of Movement[16]	Measures the extent to which a woman has the freedom to leave the house and travel in public alone, and without permission from a husband or male relative.	0 = women have no ability to move freely outside of their home alone; 0.5 = women may travel to work alone, but may not visit friends or family without their husband's permission; 1= there exist no legal restrictions on the ability of women to travel alone outside of their homes.	Lang (1998)
Access to Land	Captures the extent to which women are able to acquire and maintain the possession of land.	0 = women find it virtually impossible to obtain property rights over land; 0.5 = there are some restrictions on women's ability to own land; 1 = there are no restrictions on the ability of women to own land.	Various[17]
Access to Credit	Measures the extent to which women are able to obtain a bank loan on their own without obtaining the permission of their husband or a male relative.	0 = women find it virtually impossible to obtain a bank loan without the assistance of a male relative; 0.5 = if it is difficult for women to receive a bank loan without male assistance, but it is not impossible; 1 = there are no restrictions on women's ability to obtain bank loans.	Various
Access to Property Other than Land	Measures restrictions on women's ability to own property other than land, including other immoveable property.	0 = women are unable to acquire and legally control these types of property; 0.5 = there are some restrictions on women's ability to own and control of these types of property; 1 = women have full and complete ability to own and control these types of property.	Various

[14] The OECD's original coding was inverted to be more consistent with the EFW index. In the initial coding "1" denotes significant disparity between the treatment of males and females, while "0" denotes complete gender equality under the law. In order to be consistent with the EFW index, this scale is inverted by subtracting each country's original score from one. This way a score of "0" represents a situation in which women have no access to the economic right, and "1" represents a situation in which women have full access.

[15] All variables were collected from the OECD's Gender, Institutions, and Development Database. This column describes the source the OECD used to derive their data.

[16] This variable differs in name from 2009 to 2012. In the 2009 index, this variable is called "Freedom of Movements" but in the 2012 index the comparable variable that captures an individual's ability to move about as they wish is called "Access to Public Space." The "Access to Public Space" variable score is derived from data from Human Rights Watch (2010) and the U.S. Department of State (2012). This variable captures the legal restrictions and social norms that prevent a woman from moving freely within their country as well as outside of it in a way that is similar to, but more extensive than, the 2009 variable.

[17] Data for variables with a source listed as "Various" are all derived by examining data from a combination of the following sources: Amnesty International, BRIDGE (a research and information service of the Institute for Development Studies in Sussex, UK specializing in gender and development), the Women in Development Network, AFROL (a news agency that concentrates on Africa), and Lang (1998). OECD researchers compare and contrast the data from these various sources to arrive at the final scores.

Next, the data for the 34 OECD member countries was added using information contained in the World Bank's *Women, Business, and the Law Report* for both the years 2009 and 2012.[18] The *Women, Business, and the Law Report* (WB&L) is a perceptions based measure covering six topics: accessing institutions, using property, getting a job, providing incentives to work, building credit, and going to court. Existing barriers to women's labor force participation and entrepreneurship are cataloged for 141 economies around the world, including the 34 OECD member countries not included in the GID-DB. The WB&L dataset combines information from surveys of legal experts with data about the written laws in a society. Thus, this data, like the GID-DB provides a picture of both the de jure and de facto barriers to women's economic rights.

Several components in WB&L capture legal barriers corresponding to the five GID-DB variables. Six questions capture the extent to which women are able to move freely outside of their homes in the same way as men. The average of these six values is used in place of the OECD "Freedom of Movement" variable. Similarly, the two variables dealing with inheritance restrictions and the two variables dealing with women's access to bank loans are averaged together to provide values for "Inheritance" and "Women's Access to Bank Loans" respectively.

The correlation coefficient between the composite indexes for the GID-DB and the WB&L report is 0.4711 for 109 overlapping observations in 2009, and 0.5365 for 110 overlapping observations in 2012. All of the correlation coefficients between the GID-DB subcomponents and the corresponding WB&L subcomponents are positive. The correlation coefficient for both years combined is 0.4930 for 219 observations. The correlation matrices for these indexes and their subcomponents are included in the appendix Tables A.6 through A.13. These correlation coefficients are not particularly high, but several factors suggest that this substitution is still appropriate.

First, the WB&L data is a set of dummy variables indicating whether barriers to women's economic rights exist. The GID-DB figures, on the other hand, provide an intermediate measure of the extent of the barriers women face. Second, the countries for which the WB&L data is used are the 34 OECD member countries. These are generally high income, well-developed, "Western" nations. These advanced countries are not expected to have many barriers to women's rights, and the World Bank data bears this out.

[18] The Women, Business, and the Law Report provides data for the years 2009, 2011, and 2013. The data for 2013 is used for 2012.

Additionally, the set of countries included in the 2014 edition of the GID-DB has been expanded to include OECD member countries. This 2014 GID-DB data is compared with the supplemented data for OECD member countries in years 2009 and 2012 to determine whether or not the supplemented data accurately depicts gender disparity in these countries. The 2014 GID-DB data is consistent with the data used from the WB&L dataset for 2009 and 2012 in the vast majority of cases.[19] There were few changes to legal institutions in this set of countries during this time that would have altered gender-based legal barriers to economic rights. Because of this, it seems that the supplemented data for OECD member countries is not problematic.

After supplementing the GID-DB with the World Bank data for the OECD member countries, the Gender Disparity in Economic Rights Index (GDERI) is calculated for 2009 and 2012. A simple average of the five components gives the value for the index of gender disparity in formal economic rights. A country receives an overall index score if there is data for at least three out of the five categories. The values for each of the subcomponents for 2009 are presented in Table A.1 in the appendix to chapter two. Table A.2 contains the same data for 2012.

There are a large number of countries with a score of "1" for their cumulative GDERI scores, indicating that there is no difference in the legal treatment of men and women in these places. This does not necessarily mean that men and women are completely economically free in these countries. It simply means that men and women have equal access to economic institutions, regardless of their quality. Most of these countries are high-income, OECD member countries in Western Europe, the Americas, Australia, New Zealand, and a few other locations. These countries generally have high initial unadjusted EFW scores. There are other notable countries that also have a GDERI score of "1," such as Myanmar, Russia, and Venezuela. While these countries are not bastions of economic freedom in general, there are no additional barriers to economic rights that apply only to women.

Countries with significant differences between the treatment of men and women under the law are generally located in the Middle East and Northern Africa. In fact, nearly all countries

[19] Data for the 34 OECD member countries were absent from the GID-DB in 2009 and 2012. Based on analysis of the supplementary WB&L data for those years, all 34 countries were assigned a rating of "1" for each of the five subcomponents. For 163 out of 170 subcomponent scores, the 2014 GID-DB also assigned a value of "1." Moreover, even the seven deviations from "1" mostly reflect changes in the definition of the GID-DB variables. For example, "Access to Land" previously captured the legal barriers to owning land that women faced. However, beginning in 2014, this variable measured the percentage of agricultural land owned by females. In summary, the comparison between the 2014 GID-DB and the scores assigned to the 34 OECD countries during the earlier years based on the WB&L data, provides us with a high degree of confidence in the assigned ratings.

with an index score of 0.55 or lower, are located in these regions. A few countries outside of these regions, like Bangladesh, Sri Lanka, Papua New Guinea, and Albania, also have scores of 0.55 or lower. Three of these countries are located in Southeast Asia, while Albania is located in Southeast Europe. Both Albania and Bangladesh have sizeable Muslim populations (63% and 90%, respectively, according to the 2010 data from the World Religion Dataset). Papua New Guinea has a wide variety of religions (Catholicism is the largest at 27% of the population), and Sri Lanka is mostly Buddhist (69%).

Table 2.2 provides the descriptive statistics for the Gender Disparity in Economic Rights Index (GDERI) for 2009. There is less variation in the "Freedom of Movement" variable than in the other variables. "Inheritance" and "Access to Land" have similar means (0.7522 and 0.7478, respectively) and standard deviations (0.3270 and 0.3202, respectively). The same can be said for "Access to Credit" and "Access to Property Other than Land" with means of 0.8233 and 0.8147 and standard deviations of 0.2658 and 0.2761, respectively. The overall GDERI scores for 2009 range from 0.25 to 1.00.

Table 2.2: Descriptive Statistics for Subcomponents of the Gender Disparity in Economic Rights Index, 2009

Variable Name	Observations	Mean	Standard Deviation	Minimum	Maximum
Inheritance	115	0.7522	0.3270	0	1
Access to Land	115	0.7478	0.3202	0	1
Access to Credit	116	0.8233	0.2658	0	1
Access to Property other than Land	116	0.8147	0.2761	0	1
Freedom of Movement	115	0.9130	0.1903	0.5	1
Gender Disparity Index	116	0.8095	0.2243	0.25	1

Table 2.3 shows the correlation coefficients between the subcomponents of the Gender Disparity in Economic Rights Index and the summary score for 2009. The lowest correlation coefficients are found in the "Freedom of Movement," as this variable measures a civil liberty and not a property right like the other variables. Despite the lower correlation, "Freedom of Movement" is included because it is necessary to exercise one's economic rights.[20]

[20]The results of a factor analysis robustness check confirm that "Freedom of Movement" is similar enough to the other components to be grouped with them in an index.

Table 2.3: Correlation Coefficients for Subcomponents of the Gender Disparity in Economic Rights Index, 2009

	Inheritance	Access to Land	Access to Credit	Access to Property other than Land	Freedom of Movement	Gender Disparity Index
Inheritance	1.0000					
Access to Land	0.6910	1.0000				
Access to Credit	0.6121	0.6337	1.0000			
Access to Property other than Land	0.5502	0.7226	0.6226	1.0000		
Freedom of Movement	0.4875	0.2997	0.2676	0.3601	1.0000	
Gender Disparity Index	0.8598	0.8737	0.8037	0.8311	0.5570	1.0000

Next, the Gender Disparity in Economic Rights Index can be used to adjust the EFW scores for 2009. Equation 2.1 provides the method to calculate a women's economic freedom index. Equation 2.2 depicts the process to adjust the overall EFW index.

(2.1) *Women's EFW Score = EFW Score * Gender Disparity in Economic Rights Index Score*

(2.2) *Adjusted EFW Score = (Male Percentage of the Population * EFW Score) + (Female Percentage of the Population * EFW Score * Gender Disparity in Economic Rights Index Score)*

Table 2.4 provides the results of adjusting the 2009 EFW scores using the Gender Disparity in Economic Rights Index. The first column lists the country names and the second column shows the Gender Disparity in Economic Rights Index scores. The third column provides the unadjusted EFW scores for 2009, which also accurately measure the men's access to economic rights. Column four provides the women's EFW score, while column five provides the overall adjusted EFW score. The sixth column provides the absolute change in the EFW score after making the adjustment. Finally, column seven shows the percentage change in the EFW score resulting from the overall adjustment. To better understand the results of the adjustment, one must consider both the absolute and percentage change presented in columns six and seven, respectively. The data in Table 2.4 is sorted from the highest unadjusted EFW score to the lowest.

An examination of Table 2.4 makes several things apparent. Countries with the largest decreases in the EFW scores after making the adjustment are generally located in Africa and the Middle East. Each country with a drop in EFW score of 30% or greater had a drop in its absolute score of at least 1.39 points. This decrease in size is greater than a one standard deviation fall in economic freedom. The largest decreases occurred in Guinea-Bissau (38%), Sierra Leone (35%), and Chad (35%). Many countries in the Middle East and Asia also experienced more moderate percentage decreases. Each country that experienced a drop in score of 10% or greater had a drop in absolute score of at least 0.6 point. Most countries with decreases greater than 15% had a decrease in absolute score of 1.0 full point or more. Some of these countries include: Oman (17%) and Senegal, Morocco, Sri Lanka, Niger, Algeria, Papua New Guinea, and Syrian Arab Republic (all with 15%). Fifty-five countries experience no change to their 2009 EFW score after accounting for gender disparities. While these countries are largely the OECD member countries and other relatively developed countries, there are a few others that stand out, like Myanmar, Russia, and Venezuela, which were discussed previously.

Table 2.5 presents the results of the GDERI-adjusted EFW data in a different light. Instead of looking at the absolute and percentage changes to the overall EFW score, Table 2.5 shows how the EFW ranking of each country is altered after accounting for gender disparity. Some of these changes are immediately striking, while others require closer examination. Many countries located at lower end of the unadjusted rankings do not change much in terms of relative position, even though the adjustment to the EFW score is relatively large. The Democratic Republic of Congo, for example, is ranked in position 112 using unadjusted EFW scores, and it remains in position 112 once gender disparity is taken into account. The overall EFW score, however, fell by 25% after the adjustment, from 4.98 to 3.93. The scores for several other countries undergo a similar change. Thus, it is important to consider the information presented in both Tables 2.4 and 2.5 together when interpreting these results.

Table 2.5 is divided into two panels with identical information. The first column in each panel provides the country name. The second and third columns give a country's unadjusted EFW rank and the adjusted EFW rank, respectively. The final column shows the change in a country's rank after adjusting the EFW score with the Gender Disparity in Economic Rights Index. Most of the countries that experience a positive change in their rank are countries that have a GDERI score close to "1." Several countries that ranked highly to begin with remain

Table 2.4: Index of Gender Disparity in Economic Rights and Adjustments to EFW Scores, 2009

Country	Gender Disparity in Formal Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Hong Kong, China	1.00	9.00	9.00	9.00	0.00	0.00
Singapore	1.00	8.60	8.60	8.60	0.00	0.00
New Zealand	1.00	8.36	8.36	8.36	0.00	0.00
Canada	1.00	8.14	8.14	8.14	0.00	0.00
Australia	1.00	8.10	8.10	8.10	0.00	0.00
Switzerland	1.00	8.05	8.05	8.05	0.00	0.00
United Kingdom	1.00	7.95	7.95	7.95	0.00	0.00
Mauritius	1.00	7.93	7.93	7.93	0.00	0.00
Chile	0.80	7.92	6.34	7.12	-0.80	-0.10
Finland	1.00	7.79	7.79	7.79	0.00	0.00
Denmark	1.00	7.74	7.74	7.74	0.00	0.00
Estonia	1.00	7.72	7.72	7.72	0.00	0.00
United States	1.00	7.71	7.71	7.71	0.00	0.00
Zambia	0.40	7.71	3.08	5.39	-2.32	-0.30
Oman	0.60	7.69	4.61	6.38	-1.31	-0.17
Ireland	1.00	7.67	7.67	7.67	0.00	0.00
Netherlands	1.00	7.63	7.63	7.63	0.00	0.00
Austria	1.00	7.62	7.62	7.62	0.00	0.00
Bahrain	0.60	7.61	4.57	6.46	-1.15	-0.15
Germany	1.00	7.57	7.57	7.57	0.00	0.00
Taiwan	0.90	7.55	6.80	7.17	-0.38	-0.05
Sweden	1.00	7.53	7.53	7.53	0.00	0.00
United Arab Emirates	0.60	7.52	4.51	6.63	-0.89	-0.12
Uganda	0.40	7.51	3.00	5.26	-2.25	-0.30
Japan	1.00	7.50	7.50	7.50	0.00	0.00
Costa Rica	1.00	7.49	7.49	7.49	0.00	0.00
Slovak Republic	1.00	7.49	7.49	7.49	0.00	0.00
Kuwait	0.80	7.48	5.98	6.88	-0.60	-0.08
Albania	0.80	7.47	5.98	6.73	-0.74	-0.10

Table 2.4 - Continued

Country	Gender Disparity in Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
France	1.00	7.47	7.47	7.47	0.00	0.00
Norway	1.00	7.46	7.46	7.46	0.00	0.00
Peru	1.00	7.44	7.44	7.44	0.00	0.00
Jordan	0.50	7.43	3.72	5.61	-1.82	-0.24
Belgium	1.00	7.42	7.42	7.42	0.00	0.00
El Salvador	0.90	7.40	6.66	7.01	-0.39	-0.05
Panama	1.00	7.33	7.33	7.33	0.00	0.00
Jamaica	0.80	7.26	5.81	6.52	-0.74	-0.10
Bulgaria	1.00	7.24	7.24	7.24	0.00	0.00
Spain	1.00	7.22	7.22	7.22	0.00	0.00
Hungary	1.00	7.19	7.19	7.19	0.00	0.00
Korea, Republic	1.00	7.18	7.18	7.18	0.00	0.00
Portugal	1.00	7.18	7.18	7.18	0.00	0.00
Romania	1.00	7.17	7.17	7.17	0.00	0.00
Guatemala	0.90	7.16	6.44	6.79	-0.37	-0.05
Israel	1.00	7.13	7.13	7.13	0.00	0.00
Poland	1.00	7.13	7.13	7.13	0.00	0.00
Latvia	1.00	7.11	7.11	7.11	0.00	0.00
Czech Republic	1.00	7.09	7.09	7.09	0.00	0.00
Croatia	1.00	7.08	7.08	7.08	0.00	0.00
Trinidad and Tobago	0.90	7.08	6.37	6.72	-0.36	-0.05
Uruguay	1.00	7.06	7.06	7.06	0.00	0.00
Slovenia	1.00	7.04	7.04	7.04	0.00	0.00
Ghana	0.60	7.02	4.21	5.60	-1.42	-0.20
Iceland	1.00	7.02	7.02	7.02	0.00	0.00
Lithuania	1.00	7.02	7.02	7.02	0.00	0.00
Botswana	0.60	7.00	4.20	5.60	-1.40	-0.20
Haiti	0.75	6.99	5.24	6.11	-0.88	-0.13
Honduras	1.00	6.96	6.96	6.96	0.00	0.00

Table 2.4 - Continued

Country	Gender Disparity in Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score 2009	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Kenya	0.50	6.90	3.45	5.17	-1.73	-0.25
Rwanda	0.50	6.89	3.45	5.12	-1.77	-0.26
Dominican Republic	0.80	6.82	5.46	6.14	-0.68	-0.10
Greece	1.00	6.79	6.79	6.79	0.00	0.00
Indonesia	0.80	6.78	5.42	6.11	-0.67	-0.10
Philippines	0.90	6.78	6.10	6.44	-0.34	-0.05
Nicaragua	0.90	6.77	6.09	6.43	-0.34	-0.05
Malaysia	0.80	6.76	5.41	6.07	-0.69	-0.10
Italy	1.00	6.72	6.72	6.72	0.00	0.00
Thailand	1.00	6.70	6.70	6.70	0.00	0.00
Egypt, Arab Republic	0.90	6.69	6.02	6.36	-0.33	-0.05
Sierra Leone	0.30	6.66	2.00	4.31	-2.35	-0.35
South Africa	0.50	6.61	3.31	4.91	-1.70	-0.26
Mexico	1.00	6.60	6.60	6.60	0.00	0.00
Namibia	0.60	6.55	3.93	5.20	-1.35	-0.21
Papua New Guinea	0.70	6.53	4.57	5.57	-0.96	-0.15
Bangladesh	0.50	6.52	3.26	4.92	-1.60	-0.25
Turkey	1.00	6.52	6.52	6.52	0.00	0.00
Paraguay	1.00	6.50	6.50	6.50	0.00	0.00
India	0.50	6.47	3.24	4.91	-1.56	-0.24
Iran, Islamic Republic	0.50	6.43	3.22	4.85	-1.58	-0.25
Fiji	0.80	6.42	5.14	5.79	-0.63	-0.10
Morocco	0.70	6.35	4.45	5.38	-0.97	-0.15
Bolivia	1.00	6.34	6.34	6.34	0.00	0.00
Brazil	1.00	6.33	6.33	6.33	0.00	0.00
Colombia	0.90	6.32	5.69	6.00	-0.32	-0.05
Tunisia	0.90	6.27	5.64	5.95	-0.32	-0.05
Russian Federation	1.00	6.25	6.25	6.25	0.00	0.00
Tanzania	0.60	6.22	3.73	4.97	-1.25	-0.20

Table 2.4 - Continued

Country	Gender Disparity in Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Madagascar	0.90	6.21	5.59	5.90	-0.31	-0.05
Mali	0.60	6.14	3.68	4.92	-1.22	-0.20
China	1.00	6.12	6.12	6.12	0.00	0.00
Sri Lanka	0.70	6.12	4.28	5.19	-0.93	-0.15
Cameroon	0.40	6.11	2.44	4.28	-1.83	-0.30
Cote d'Ivoire	0.60	6.10	3.66	4.91	-1.19	-0.20
Malawi	0.50	5.99	3.00	4.49	-1.50	-0.25
Argentina	1.00	5.95	5.95	5.95	0.00	0.00
Pakistan	0.50	5.94	2.97	4.50	-1.44	-0.24
Nigeria	0.50	5.84	2.92	4.40	-1.44	-0.25
Ukraine	1.00	5.83	5.83	5.83	0.00	0.00
Ecuador	0.90	5.80	5.22	5.51	-0.29	-0.05
Senegal	0.70	5.79	4.05	4.90	-0.89	-0.15
Central African Republic	0.60	5.76	3.46	4.59	-1.17	-0.20
Togo	0.40	5.75	2.30	4.00	-1.75	-0.30
Benin	0.50	5.74	2.87	4.30	-1.44	-0.25
Gabon	0.40	5.69	2.28	3.99	-1.70	-0.30
Nepal	0.50	5.69	2.85	4.24	-1.45	-0.26
Niger	0.70	5.67	3.97	4.82	-0.85	-0.15
Guinea-Bissau	0.25	5.66	1.42	3.52	-2.14	-0.38
Chad	0.30	5.52	1.66	3.59	-1.93	-0.35
Syrian Arab Republic	0.70	5.46	3.82	4.66	-0.80	-0.15
Burundi	0.60	5.22	3.13	4.16	-1.06	-0.20
Congo, Republic	0.60	5.19	3.11	4.15	-1.04	-0.20
Congo, Democratic Republic	0.50	4.98	2.49	3.73	-1.25	-0.25
Algeria	0.70	4.97	3.48	4.23	-0.74	-0.15
Zimbabwe	0.40	4.56	1.82	3.17	-1.39	-0.30
Venezuela, RB	1.00	4.16	4.16	4.16	0.00	0.00
Myanmar	1.00	3.69	3.69	3.69	0.00	0.00

among the top ranked countries, but there are significant changes in the ranking of many other countries.

In general, countries in the Middle East and Africa exhibited the greatest decreases in their rank. Other countries with large decreases, such as Bangladesh and Albania, have sizeable Muslim populations that create a legal environment that shares characteristics of Middle Eastern countries. Additionally, small island nations such as the Dominican Republic, Haiti, and Jamaica experienced moderated decreases in their relative positions. This is consistent with the results presented in Table 2.4.

Countries that experienced a decrease in rank of 30 positions or more include places like Zambia (-67), Uganda (-59), Oman (-45), Jordan (-43), Bahrain (-38), and Sierra Leone (-32). Decreases in rank between 20 and 29 positions occurred in the United Arab Emirates (-29); Kenya and Rwanda (-27); Chile (-26); Ghana and Botswana (-22); and South Africa (-21). With the exception of Chile, the largest decreases in rank occurred exclusively in the Middle East and Africa. More moderate decreases occurred in places like Albania (-18), the Islamic Republic of Iran (-16), Bangladesh (-14), India (-13), Namibia (-11), and Taiwan (-10). Countries experiencing slight changes of 10 positions or less include: El Salvador, Chad, Malawi, Nigeria, Indonesia, Malaysia, Guatemala, Zimbabwe, Morocco, Nepal, and Tanzania.

Many countries either increased in rank or remained the in the same position. This may result because the GDERI score is equal to "1" so that there is no difference between the adjusted and unadjusted EFW scores. On the other hand, this may be because the downward adjustment to the EFW score for that country is smaller than those of similarly ranked countries. The majority of countries with unchanged/increased rankings are the OECD member countries and other highly developed industrial nations receiving a GDERI score of "1."

Table 2.6 provides the descriptive statistics for the Gender Disparity in Economic Rights Index for 2012. The mean and standard deviation scores for each subcomponent are quite close to one another. The mean scores all range from 0.7069 to 0.7888 and the standard deviations range from 0.2588 to 0.3801. The minimum GDERI score for 2012 is 0.1 versus 0.25 for 2009. There are 46 countries with an overall index score of "1" in 2012.

Table 2.5: Change in EFW Rankings as a Result of the Adjustment for Gender Disparity in Economic Rights, 2009

Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank	Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank
Hong Kong, China	1	1	0	**Albania**	30	48	-18
Singapore	2	2	0	**Norway**	31	22	9
New Zealand	3	3	0	**Peru**	32	23	9
Canada	4	4	0	**Jordan**	33	76	-43
Australia	5	5	0	**Belgium**	34	24	10
Switzerland	6	6	0	**El Salvador**	35	43	-8
United Kingdom	7	7	0	**Panama**	36	25	11
Mauritius	8	8	0	**Jamaica**	37	54	-17
Chile	9	35	-26	**Bulgaria**	38	26	12
Finland	10	9	1	**Spain**	39	27	12
Denmark	11	10	1	**Hungary**	40	28	12
Estonia	12	11	1	**Korea, Republic**	41	29	12
United States	13	12	1	**Portugal**	42	30	12
Zambia	14	81	-67	**Romania**	43	32	11
Oman	15	60	-45	**Guatemala**	44	46	-2
Ireland	16	13	3	**Israel**	45	33	12
Netherlands	17	14	3	**Poland**	46	34	12
Austria	18	15	3	**Latvia**	47	36	11
Bahrain	19	57	-38	**Czech Republic**	48	37	11
Germany	20	16	4	**Croatia**	49	38	11
Taiwan	21	31	-10	**Trinidad and Tobago**	50	49	1
Sweden	22	17	5	**Uruguay**	51	39	12
United Arab Emirates	23	52	-29	**Slovenia**	52	40	12
Uganda	24	83	-59	**Iceland**	53	41	12
Japan	25	18	7	**Lithuania**	54	42	12
Costa Rica	26	19	7	**Ghana**	55	77	-22
Slovak Republic	27	20	7	**Botswana**	56	78	-22
Kuwait	28	45	-17	**Haiti**	57	68	-11
France	29	21	8	**Honduras**	58	44	14

Table 2.5 - Continued

Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank	Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank
Kenya	59	86	-27	**Madagascar**	88	73	15
Rwanda	60	87	-27	**Mali**	89	89	0
Dominican Republic	61	65	-4	**China**	90	66	24
Greece	62	47	15	**Sri Lanka**	91	85	6
Philippines	63	58	5	**Cameroon**	92	104	-12
Indonesia	64	67	-3	**Cote d'Ivoire**	93	93	0
Nicaragua	65	59	6	**Malawi**	94	100	-6
Malaysia	66	69	-3	**Argentina**	95	72	23
Italy	67	50	17	**Pakistan**	96	99	-3
Thailand	68	51	17	**Nigeria**	97	101	-4
Egypt, Arab Republic	69	61	8	**Ukraine**	98	74	24
Sierra Leone	70	102	-32	**Ecuador**	99	80	19
South Africa	71	92	-21	**Senegal**	100	94	6
Mexico	72	53	19	**Central African Republic**	101	98	3
Namibia	73	84	-11	**Togo**	102	110	-8
Papua New Guinea	74	79	-5	**Benin**	103	103	0
Turkey	75	55	20	**Nepal**	104	105	-1
Bangladesh	76	90	-14	**Gabon**	105	111	-6
Paraguay	77	56	21	**Niger**	106	96	10
India	78	91	-13	**Guinea-Bissau**	107	115	-8
Iran, Islamic Republic	79	95	-16	**Chad**	108	114	-6
Fiji	80	75	5	**Syrian Arab Republic**	109	97	12
Morocco	81	82	-1	**Burundi**	110	107	3
Bolivia	82	62	20	**Congo, Republic**	111	109	2
Brazil	83	63	20	**Congo, Democratic Republic**	112	112	0
Colombia	84	70	14	**Algeria**	113	106	7
Tunisia	85	71	14	**Zimbabwe**	114	116	-2
Russian Federation	86	64	22	**Venezuela, RB**	115	108	7
Tanzania	87	88	-1	**Myanmar**	116	113	3

Table 2.6: Descriptive Statistics for Subcomponents of the Gender Disparity in Economic Rights Index, 2012

Variable Name	Observations	Mean	Standard Deviation	Minimum	Maximum
Inheritance Daughters	116	0.7155	0.3801	0	1
Inheritance Widows	116	0.7069	0.3675	0	1
Inheritance	116	0.7112	0.3590	0	1
Access to Land	116	0.7155	0.3108	0	1
Access to Credit	116	0.7543	0.2836	0	1
Access to Property other than Land	116	0.7888	0.3103	0	1
Freedom of Movement	116	0.7414	0.3580	0	1
Gender Disparity Index	116	0.7422	0.2588	0.1	1

Table 2.7 provides the correlation matrix for the subcomponents and summary score for the 2012 Gender Disparity in Economic Rights Index. Correlations among the index subcomponents range from a low of 0.3544 to a high of 0.7013. This range is similar to the 2009 data. Note, the 2012 OECD data separates the inheritance data into two categories, "Inheritance Daughters" and "Inheritance Widows." These two figures are averaged together to obtain the "Inheritance" figure seen in the table. This is done to maintain greater consistency with the 2009 data.

Next, the Gender Disparity in Economic Rights Index is used to adjust the EFW scores for 2012. As with the 2009 data, equation 2.1 provides the method to calculate a women's economic freedom index, and equation 2.2 depicts the process to adjust the overall EFW index for 2012.

(2.1) *Women's EFW Score = EFW Score * Gender Disparity in Economic Rights Index Score*

(2.2) *Adjusted EFW Score = (Male Percentage of the Population * EFW Score) + (Female Percentage of the Population * EFW Score * Gender Disparity in Economic Rights Index Score)*

Table 2.8 provides the results of adjusting the 2012 EFW scores using the 2012 Gender Disparity in Economic Rights Index. The first column lists the country names and the second column shows the GDERI scores. The third column provides the unadjusted EFW scores for 2012, which also accurately measures the men's access to economic rights. Column four provides the

women's EFW score, while column five provides the overall adjusted EFW score. The sixth column provides the absolute change in the EFW score. Finally, column seven shows the percentage change in the EFW score resulting from the adjustment. Again, to better understand the results of the adjustment, one must consider both the absolute and percentage change presented in columns six and seven, The data in Table 2.8 is sorted from the highest unadjusted EFW score to the lowest.

Table 2.7: Correlation Coefficients for Subcomponents of the Gender Disparity in Economic Rights Index, 2012

	Inheritance Daughters	Inheritance Widows	Inheritance	Access to Land	Access to Credit	Access to Property other than Land	Freedom of Movement	Gender Disparity Index
Inheritance Daughters	1.0000							
Inheritance Widows	0.8452	1.0000						
Inheritance	0.9619	0.9592	1.0000					
Access to Land	0.4867	0.5577	0.5430	1.0000				
Access to Credit	0.3544	0.4502	0.4180	0.6799	1.0000			
Access to Property other than Land	0.4999	0.6152	0.5794	0.7013	0.6165	1.0000		
Freedom of Movement	0.6368	0.6745	0.6823	0.3684	0.3965	0.4824	1.0000	
Gender Disparity Index	0.7575	0.8329	0.8272	0.8100	0.7558	0.8374	0.7571	1.0000

Forty-six countries received a Gender Disparity in Economic Rights Index score equal to "1" in 2012, equal to "1" such that there is no difference between the adjusted and unadjusted EFW scores. Once again, these countries are largely OECD member countries and other well-developed nations. Russian and Venezuela are two of the more notable exceptions included in this group. Myanmar is no longer among the list of countries with no additional barriers facing women. In 2012, Myanmar experiences an 18% downward adjustment to its EFW scores once taking gender disparities into account.

Decreases in EFW scores of greater than 30% occurred in countries like Uganda (45%); Congo, Democratic Republic (40%); Nigeria (37%); Iran, Islamic Republic (32%); Egypt, Arab

Republic and Sierra Leone (30%); and several others. As in 2009, these countries are largely located in the Middle East and Africa. Benin, Iran, Niger, Nigeria, and Tanzania. Guinea-Bissau, Zambia, and Zimbabwe experienced downward adjustments to the EFW scores of a lesser degree than in 2009, but are now among those countries with the largest adjustments.

Countries with downward adjustments to EFW scores between 20 and 29 percent include Congo, Republic (28%); Oman (27%); Rwanda and Sri Lanka (26%), Bangladesh, Botswana, and Ghana (25%); Jordan and the United Arab Emirates (24%); Zambia (23%); Albania (22%); Namibia (21%); Central African Republic, Malawi, and Zimbabwe (20%). These countries are largely located in the Middle East and Africa. As in 2009, several of the countries located outside of these regions are countries with sizeable Muslim populations (Albania and Bangladesh for example). These places would have some similar norms and legal institutions regarding women's access to economic rights.

Decreases in EWF scores between 5 and 19 percent occurred in China and India (19%); Algeria, Bolivia, Indonesia, Jamaica, Madagascar, Morocco, Nepal, Nicaragua, and South Africa (all with 15%); Bahrain (11%); El Salvador, Guatemala, Malaysia, Philippines, and Thailand (10%); Chile, Peru, and Singapore (5 %); and many other countries. The vast majority of the countries in this category are located in Asia and Latin America, but a few are located in the Middle East and Africa.

The changes to a country's 2012 EFW ranking as a result of adjusting for gender disparity in economic rights are depicted in Table 2.9. The largest decreases in relative position can be seen in Uganda (-69), Oman (-51), Jordan (-51), United Arab Emirates (-48), All of the countries falling by 20 positions or more are located in Africa or the Middle East, with the exception of Albania. Moderate decreases in relative position occurred in Egypt (-15); Nigeria and El Salvador (-14); Cameroon and Peru (-13); Ghana (-11); Chile (-10) among others. While countries such as Honduras (-8); Bangladesh (-6); Singapore (-5); Mali and Pakistan (-3); India, Nicaragua, and Indonesia (-2); and a few others decreased only slightly in rank.

The general pattern to the way the EFW rankings change after accounting for gender disparity is similar in 2009 and 2012. In both years, countries like Bahrain, Botswana, Jordan, Oman, Rwanda, Sierra Leone, Uganda, the United Arab Emirates, and Zambia fall in rank by 20 positions or more after the adjustments. Countries that were ranked towards the bottom prior to the adjustments tend to move very few positions and remain towards the bottom of the rankings.

Table 2.8: Index of Gender Disparity in Economic Rights and Adjustments to EFW Scores, 2012

Country	Gender Disparity in Formal Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Hong Kong, China	1.00	8.88	8.88	8.88	0.00	0.00
Singapore	0.90	8.41	7.57	7.98	-0.43	-0.05
New Zealand	1.00	8.27	8.27	8.27	0.00	0.00
Canada	1.00	8.11	8.11	8.11	0.00	0.00
Mauritius	1.00	8.07	8.07	8.07	0.00	0.00
Australia	1.00	8.03	8.03	8.03	0.00	0.00
Switzerland	1.00	8.03	8.03	8.03	0.00	0.00
Ireland	1.00	7.96	7.96	7.96	0.00	0.00
United Kingdom	1.00	7.92	7.92	7.92	0.00	0.00
Chile	0.90	7.87	7.08	7.47	-0.40	-0.05
Finland	1.00	7.85	7.85	7.85	0.00	0.00
Jordan	0.50	7.84	3.92	5.92	-1.92	-0.24
United Arab Emirates	0.20	7.82	1.56	5.97	-1.85	-0.24
United States	1.00	7.81	7.81	7.81	0.00	0.00
Taiwan	1.00	7.79	7.79	7.79	0.00	0.00
Denmark	1.00	7.71	7.71	7.71	0.00	0.00
Costa Rica	0.90	7.70	6.93	7.32	-0.38	-0.05
Netherlands	1.00	7.63	7.63	7.63	0.00	0.00
Oman	0.30	7.63	2.29	5.60	-2.03	-0.27
Estonia	1.00	7.62	7.62	7.62	0.00	0.00
Zambia	0.55	7.59	4.17	5.88	-1.71	-0.23
Japan	1.00	7.58	7.58	7.58	0.00	0.00
Germany	1.00	7.57	7.57	7.57	0.00	0.00
Sweden	1.00	7.56	7.56	7.56	0.00	0.00
Peru	0.90	7.54	6.79	7.16	-0.38	-0.05
Bahrain	0.70	7.53	5.27	6.68	-0.85	-0.11
Norway	1.00	7.49	7.49	7.49	0.00	0.00
Rwanda	0.50	7.49	3.75	5.57	-1.92	-0.26
Austria	1.00	7.46	7.46	7.46	0.00	0.00

Table 2.8 - Continued

Country	Gender Disparity in Formal Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Botswana	0.50	7.46	3.73	5.60	-1.86	-0.25
Portugal	1.00	7.46	7.46	7.46	0.00	0.00
Uganda	0.10	7.45	0.75	4.11	-3.34	-0.45
Romania	1.00	7.41	7.41	7.41	0.00	0.00
Belgium	1.00	7.40	7.40	7.40	0.00	0.00
El Salvador	0.80	7.40	5.92	6.62	-0.78	-0.11
Iceland	1.00	7.40	7.40	7.40	0.00	0.00
Slovak Republic	1.00	7.35	7.35	7.35	0.00	0.00
Kuwait	0.65	7.34	4.77	6.31	-1.03	-0.14
Albania	0.55	7.33	4.03	5.69	-1.64	-0.22
Croatia	1.00	7.32	7.32	7.32	0.00	0.00
Hungary	1.00	7.32	7.32	7.32	0.00	0.00
Czech Republic	1.00	7.30	7.30	7.30	0.00	0.00
Uruguay	0.90	7.30	6.57	6.92	-0.38	-0.05
Bulgaria	1.00	7.29	7.29	7.29	0.00	0.00
Jamaica	0.70	7.29	5.10	6.18	-1.11	-0.15
Poland	1.00	7.28	7.28	7.28	0.00	0.00
France	1.00	7.27	7.27	7.27	0.00	0.00
Korea, Republic	1.00	7.27	7.27	7.27	0.00	0.00
Israel	1.00	7.26	7.26	7.26	0.00	0.00
Spain	1.00	7.26	7.26	7.26	0.00	0.00
Guatemala	0.80	7.24	5.79	6.50	-0.74	-0.10
Latvia	1.00	7.24	7.24	7.24	0.00	0.00
Philippines	0.80	7.22	5.78	6.50	-0.72	-0.10
Panama	1.00	7.15	7.15	7.15	0.00	0.00
Sierra Leone	0.40	7.15	2.86	4.99	-2.16	-0.30
Lithuania	1.00	7.14	7.14	7.14	0.00	0.00
Nicaragua	0.70	7.08	4.96	6.01	-1.07	-0.15
Indonesia	0.70	7.03	4.92	5.98	-1.05	-0.15

Table 2.8 - Continued

Country	Gender Disparity in Formal Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Honduras	0.65	7.02	4.56	5.79	-1.23	-0.17
Kenya	0.50	7.02	3.51	5.26	-1.76	-0.25
Dominican Republic	0.70	7.01	4.91	5.96	-1.05	-0.15
Malaysia	0.80	6.99	5.59	6.27	-0.72	-0.10
Haiti	0.75	6.97	5.23	6.09	-0.88	-0.13
Trinidad and Tobago	1.00	6.90	6.90	6.90	0.00	0.00
Iran, Islamic Republic	0.35	6.88	2.41	4.66	-2.22	-0.32
Italy	1.00	6.88	6.88	6.88	0.00	0.00
South Africa	0.70	6.86	4.80	5.80	-1.06	-0.15
Greece	1.00	6.80	6.80	6.80	0.00	0.00
Ghana	0.50	6.77	3.39	5.06	-1.71	-0.25
Mexico	1.00	6.74	6.74	6.74	0.00	0.00
Paraguay	0.90	6.71	6.04	6.38	-0.33	-0.05
Papua New Guinea	0.40	6.67	2.67	4.71	-1.96	-0.29
Brazil	0.65	6.66	4.33	5.48	-1.18	-0.18
Turkey	1.00	6.66	6.66	6.66	0.00	0.00
India	0.60	6.65	3.99	5.37	-1.28	-0.19
Madagascar	0.70	6.60	4.62	5.61	-0.99	-0.15
Thailand	0.80	6.58	5.26	5.91	-0.67	-0.10
Slovenia	1.00	6.56	6.56	6.56	0.00	0.00
Egypt, Arab Republic	0.40	6.55	2.62	4.59	-1.96	-0.30
Bolivia	0.70	6.48	4.54	5.51	-0.97	-0.15
Tanzania	0.40	6.47	2.59	4.53	-1.94	-0.30
Russian Federation	1.00	6.45	6.45	6.45	0.00	0.00
Bangladesh	0.50	6.42	3.21	4.84	-1.58	-0.25
Sri Lanka	0.50	6.41	3.21	4.77	-1.64	-0.26
Colombia	0.60	6.40	3.84	5.10	-1.30	-0.20
Morocco	0.70	6.40	4.48	5.43	-0.97	-0.15
Fiji	0.70	6.38	4.47	5.44	-0.94	-0.15

Table 2.8 - Continued

Country	Gender Disparity in Formal Economic Rights Summary Score	Unadjusted/Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Namibia	0.60	6.37	3.82	5.06	-1.31	-0.21
Cameroon	0.30	6.29	1.89	4.09	-2.20	-0.35
China	0.60	6.20	3.72	5.00	-1.20	-0.19
Ukraine	1.00	6.20	6.20	6.20	0.00	0.00
Guinea-Bissau	0.65	6.14	3.99	5.06	-1.08	-0.18
Nigeria	0.25	6.13	1.53	3.87	-2.26	-0.37
Tunisia	0.60	6.09	3.65	4.86	-1.23	-0.20
Mali	0.50	6.05	3.03	4.55	-1.50	-0.25
Cote d'Ivoire	0.50	6.03	3.02	4.55	-1.48	-0.24
Pakistan	0.50	5.95	2.98	4.50	-1.45	-0.24
Nepal	0.70	5.94	4.16	5.02	-0.92	-0.15
Ecuador	0.70	5.91	4.14	5.02	-0.89	-0.15
Niger	0.30	5.89	1.77	3.84	-2.05	-0.35
Togo	0.40	5.83	2.33	4.06	-1.77	-0.30
Central African Republic	0.60	5.81	3.49	4.63	-1.18	-0.20
Senegal	0.60	5.75	3.45	4.58	-1.17	-0.20
Malawi	0.60	5.73	3.44	4.59	-1.14	-0.20
Chad	0.40	5.70	2.28	3.99	-1.71	-0.30
Gabon	0.30	5.58	1.67	3.64	-1.94	-0.35
Benin	0.15	5.52	0.83	3.17	-2.35	-0.43
Syrian Arab Republic	0.50	5.21	2.61	3.93	-1.28	-0.25
Burundi	0.30	5.18	1.55	3.34	-1.84	-0.35
Congo, Democratic Republic	0.20	5.09	1.02	3.04	-2.05	-0.40
Argentina	1.00	4.90	4.90	4.90	0.00	0.00
Zimbabwe	0.60	4.82	2.89	3.84	-0.98	-0.20
Myanmar	0.65	4.78	3.11	3.92	-0.86	-0.18
Congo, Republic	0.45	4.77	2.15	3.46	-1.31	-0.28
Algeria	0.70	4.47	3.13	3.81	-0.66	-0.15
Venezuela, RB	1.00	3.71	3.71	3.71	0.00	0.00

This applies to countries like Chad, the Republic of Congo, Togo, Venezuela, and Zimbabwe. In both years, these countries are exclusively located in the Middle East and Africa.

Overall, 56 countries exhibited no change in their GDERI summary score between 2009 and 2012. These countries are mostly high-income industrial countries. Forty-seven countries experienced a negative change in their score between 2009 and 2012. That is, there was an increase in the barriers women face in these 47 nations. These countries include Brazil, Burundi, China, Colombia, Egypt, El Salvador, Ghana, Guatemala, Honduras, Indonesia, Iran, Nicaragua, Nigeria, Oman, Peru, Philippines, Senegal, Singapore, Sri Lanka, Syrian Arab Republic, Thailand, Uganda, United Arab Emirates, among others.

Egypt, for example, had a score of 0.9 in 2009. However, by 2012, this score dropped to 0.4. There was no change in the barriers Egyptian women face in two out of five categories, but increases in the barriers in "Freedom of Movement/Access to Public Space," "Inheritance," and "Access to Property Other than Land." China experienced a decline of 0.5 points for four out of the five index categories, and saw no change in the "Freedom of Movement" category. This accounts for the drop in China's GDERI score from 1.00 in 2009 to 0.60 in 2012. The 2012 GDERI score for the United Arab Emirates is 0.20, significantly less than the score of 0.60 in 2009. The UAE's subcomponent scores decreased by 0.5 points in all categories except "Access to Land," which remained unchanged.

Thirteen countries reduced the additional legal barriers faced by women and received an increase in their GDERI score between 2009 and 2012. Bahrain, Chad, Chile, India, Malawi, Taiwan, Trinidad and Tobago, and Sierra Leone increased their scores by 0.1 points. Zambia increased by 0.15 points while Nepal, South Africa, and Zimbabwe increased by 0.2 points. Guinea-Bissau increased by 0.4 points, which was the largest increase during this period.

Chile experienced a decline in the "Freedom of Movement/Access to Public Space" category, while also achieving an increase in the "Access to Land" and "Access to Property Other than Land." Bahrain, on the other hand, experienced significant increases in women's "Access to Land" and "Access to Property Other than Land." However, there was a decline in the security of women's inheritance during the same period. In 2009, Bahrain adopted the country's first personal status laws to govern family issues such as inheritance, divorce, and child custody. While women have the right to inherit property, in general, females will inherit smaller

Table 2.9: Change in EFW Rankings as a Result of the Adjustment for Gender Disparity in Economic Rights, 2012

Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank	Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank
Hong Kong, China	1	1	0	**Botswana**	30	71	-41
Singapore	2	7	-5	**Portugal**	31	22	9
New Zealand	3	2	1	**Uganda**	32	101	-69
Canada	4	3	1	**Romania**	33	23	10
Mauritius	5	4	1	**Belgium**	34	24	10
Australia	6	5	1	**El Salvador**	35	48	-13
Switzerland	7	6	1	**Iceland**	36	25	11
Ireland	8	8	0	**Slovak Republic**	37	26	11
United Kingdom	9	9	0	**Kuwait**	38	54	-16
Chile	10	20	-10	**Albania**	39	68	-29
Finland	11	10	1	**Croatia**	40	28	12
Jordan	12	63	-51	**Hungary**	41	29	12
United Arab Emirates	13	61	-48	**Czech Republic**	42	30	12
United States	14	11	3	**Uruguay**	43	41	2
Taiwan	15	12	3	**Bulgaria**	44	31	13
Denmark	16	13	3	**Jamaica**	45	57	-12
Costa Rica	17	27	-10	**Poland**	46	32	14
Netherlands	18	14	4	**France**	47	33	14
Oman	19	70	-51	**Korea, Republic**	48	34	14
Estonia	20	15	5	**Israel**	49	35	14
Zambia	21	65	-44	**Spain**	50	36	14
Japan	22	16	6	**Guatemala**	51	51	0
Germany	23	17	6	**Latvia**	52	37	15
Sweden	24	18	6	**Philippines**	53	50	3
Peru	25	38	-13	**Panama**	54	39	15
Bahrain	26	46	-20	**Sierra Leone**	55	86	-31
Norway	27	19	8	**Lithuania**	56	40	16
Rwanda	28	72	-44	**Nicaragua**	57	59	-2
Austria	29	21	8	**Indonesia**	58	60	-2

Table 2.9 - Continued

Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank	Country	Unadjusted EFW Rank	Adjusted EFW Rank	Change in Rank
Honduras	59	67	-8	**Namibia**	88	82	6
Kenya	60	78	-18	**Cameroon**	89	102	-13
Dominican Republic	61	62	-1	**China**	90	85	5
Malaysia	62	55	7	**Ukraine**	91	56	35
Haiti	63	58	5	**Guinea-Bissau**	92	81	11
Trinidad and Tobago	64	42	22	**Nigeria**	93	107	-14
Iran, Islamic Republic	65	92	-27	**Tunisia**	94	88	6
Italy	66	43	23	**Mali**	95	98	-3
South Africa	67	66	1	**Cote d'Ivoire**	96	97	-1
Greece	68	44	24	**Pakistan**	97	100	-3
Ghana	69	80	-11	**Nepal**	98	84	14
Mexico	70	45	25	**Ecuador**	99	83	16
Paraguay	71	53	18	**Niger**	100	108	-8
Papua New Guinea	72	91	-19	**Togo**	101	103	-2
Brazil	73	74	-1	**Central African Republic**	102	93	9
Turkey	74	47	27	**Senegal**	103	96	7
India	75	77	-2	**Malawi**	104	95	9
Madagascar	76	69	7	**Chad**	105	104	1
Thailand	77	64	13	**Gabon**	106	112	-6
Slovenia	78	49	29	**Benin**	107	115	-8
Egypt, Arab Republic	79	94	-15	**Syrian Arab Republic**	108	105	3
Bolivia	80	73	7	**Burundi**	109	114	-5
Tanzania	81	99	-18	**Congo, Democratic Republic**	110	116	-6
Russian Federation	82	52	30	**Argentina**	111	87	24
Bangladesh	83	89	-6	**Zimbabwe**	112	109	3
Sri Lanka	84	90	-6	**Myanmar**	113	106	7
Colombia	85	79	6	**Congo, Republic**	114	113	1
Morocco	86	76	10	**Algeria**	115	110	5
Fiji	87	75	12	**Venezuela, RB**	116	111	5

amounts than males. For example, a daughter has the right to an inheritance that is half the size of her brother's. A woman has the right to inherit if she is a Shia and does not have any brothers. If, however, a Sunni has only daughters, the daughters will not receive anything of the deceased father, and the inheritance will be given to a male relative of deceased.[21] The 2009 GDERI score would not have reflected this legislation.

Nine fewer countries had GDERI scores equal to "1" in 2012 (46) than in 2009 (55). Eleven countries with a score of "1" in 2009 received a lower score in 2012, removing them from this group. While both Taiwan and Trinidad and Tobago reduced gender-based barriers such that the GDERI scores increased to "1" between 2009 and 2012.

While the differences between 2009 and 2012 GDERI scores are interesting, they must be interpreted with caution. The OECD revised the definitions of some of the subcomponent variables ("Freedom of Movement" in particular) between the release of the 2009 and 2012 editions of the Gender, Institutions, and Development Database. It is unclear whether these differences are due to actual changes in the barriers that women face in these countries, refinements in the way the OECD measures the variables, or a combination of both factors.

2.3 Using World Values Survey Questions to Create the Index of Social Norms towards Women's Role in Society

Social norms are often just as constraining on an individual's behavior as formal rules and regulations. As such, the next index is created to measure the informal norms and cultural attitudes that prevail in a particular country regarding the proper social and economic role for women. This index is derived using data from the World Values Survey (WVS) in a manner similar to the measure of "individual attitudes towards women in society" (Alesina et al. 2013, 502). They build a composite measure using two questions from the WVS: "When jobs are scarce, men should have more right to a job than women," and "On the whole, men make better political leaders than women do." The responses to these two questions reflect the individual's views about whether there should be gender equality in access to job opportunities as well as their views about women's suitability in leadership roles.

While the two measures Alesina et al. (2013) use in their study are reflective of social norms towards women's economic roles, there are other questions in the World Values Survey

[21] Bahrain Center for Human Rights (2014) report, "Family Law in Bahrain."

that add insight about an individual's attitude towards women's role in society. Specifically, an individual's views about the statement "University is more important for a boy than for a girl," provides important information about social norms regarding women's role in the formal economy. If prevailing social norms relegate the role of women to childcare and other forms of household production, university would be largely unnecessary. If, however, society embraces a woman's right to choose her own role for herself, university may play an instrumental part in determining one's path. Thus, the inclusion of this third question is one way in which the norms-based measure developed in this chapter differs from what is constructed in Alesina et al. (2013).

Another way in which this measure differs from the Alesina measures is that this measure allows for differences in intensity of preferences by assigning distinct values for each response category "Agree Strongly," "Agree," "Disagree," and "Strongly Disagree." Alesina et al, however, create dummy variables out of the data by treating responses of "Agree" the same as "Agree Strongly," and "Disagree" the same as "Disagree Strongly."

Here, individual responses for each question are coded as either "0," "1/3," "2/3," or "1" such that higher values indicate greater gender equality. This creates a measure that is consistent with the EFW index scale. An average is taken across all three questions to arrive at the individual's score for the norms-based index. Once the individual-level norms index is created, country average scores are calculated for each subcomponent as well as for the overall norms index. The country averages are discussed exclusively in this chapter. Analysis of both the country averages as well as the individual-level data is completed in chapter three. Table 2.10 provides a list of the WVS questions used to create the Index of Social Norms towards Women's Role in Society, and describes how the survey responses are coded.

This index captures some of the social norms and attitudes towards women's role in society relative to men's. All questions listed in Table 2.10 are included in the index because of their perceived correlation with an individual's attitudes towards women. Questions C001 and D059 are the same questions included in Alesina et al. (2013), while question D060's inclusion is unique to this study.

The relationship of individual responses to these questions the prevailing social norms towards women's role in society has briefly been discussed. In general, each of these questions capture an individual's viewpoint regarding women's appropriate social position. An individual that agrees with the statement in question C001 is expressing the opinion that men should take

priority over women when it comes to being employed outside of the home. A response of strong agreement to question D059 expresses the opinion that women make inferior leaders, so men should be responsible for political decision-making. Similarly, an individual who strongly agrees with the statement in question D060 believes that university is less necessary for women. If higher levels of human capital are less necessary for women to develop than they are for men, this may be indicative that there are either not enough opportunities for women to use those types of skills in the market or that social norms discourage them from doing so.

Table 2.10: List of the WVS Measures and Their Definitions

Question Code	Question	Possible Responses[22]				
C001	In times when jobs are scarce, men should have more right to a job than women.	Agree=0	Disagree=1	Neither= Dropped		
D059	On the whole, men make better political leaders than women do.	Agree Strongly =0	Agree = 1/3	Disagree = 2/3	Strongly Disagree=1	Don't Know = Dropped
D060	University is more important for a boy than for a girl.	Agree Strongly =0	Agree = 1/3	Disagree = 2/3	Strongly Disagree=1	Don't Know = Dropped

After recoding the individual responses and calculating country-level averages, the index of gender-disparity in informal economic rights is used to adjust the economic freedom measure. Equation (2.3) demonstrates the process used to create a women's EFW score while equation (2.4) provides the method used to adjust a country's overall EFW score to account for social norms towards women's role in society.

[22] The original answers to each of these questions are recoded to be on a scale that is more consistent with the EFW index. The possible responses listed in the table above reflect the recoded scores, not the original WVS scores. The original coding went as follows: C001 (Agree =1, Disagree =2, Neither =3); D059 (Agree Strongly =1, Agree =2, Disagree =3, Strongly Disagree =4); D060 (Agree Strongly =1, Agree =2, Disagree =3, Strongly Disagree =4).

(2.3) *Women's EFW Score = EFW Score * Index of Social Norms towards Women's Role in Society Score*

(2.4) *Adjusted EFW Score = (Male Percentage of the Population * EFW Score) + (Female Percentage of the Population * EFW Score * Index of Social Norms towards Women's Role in Society Score)*

Unlike the OECD data, which is available for both 2009 and 2012, the WVS is conducted in waves, which are staggered. Not every country is surveyed in every year, and most countries have gaps of five years or more between surveys. For this reason, only one version of the Index of Social Norms towards Women's Role in Society can be calculated. This index uses the WVS data for the most recent year available for each country in the sample. Because social norms and culture tend to be the type of institutional arrangements that are slow to change, the EFW data for 2009 and 2012 can still be adapted using the same norms index without major concern.

Table 2.11 provides the descriptive statistics for the country-level Index of Social Norms towards Women's Role in Society and it's subcomponents. The mean for each component ranges from 0.5151 to 0.6836 and standard deviations range from 0.1023 to 0.1972. The lowest Norms Index summary score was 0.2509 (Egypt 2008) while the highest summary score is 0.8962 (Norway 2008). Most of the countries with an index score of less than 0.50 are located in the Middle East or Africa, and have sizeable Muslim populations. Countries with scores of 0.70 or higher are generally higher income, OECD-member countries like United States (2006), Australia (2005), and Canada (2006). Specifically, the three countries highest norms index scores are France and Sweden (2006), and Norway (2008). Table A.3 presents the full set of WVS data for each of the subcomponents in the norms index, as well as the summary index scores.

Table 2.11: Descriptive Statistics for Index of Social Norms towards Women's Role in Society

Variable Name	Observations	Mean	Standard Deviation	Minimum	Maximum
C001	69	0.5680	0.1972	0.0833	0.9604
D059	69	0.5151	0.1392	0.1251	0.8165
D060	69	0.6836	0.1023	0.3977	0.9402
Norms Index	69	0.5889	0.1353	0.2616	0.8891

Table 2.12 depicts the correlation matrix for the Index of Social Norms toward Women's Role in Society. These coefficients are fairly high with the lowest value at 0.6792 and the highest value at 0.9496. This suggests that there are underlying commonalities among these subcomponents.[23]

Table 2.12: Correlation Matrix for Index of Social Norms towards Women's Role in Society

	C001	D059	D060	Norms Index
C001	1.0000			
D059	0.8515	1.0000		
D060	0.6792	0.7646	1.0000	
Norms Index	0.9493	0.9496	0.8445	1.0000

The changes to the 2009 EFW scores after accounting for social norms towards women's role in society are presented in Table 2.13. Some general patterns are immediately apparent. First, since no country has a norms index score of "1," there is a downward adjustment to each and every EFW score in the dataset. Second, as with the GDERI, countries in the Middle East and Africa tend to have lower scores than other countries. Finally, a surprising result is that many Asian countries with high levels of unadjusted EFW scores have fairly low norms index scores. For example, Japan, Hong Kong, South Korea, Singapore, and Taiwan have norms scores of 0.60 or less. These scores are considerably lower than most other countries with high unadjusted EFW scores.

The 2009 EFW scores for several countries decrease by 30% or more after adjusting for gender norms. As in the case of the GDERI-adjusted EFW scores, the countries with the largest decreases are located in the Middle East and Africa, and have large Muslim populations. These countries include, Egypt (37%); Jordan and Mali (33%), Bangladesh and Iran (32%); Malaysia and Nigeria (31%); and the Philippines (30%). Slightly less extreme decreases in EFW scores occurred in Algeria (29%); India (28%); Morocco, Pakistan, and Russian Federation (26%); and Indonesia and Latvia (25%). The following countries experienced reductions in EFW scores of

[23] A robustness check that performs factor analysis on this data further suggests that there are enough commonalities between these variables to combine into one index. The results of factor analysis are not included in this paper, but are available upon request.

between 20 and 24%: Japan, China, Columbia, Korea, Republic, and Thailand, Singapore, Taiwan, and Uganda, Chile, Hong Kong, China, Rwanda, and South Africa, and several others. A diverse mixture of Middle Eastern, African, Asian, and Eastern European nations appear in this category.

The countries exhibiting the lowest percentage decreases in EFW scores after adjusting for gender norms include Mexico and Tanzania (18%); Guatemala and Italy (16%); Australia, United States, and the United Kingdom (14%); Germany and Switzerland (13%); Canada (12%); Sweden (7%); along with several others. These countries are mostly OECD member countries located in Western Europe, and the Americas.

The changes to the 2012 EFW scores after accounting for social norms towards women's role in society are presented in Table 2.14. Because the same norms index is used to adjust the 2009 and the 2012 EFW scores, the results of the adjustments are nearly identical. Few differences exist between the percentage change to scores after the social norms adjustment in 2009 and in 2012. For example, Hong Kong's 2009 score decreased by 21%, but in 2012 the adjustment for social norms lowered the EFW score by 22%. For the most part, however, the changes to EFW scores are identical for both years

Changes to the 2009 EFW rankings after adjusting for social norms towards women's role in society are depicted in Table 2.15. Only 69 countries appear in this table because both WVS and EFW data are required for the calculation. Jordan experiences the largest decline in rank, falling by 27 positions. Estonia (-19); Slovak Republic (-18); Japan and Malaysia (-11); and Chile (-10) each dropped by 10 positions or more. Several other countries dropped between one and nine positions in rank. These countries are spread across diverse parts of the world and include nations such as Iran, Philippines, Taiwan, and Singapore (-9); Uganda (-8); Albania and Ghana (-6); El Salvador and India (-5); Mali (-4); Australia, Hong Kong, the United Kingdom, and the United States (-2); and Nigeria (-1). After adjustment for gender disparity, the top five ranked countries were: New Zealand, Canada, Hong Kong, Switzerland, and Norway.

Table 2.16 depicts the change to the 2012 EFW rankings after adjusting for social norms towards women's role in society. These changes are similar to the parallel changes in 2009. Jordan falls by 38 positions in 2012's rankings while it only fell by 26 positions in 2009. Nearly the same set of countries dropped by 10 positions or more in 2012 and 2009. Estonia (-21);

Slovak Republic (-19); Japan (-15); Malaysia and the Philippines (-11); and El Salvador and Singapore (-10) fall into this category in 2012.

The list of countries dropping between one and nine positions in the 2012 rankings include Chile, Taiwan, Uganda, Bangladesh, Hong Kong, India, Australia, Egypt, Iran, and the United Kingdom. This set of countries is similar to the list in this category in 2009. Because the same norms index is used to adjust both the 2009 and 2012 EFW indexes, it is not surprising that the adjustment similar in both years. Only countries that experienced sizeable changes in the unadjusted EFW scores between 2009 and 2012 with have different results for the adjusted EFW scores for both years.

An additional robustness check was performed for both of the indexes constructed in this chapter. Confirmatory factor analysis was conducted to determine whether the individual subcomponents of each index statistically have enough in common with each other to justify being averaged together in an index.[24] The results of this robustness check are not presented in this study, but they provide evidence that there is one underlying factor common to the subcomponents of each index, and that most of the variation in the subcomponents is explained by that underlying factor. Following the Kaiser rule, the eigenvalues for the components of each index indicate that there is one major factor in common. Additionally, graphs of the scree plot for each index depict a sharp contrast between the explanatory power of the first component and other potential factors. Factors beyond the second factor are never retained, as their marginal explanatory power generally appears as negative. Thus, these results give confidence that the subcomponents for each index are related enough to combine into a single index. Future research might employ factor analysis to develop different weighting schemes for each index instead of the equal weighting employed here.

2.4 Comparing the Gender Disparity in Economic Rights Index with the Index of Social Norms towards Women's Role in Society

The GDERI and the social norms index measure the presence of two very different sets of barriers to women exercising economic rights. The GDERI measures whether there are additional legal barriers to owning property, and engaging in commerce that apply to women, but

[24] Factor analysis was used in lieu of principal component analysis because the data under examination is more categorical in nature. Principal component analysis is suited for continuous data, while factor analysis can be used on data that is discrete.

Table 2.13: Index of Norms towards Women's Role in Society and Adjustments to EFW Scores, 2009

Country	WVS Year	Norms Index	Unadjusted/ Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Hong Kong	2005	0.6151	9	5.5356	7.1618	-1.8382	-0.2042
Singapore	2002	0.5751	8.6	4.946	6.7504	-1.8496	-0.2151
New Zealand	2004	0.7801	8.36	6.5218	7.424	-0.936	-0.112
Canada	2006	0.7804	8.14	6.3526	7.239	-0.901	-0.1107
Australia	2005	0.7462	8.1	6.0445	7.0673	-1.0327	-0.1275
Switzerland	2007	0.764	8.05	6.1505	7.0849	-0.9651	-0.1199
United Kingdom	2006	0.7349	7.95	5.8422	6.878	-1.072	-0.1348
Chile	2005	0.6004	7.92	4.7551	6.3208	-1.5992	-0.2019
Finland	2005	0.7754	7.79	6.0403	6.9335	-0.8565	-0.1099
Estonia	1996	0.5301	7.72	4.0927	5.7729	-1.9471	-0.2522
United States	2006	0.7575	7.71	5.8403	6.7594	-0.9506	-0.1233
Zambia	2007	0.5889	7.71	4.5401	6.1219	-1.5881	-0.206
Cyprus	2006	0.6407	7.66	4.9074	6.3104	-1.3496	-0.1762
Netherlands	2006	0.7901	7.63	6.0284	6.8212	-0.8088	-0.106
Germany	2006	0.7517	7.57	5.6907	6.611	-0.959	-0.1267
Taiwan	2006	0.5576	7.55	4.2101	5.8801	-1.6699	-0.2212
Sweden	2006	0.8655	7.53	6.517	7.0211	-0.5089	-0.0676
Uganda	2001	0.5555	7.51	4.1721	5.8447	-1.6653	-0.2217
Japan	2005	0.5119	7.5	3.8393	5.6231	-1.8769	-0.2502
Slovakia	1998	0.4665	7.49	3.494	5.4361	-2.0539	-0.2742
Albania	2002	0.5421	7.47	4.0493	5.7682	-1.7018	-0.2278
France	2006	0.8042	7.47	6.0071	6.7142	-0.7558	-0.1012
Norway	2008	0.8962	7.46	6.686	7.0723	-0.3877	-0.052
Peru	2008	0.7029	7.44	5.2294	6.3374	-1.1026	-0.1482
Jordan	2007	0.3119	7.43	2.3171	4.9318	-2.4982	-0.3362
El Salvador	1999	0.487	7.4	3.6035	5.4099	-1.9901	-0.2689
Bulgaria	2006	0.6502	7.24	4.7074	5.9405	-1.2995	-0.1795
Spain	2007	0.7858	7.22	5.6736	6.4367	-0.7833	-0.1085
Hungary	1998	0.5579	7.19	4.0115	5.521	-1.669	-0.2321
Korea, Republic of	2005	0.5258	7.18	3.7752	5.4698	-1.7102	-0.2382
Romania	2005	0.5956	7.17	4.2707	5.6841	-1.4859	-0.2072
Guatemala	2005	0.7033	7.16	5.0354	6.0707	-1.0893	-0.1521
Poland	2005	0.6033	7.13	4.3014	5.6679	-1.4621	-0.2051
Latvia	1996	0.5556	7.11	3.9504	5.3943	-1.7157	-0.2413
Czech Republic	1998	0.5537	7.09	3.9259	5.4776	-1.6124	-0.2274

Table 2.13- Continued

Country	WVS Year	Norms Index	Unadjusted/ Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Croatia	1996	0.5875	7.08	4.1592	5.5679	-1.5121	-0.2136
Trinidad and Tobago	2006	0.7171	7.08	5.0772	6.08	-1	-0.1412
Uruguay	2006	0.7108	7.06	5.0182	6.0035	-1.0565	-0.1496
Slovenia	2005	0.733	7.04	5.1606	6.0909	-0.9491	-0.1348
Ghana	2007	0.4659	7.02	3.2703	5.1271	-1.8929	-0.2696
Lithuania	1997	0.5553	7.02	3.8983	5.3405	-1.6795	-0.2392
Rwanda	2007	0.5934	6.89	4.0885	5.4543	-1.4357	-0.2084
Dominican Republic	1996	0.7247	6.82	4.9423	5.883	-0.937	-0.1374
Indonesia	2006	0.4897	6.78	3.3202	5.0605	-1.7195	-0.2536
Philippines	2001	0.3811	6.78	2.5841	4.6871	-2.0929	-0.3087
Malaysia	2006	0.3695	6.76	2.4977	4.5734	-2.1866	-0.3235
Italy	2005	0.7024	6.72	4.7202	5.6905	-1.0295	-0.1532
Thailand	2007	0.5541	6.7	3.7127	5.1777	-1.5223	-0.2272
South Africa	2007	0.6031	6.61	3.9867	5.2595	-1.3505	-0.2043
Mexico	2005	0.6123	6.6	4.0415	5.2785	-1.3215	-0.2002
Bangladesh	2002	0.326	6.52	2.1258	4.3611	-2.1589	-0.3311
Turkey	2007	0.5153	6.52	3.3596	4.9123	-1.6077	-0.2466
India	2006	0.4014	6.47	2.597	4.6013	-1.8687	-0.2888
Iran	2007	0.3386	6.43	2.1772	4.3338	-2.0962	-0.326
Morocco	2007	0.4857	6.35	3.0842	4.6893	-1.6607	-0.2615
Brazil	2006	0.6865	6.33	4.3453	5.3227	-1.0073	-0.1591
Columbia	1998	0.6449	6.32	4.0756	5.1803	-1.1397	-0.1803
Russian Federation	2006	0.5168	6.25	3.2303	4.6263	-1.6237	-0.2598
Tanzania	2001	0.6554	6.22	4.0766	5.1474	-1.0726	-0.1724
Mali	2007	0.325	6.14	1.9956	4.0811	-2.0589	-0.3353
China	**2007**	**0.5129**	**6.12**	**3.1391**	**4.6823**	**-1.4377**	**-0.2349**
Argentina	2006	0.6751	5.95	4.0166	4.9624	-0.9876	-0.166
Pakistan	2001	0.4602	5.94	2.7335	4.3807	-1.5593	-0.2625
Nigeria	2000	0.372	5.84	2.1726	4.0364	-1.8036	-0.3088
Ukraine	2006	0.5475	5.83	3.192	4.4097	-1.4203	-0.2436
Egypt	2008	0.2616	5.8	1.5172	3.668	-2.132	-0.3676
Algeria	2002	0.4077	4.97	2.0263	3.5149	-1.4551	-0.2928
Zimbabwe	2001	0.5856	4.56	2.6705	3.6015	-0.9585	-0.2102
Venezuela	2000	0.6698	4.16	2.7863	3.4759	-0.6841	-0.1644

Table 2.14: Index of Norms towards Women's Role in Society and Adjustments to EFW Scores, 2012

Country	WVS Year	Norms Index	Unadjusted/ Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Hong Kong	2005	0.6151	8.88	5.4617	7.0991	-1.7809	-0.2006
Singapore	2002	0.5751	8.41	4.8368	6.6551	-1.7549	-0.2087
New Zealand	2004	0.7801	8.27	6.4516	7.3805	-0.8895	-0.1076
Canada	2006	0.7804	8.11	6.3292	7.2246	-0.8854	-0.1092
Australia	2005	0.7462	8.03	5.9922	7.0329	-0.9971	-0.1242
Switzerland	2007	0.764	8.03	6.1352	7.0769	-0.9531	-0.1187
United Kingdom	2006	0.7349	7.92	5.8202	6.8655	-1.0545	-0.1331
Chile	2005	0.6004	7.87	4.7251	6.2957	-1.5743	-0.2
Finland	2005	0.7754	7.85	6.0869	6.9629	-0.8871	-0.113
Jordan	2007	0.3119	7.84	2.4449	5.1371	-2.7029	-0.3448
United States	2006	0.7575	7.81	5.916	6.8092	-1.0008	-0.1281
Taiwan	2006	0.5576	7.79	4.3439	6.0001	-1.7899	-0.2298
Netherlands	2006	0.7901	7.63	6.0284	6.822	-0.808	-0.1059
Estonia	1996	0.5301	7.62	4.0397	5.7287	-1.8913	-0.2482
Zambia	2007	0.5889	7.59	4.4694	6.0617	-1.5283	-0.2014
Japan	2005	0.5119	7.58	3.8802	5.6599	-1.9201	-0.2533
Germany	2006	0.7517	7.57	5.6907	6.6125	-0.9575	-0.1265
Sweden	2006	0.8655	7.56	6.5429	7.0367	-0.5233	-0.0692
Peru	2008	0.7029	7.54	5.2997	6.3873	-1.1527	-0.1529
Norway	2008	0.8962	7.49	6.7129	7.0884	-0.4016	-0.0536
Rwanda	2007	0.5934	7.49	4.4446	5.7488	-1.7412	-0.2325
Uganda	2001	0.5555	7.45	4.1388	5.8153	-1.6347	-0.2194
Romania	2005	0.5956	7.41	4.4137	5.8002	-1.6098	-0.2172
El Salvador	1999	0.487	7.4	3.6035	5.4042	-1.9958	-0.2697
Cyprus	2006	0.6407	7.36	4.7152	6.1602	-1.1998	-0.163
Slovakia	1998	0.4665	7.35	3.4287	5.3692	-1.9808	-0.2695
Albania	2002	0.5421	7.33	3.9734	5.6952	-1.6348	-0.223
Croatia	1996	0.5875	7.32	4.3002	5.684	-1.636	-0.2235
Hungary	1998	0.5579	7.32	4.0841	5.5834	-1.7366	-0.2372
Czech Republic	1998	0.5537	7.3	4.0421	5.5859	-1.7141	-0.2348
Uruguay	**2006**	**0.7108**	**7.3**	**5.1887**	**6.1201**	**-1.1799**	**-0.1616**
Bulgaria	2006	0.6502	7.29	4.7399	5.9633	-1.3267	-0.182
Poland	2005	0.6033	7.28	4.3919	5.7395	-1.5405	-0.2116
France	2006	0.8042	7.27	5.8462	6.6182	-0.6518	-0.0897
Korea, Republic of	2005	0.5258	7.27	3.8225	5.5131	-1.7569	-0.2417

Table 2.14- Continued

Country	WVS Year	Norms Index	Unadjusted/ Men's EFW Score	Women's EFW Score	Adjusted EFW Score	Absolute Change in EFW Score	Percentage Change in EFW Score
Spain	2007	0.7858	7.26	5.705	6.4573	-0.8027	-0.1106
Guatemala	2005	0.7033	7.24	5.0917	6.1102	-1.1298	-0.1561
Latvia	1996	0.5556	7.24	4.0226	5.4537	-1.7863	-0.2467
Philippines	2001	0.3811	7.22	2.7518	4.9071	-2.3129	-0.3203
Lithuania	1997	0.5553	7.14	3.9649	5.3914	-1.7486	-0.2449
Indonesia	2006	0.4897	7.03	3.4427	5.1866	-1.8434	-0.2622
Dominican Republic	1996	0.7247	7.01	5.0799	5.977	-1.033	-0.1474
Malaysia	2006	0.3695	6.99	2.5826	4.6769	-2.3131	-0.3309
Trinidad and Tobago	2006	0.7171	6.9	4.9481	5.9906	-0.9094	-0.1318
Italy	2005	0.7024	6.88	4.8325	5.7688	-1.1112	-0.1615
South Africa	2007	0.6031	6.86	4.1375	5.3806	-1.4794	-0.2157
Ghana	2007	0.4659	6.77	3.1538	5.0033	-1.7667	-0.261
Mexico	2005	0.6123	6.74	4.1272	5.3486	-1.3914	-0.2064
Brazil	2006	0.6865	6.66	4.5718	5.4839	-1.1761	-0.1766
Turkey	2007	0.5153	6.66	3.4317	4.9804	-1.6796	-0.2522
India	2006	0.4014	6.65	2.6692	4.6932	-1.9568	-0.2943
Thailand	2007	0.5541	6.58	3.6462	5.1174	-1.4626	-0.2223
Slovenia	2005	0.733	6.56	4.8088	5.8561	-0.7039	-0.1073
Tanzania	2001	0.6554	6.47	4.2405	5.2733	-1.1967	-0.185
Russian Federation	2006	0.5168	6.45	3.3336	4.7162	-1.7338	-0.2688
Bangladesh	2002	0.326	6.42	2.0932	4.3008	-2.1192	-0.3301
Columbia	1998	0.6449	6.4	4.1272	5.2187	-1.1813	-0.1846
Morocco	2007	0.4857	6.4	3.1085	4.7179	-1.6821	-0.2628
China	2007	0.5076	6.2	3.1469	4.7091	-1.4909	-0.2405
Ukraine	2006	0.5551	6.2	3.4414	4.6024	-1.5976	-0.2577
Nigeria	**2000**	**0.3665**	**6.13**	**2.2467**	**4.1703**	**-1.9597**	**-0.3197**
Mali	2007	0.325	6.05	1.9663	4.0382	-2.0118	-0.3325
Pakistan	2001	0.446	5.95	2.6536	4.3445	-1.6055	-0.2698
Egypt	2008	0.2509	5.91	1.4827	3.6919	-2.2181	-0.3753
Iran	2007	0.3386	5.31	1.798	3.7552	-1.5548	-0.2928
Argentina	2006	0.6835	4.9	3.349	4.4744	-0.4256	-0.0869
Zimbabwe	2001	0.5869	4.82	2.8287	3.7335	-1.0865	-0.2254
Algeria	2002	0.3963	4.47	1.7713	3.2337	-1.2363	-0.2766
Venezuela	2000	0.6765	3.71	2.5099	3.2636	-0.4464	-0.1203

Table 2.15: Change in EFW Rankings as a Result of the Adjustment for Social Norms towards Women's Role in Society, 2009

Country	Unadjusted Rank	Adjusted Rank	Change in Rank	Country	Unadjusted Rank	Adjusted Rank	Change in Rank
Hong Kong	1	3	-2	**Croatia**	36	34	2
Singapore	2	12	-10	**Trinidad and Tobago**	37	21	16
New Zealand	3	1	2	**Uruguay**	38	23	15
Canada	4	2	2	**Slovenia**	39	20	19
Australia	5	6	-1	**Ghana**	40	43	-3
Switzerland	6	4	2	**Lithuania**	41	42	-1
United Kingdom	7	9	-2	**Rwanda**	42	38	4
Chile	8	17	-9	**Dominican Republic**	43	25	18
Finland	9	8	1	**Indonesia**	44	50	-6
Estonia	10	28	-18	**Philippines**	45	55	-10
United States	11	11	0	**Malaysia**	46	59	-13
Zambia	12	19	-7	**Italy**	47	30	17
Cyprus	13	18	-5	**Thailand**	48	47	1
Netherlands	14	10	4	**South Africa**	49	45	4
Germany	15	14	1	**Mexico**	50	44	6
Taiwan	16	26	-10	**Bangladesh**	51	61	-10
Sweden	17	7	10	**Turkey**	52	53	-1
Uganda	18	27	-9	**India**	53	58	-5
Japan	19	33	-14	**Iran**	54	63	-9
Slovakia	20	39	-19	**Morocco**	55	54	1
France	22	13	9	**Brazil**	56	43	13
Albania	21	29	-8	**Columbia**	57	46	11
Norway	23	5	18	**Russian Federation**	58	57	1
Peru	24	16	8	**Tanzania**	59	48	11
Jordan	25	52	-27	**Mali**	60	64	-4
El Salvador	26	40	-14	**China**	61	56	5
Bulgaria	27	24	3	**Argentina**	62	51	11
Spain	28	15	13	**Pakistan**	63	62	1
Hungary	29	35	-6	**Nigeria**	64	65	-1
Korea, Republic of	30	37	-7	**Ukraine**	65	60	5
Romania	31	31	0	**Egypt**	66	66	0
Guatemala	32	22	10	**Algeria**	67	69	-2
Poland	33	32	1	**Zimbabwe**	68	67	1
Latvia	34	41	-7	**Venezuela**	69	68	1
Czech Republic	35	36	-1				

Table 2.16: Change in EFW Rankings as a Result of the Adjustment for Social Norms towards Women's Role in Society, 2012

Country	Unadjusted Rank	Adjusted Rank	Change in Rank	Country	Unadjusted Rank	Adjusted Rank	Change in Rank
Hong Kong	1	3	-2	**Spain**	36	15	21
Singapore	2	12	-10	**Guatemala**	37	20	17
New Zealand	3	1	2	**Latvia**	38	40	-2
Canada	4	2	2	**Philippines**	39	53	-14
Australia	5	7	-2	**Lithuania**	40	42	-2
Switzerland	6	5	1	**Indonesia**	41	48	-7
United Kingdom	7	9	-2	**Dominican Republic**	42	24	18
Chile	8	17	-9	**Malaysia**	43	58	-15
Finland	9	8	1	**Trinidad and Tobago**	44	23	21
Jordan	10	49	-39	**Italy**	45	29	16
United States	11	11	0	**South Africa**	46	43	3
Taiwan	12	22	-10	**Ghana**	47	51	-4
Netherlands	13	10	3	**Mexico**	48	45	3
Estonia	14	32	-18	**Brazil**	49	39	10
Zambia	15	21	-6	**Turkey**	50	52	-2
Japan	16	35	-19	**India**	51	57	-6
Germany	17	14	3	**Thailand**	52	50	2
Sweden	18	6	12	**Slovenia**	53	26	27
Peru	19	16	3	**Tanzania**	54	46	8
Norway	20	4	16	**Russian Federation**	55	55	0
Rwanda	21	30	-9	**Bangladesh**	56	62	-6
Uganda	22	27	-5	**Columbia**	57	47	10
Romania	23	28	-5	**Morocco**	58	54	4
El Salvador	24	41	-17	**China**	59	56	3
Cyprus	25	18	7	**Ukraine**	60	59	1
Slovakia	26	44	-18	**Nigeria**	61	63	-2
Albania	27	33	-6	**Mali**	62	64	-2
Croatia	28	34	-6	**Pakistan**	63	61	2
Hungary	29	37	-8	**Egypt**	64	67	-3
Czech Republic	30	36	-6	**Iran**	65	65	0
Uruguay	31	19	12	**Argentina**	66	60	6
Bulgaria	32	25	7	**Zimbabwe**	67	66	1
Poland	33	31	2	**Algeria**	68	69	-1
France	34	13	21	**Venezuela**	69	68	1
Korea, Republic of	35	38	-3				

not men. The index of social norms captures social attitudes regarding whether men should take priority over women in education, employment, and leadership opportunities. The prevailing social attitudes about these issues, if strongly in favor of providing these opportunities to men, and not women, would limit a woman's ability to exercise any economic rights she may have under the law. While there are important differences between these two indexes, one would still expect them to have a strong positive correlation.

To determine the similarities between the indexes, the correlation coefficients are calculated between the 2009 and 2012 GDERI indexes and the Index of Norms towards Women's Role in Society. The data for both indexes are available for 68 countries. These 68 countries are used to derive the correlation coefficients. The correlation between the 2009 GDERI and the norms index is 0.5090 while the correlation between the 2012 GDERI and the norms index is 0.5683. This confirms that there is a strong positive relationship between both indexes, despite the fact that they measure different types of institutions. This enhances our confidence in the procedures presented in this chapter and the results of the indexes.

Table 2.17 presents a comparison of the two indexes. The table is organized according to Norms Index scores, starting with the highest scoring countries and following in descending order. For the vast majority of countries, the formal rules and gender norms present a consistent picture. Most countries with high scores on the index of formal economic rights also have high scores on the gender norms index. For example, most of the countries that belonged to the OECD in 1980 have high scores on both the GDERI and the Norms Index. The 13 countries with highest Norms Index scores are all OECD member countries that also have GDERI scores of "1," the highest score possible. The reverse is also true; countries with low GDERI scores also tend to be on the lower end of the spectrum of norms index scores.

There are some countries that receive the highest possible score for the formal economic rights index, while at the same time they earn a Norms Index score that falls below the mean (0.59). Japan is the only OECD member country that falls into this category, along with other Asian countries like Taiwan, South Korea, China, and Thailand. Several Eastern European nations also have formal rules that support gender parity while possessing social norms that do not. These countries include Croatia, Latvia, Lithuania, Hungary, Ukraine, Czech Republic, Slovak Republic, and Estonia.

Table 2.17: Comparing the Index of Norms towards Women's Role in Society with the Gender Disparity in Economic Rights Index

Country	Norms Index	GDERI 2009	GDERI 2012	Country	Norms Index	GDERI 2009	GDERI 2012
Norway	0.8962	1.00	1.00	*Croatia*	0.5875	1.00	1.00
Sweden	0.8655	1.00	1.00	*Zimbabwe*	0.5869	0.40	0.60
France	0.8042	1.00	1.00	*Singapore*	0.5751	1.00	0.90
Netherlands	0.7901	1.00	1.00	*Hungary*	0.5579	1.00	1.00
Spain	0.7858	1.00	1.00	*Taiwan*	0.5576	0.90	1.00
Canada	0.7804	1.00	1.00	*Latvia*	0.5556	1.00	1.00
New Zealand	0.7801	1.00	1.00	*Uganda*	0.5555	0.40	0.10
Finland	0.7754	1.00	1.00	*Lithuania*	0.5553	1.00	1.00
Switzerland	0.7640	1.00	1.00	*Ukraine*	0.5551	1.00	1.00
United States	0.7575	1.00	1.00	*Thailand*	0.5541	1.00	0.80
Germany	0.7517	1.00	1.00	*Czech Republic*	0.5537	1.00	1.00
Australia	0.7462	1.00	1.00	*Albania*	0.5421	0.80	0.55
United Kingdom	0.7349	1.00	1.00	*Estonia*	0.5301	1.00	1.00
Slovenia	0.7330	1.00	1.00	*Korea, Republic of*	0.5258	1.00	1.00
Dominican Republic	0.7247	0.80	0.70	*Russian Federation*	0.5168	1.00	1.00
Trinidad and Tobago	0.7171	0.90	1.00	*Turkey*	0.5153	1.00	1.00
Uruguay	0.7108	1.00	0.90	*Japan*	0.5119	1.00	1.00
Guatemala	0.7033	0.90	0.80	*China*	0.5076	1.00	0.60
Peru	0.7029	1.00	0.90	*Indonesia*	0.4897	0.80	0.70
Italy	0.7024	1.00	1.00	*El Salvador*	0.4870	0.90	0.80
Brazil	0.6865	1.00	0.65	*Morocco*	0.4857	0.70	0.70
Argentina	0.6835	1.00	1.00	*Slovak Republic*	0.4665	1.00	1.00
Venezuela	0.6765	1.00	1.00	*Ghana*	0.4659	0.60	0.50
Tanzania	0.6554	0.60	0.40	*Pakistan*	0.4460	0.50	0.50
Bulgaria	0.6502	1.00	1.00	*India*	0.4014	0.50	0.60
Colombia	0.6449	0.90	0.60	*Algeria*	0.3963	0.70	0.70
Hong Kong	0.6151	1.00	1.00	*Philippines*	0.3811	0.90	0.80
Mexico	0.6123	1.00	1.00	*Malaysia*	0.3695	0.80	0.80
Poland	0.6033	1.00	1.00	*Nigeria*	0.3665	0.50	0.25
South Africa	0.6031	0.50	0.70	*Iran*	0.3386	0.50	0.35
Chile	0.6004	0.80	0.90	*Bangladesh*	0.3260	0.50	0.50
Romania	0.5956	1.00	1.00	*Mali*	0.3250	0.60	0.50
Rwanda	0.5934	0.50	0.50	*Jordan*	0.3119	0.50	0.50
Zambia	0.5889	0.40	0.55	*Egypt*	0.2509	0.90	0.40

There are also a few examples for which the reverse is true. That is the norms reflect gender parity with index scores above the mean, but the formal rules include additional barriers to women so that the GDERI scores are below the mean (0.74). South Africa, Rwanda, Tanzania, the Dominican Republic, Brazil, and Columbia are the only countries where this is the case. The countries in which the formal rules and gender norms greatly diverge are countries worthy of further investigation in order to better understand the interaction between formal and informal rules.

2.5 Concluding Remarks

This chapter presents two different methods for creating a gender disparity index. One method uses the OECD's *Gender Institutions and Development Data Base* to create an index of gender disparity in formal economic rights. This measure, the Gender Disparity in Economic Rights Index, captures the legal barriers that women face above and beyond those faced by men, when it comes to exercising economic rights. The second method uses World Values Survey data to construct an index of gender disparity in social norms. This Index of Social Norms towards Women's Role in Society captures social attitudes regarding whether men should take priority over women in education, employment, and leadership positions. Both indexes are then used to adjust the EFW scores to account for gender disparities. After adjusting measures of economic freedom to account for these gender differences, both the EFW scores and rankings undergo notable changes.

The countries with the greatest reductions to EFW scores are not surprising. In general, countries located in the Middle East, Africa, and other countries with a predominantly Muslim population tend to erect greater barriers limiting the ability of women to exercise economic rights. These countries are also characterized by prevailing social attitudes that prioritize men over women in education, employment, and leadership positions. This is not surprising. Societies with prevailing religious beliefs that are both strongly hierarchical and patriarchal are more likely to possess a set of institutions that places additional constraints on females.

Southeast Asian countries also tend to have substantial gender disparities in terms of access to economic rights as well as social norms that prioritize males over females when it comes to employment, education, and leadership positions. Bangladesh, Nepal, Sri Lanka, and Malaysia are just a few countries where this is true.

Do the adjustments for gender disparity significantly alter the country rankings? The rank correlation coefficient between the unadjusted and adjusted EFW rankings provides insight on the answer to this question. The rank correlation coefficient for 2009 was 0.8825 when the GDERI scores were used to adjust the EFW index, and 0.8893 when the EFW ratings were adjusted with the Norms towards Women's Role in Society data. The correlation between the two rankings in 2012 was 0.8693 using the GDERI data and 0.8537 when the adjustment was performed with the gender norms data. These relatively high correlation coefficients are consistent with the view that adjusting the EFW data to account for gender differences in formal

economic rights and gender norms does not alter the relative ranking of most countries. However, for a small subset of countries, this adjustment process makes a substantial difference. Tables 2.9 and 2.15 indicate that this is the case for many Middle Eastern and African nations when adjusting the EFW index for both formal and informal gender differences. The rankings for several Asian countries are also reduced substantially when adjusting for gender norms. The current EFW index procedures lead to an overstatement of economic freedom for this subset of countries. Thus, it is particularly important to adjust for gender differences in economic freedom in these regions.

A few countries, such as Japan, have social norms that drastically differ from their formal legal rules. Adjustments using the GDERI data did not alter Japan's EFW score, and only increased its position relative to other countries for which the adjustment resulted in a lower EFW score. When adjusting the EFW score using the Index of Social Norms towards Women's Role in Society, however, Japan's score drops by a staggering 11% in 2009 and 24% in 2012. If one were only looking at Japan's formal legal institutions, the constraints on the choices of women due to social norms would not enter into consideration.

Many countries that rank highly in the unadjusted EFW scores drop from the top 20 positions after adjusting for gender-based legal differences and norms. Jordan, the United Arab Emirates, Oman, and Costa Rica all ranked within the top 20 countries according to 2012 EFW scores. However, after using the GDERI data to adjust the EFW scores, none remain in the top 20 positions. Jordan falls by 51 positions, and the United Arab Emirates falls by 48. In 2009 a similar phenomenon is observed. Chile, Zambia, Oman, and Bahrain all appear among the top 20 ranked countries until the GDERI data is used to adjust the EFW score. After the adjustment, Chile falls by 26 positions, Zambia falls by 67 positions, Oman falls by 45 positions, and Bahrain by 38.

Using gender norms data to adjust the EFW scores has similar results. Jordan, Estonia, Zambia, Japan, and Rwanda all rank among the countries with the top 20 EFW scores (out of 69 countries) prior to the adjustment for gender norms. Jordan falls by 38 positions, Estonia by 21, Japan by 15, Zambia by seven, and Rwanda by six. Also in 2009, Estonia, Taiwan, Uganda, Japan, and the Slovak Republic start off in the top 20, but after their EFW scores are adjusted for gender norms they are no longer ranked in this group.

There are still questions that remain regarding the best means to adjust existing measures of economic freedom for gender disparities in formal and informal economic rights. What is presented in this chapter is one method for dealing with this issue, but it is by no means the only one. Future research may wish to focus on some related questions.

One potential question is whether or not the gender-related adjustment to the EFW index should pertain to all parts of the index. For example, Area 3 of the EFW index captures the stability of a country's monetary policy. It can be argued that monetary policies affect both males and females of a country in a similar manner regardless of either's ability to own property. As such, one may consider calculating a gender-adjusted EFW index that does not adjust Area 3 for gender disparity. Others may argue that not all of the subcomponents should be weighted equally in the summary indexes. There is certainly room for experimentation with different weighting schemes and other parameters in future lines of research.

Another potential extension to this research is to use other data sources to create different measures of gender disparity in economic rights, such as the World Bank's *Women, Business, and the Law: 50 Years of Women's Legal Rights Database* (WB&L). This database of objective, formal legal restrictions based on gender provides a measure of the de jure barriers a woman faces when attempting to participate in the process of acquiring and owning property through voluntary exchange. Data is provided in seven areas: Accessing Institutions; Using Property; Getting a Job; Providing Incentives to Work; Building Credit; Going to Court; and Protecting Women from Violence. The most recent report (World Bank IFC 2014) covers 143 economies from 1960 to 2010.[25] These factors render this dataset useful in terms of generating a historical time series of adjusted EFW scores that can be applied in panel regression analysis. To make adjustments that are comparable to what has been presented in this chapter, researchers would need to select components from the WB&L database that parallel the components of the Fraser Institute's EFW index in both their theoretical foundation in negative economic liberties and as in their relation to the five areas of the EFW index. This seems to be a worthy undertaking.

Perhaps the most obvious extension of the work presented in this chapter is to compare the relationships that have been found in the literature to exist between the unadjusted EFW index and various development outcomes (income, political institutions, GDP growth, foreign

[25] Area 7, Protecting Women from Violence, is in the pilot stages as of August 2014, and currently only covers 100 countries.

direct investment, etc.) with those of the same outcomes and the gender disparity adjusted EFW index. Do these adjustments have any material impact on the overall magnitude and significance of these well-established relationships? Which relationships experience significant changes? These are interesting questions that can now be explored using the data presented, and the methods employed in this chapter.

While the analysis presented in this chapter may raise more questions that it answers, a few facts emerge. Adjusting the EFW index to account for gender norms and for gender-based legal differences has a significant impact on the absolute EFW score for most countries. It also results in substantial changes in the country rankings. Because these adjustments have resulted in significant changes to the EFW scores for many countries, it is clear that measures of economic freedom overstate how free people are in a number of cases. There is now the possibility for greater precision in measuring economic freedom. It will be interesting to determine whether and how changes in the way economic freedom is measured alter the conclusions that have previously emerged from the literature on economic institutions. The hope is that this analysis might begin an examination of these issues.

CHAPTER THREE

THE IMPACT OF ECONOMIC INSTITUTIONS ON GENDER NORMS

3.1 Introduction

This chapter develops an empirical model that analyzes the relationship between the set of institutions consistent with negative economic freedom and social norms regarding women's role in society. Economists since Adam Smith (1776/1976) have argued that the set of institutions consistent with the classical liberal ideals of economic freedom lead to human flourishing. Even the early practitioners of the dismal science noted that in such an institutional context, granting all individuals equality, regardless of gender, race, religion, or other characteristics, would be socially beneficial.[26] John Stuart Mill (1869/1989) was among the first to argue in favor of equal economic and social status for women. Becker's (1957/1971) research on discrimination indicates that economic freedom (i.e. market competition) plays an important role in weeding out society's discriminatory practices over time by imposing a monetary penalty on discriminatory behavior. Such works suggest that institutions consistent with the ideal of economic freedom could lead to a more tolerant society.

Becker's economic theory of discrimination indicates that market-oriented institutions create an environment that fosters competition and, over time, weeds out market participants exhibiting discriminatory behavior. Essentially, Becker's model assesses how the quality of economic institutions (as market-oriented is often used synonymously with economic freedom) impacts the economic returns to discriminatory practices. Becker's model implicitly includes a role for culture, as it includes a parameter representing a preference for discrimination. This parameter has an impact on the likelihood that markets will weed out discriminatory practices. For example, a potential employer with a strong preference for discrimination against women will be more than willing to pay a premium to hire only male employees. Further, if the prevailing social norms in a country tend to favor men over women in education, employment, and leadership positions, and discourage women's participation in markets, then competitive market forces will not be enough to immediately weed out discriminatory practices. Such a society could be said to tolerate (or even demand) this type of discrimination. But what

[26] See, for example David M. Levy, (2001).

determines these preferences? Might the set of institutions consistent with economic freedom lead to preferences that are less discriminatory and more tolerant of members of other groups?

Several studies of economic freedom and social attitudes are related to this analysis. Berggren and Jordahl (2006) examine the impact of economic freedom on tolerance and find that economic freedom increases social tolerance towards homosexuals. Berggren and Nilsson (2013) find that economic freedom has a positive impact on social trust. Pitlik and Rode (2014) use data from the World Value Survey to examine the impact of economic freedom on an individual's perceptions of control over their life. They find that economic freedom is positively associated with perceptions of life control, and that this result is particularly true in lower income countries. In addition, Alesina et al. (2013) used the World Value Survey data to determine the impact of historical plow use on the attitudes towards women's role in society. Here, a broader set of questions from the World Values Survey is used to study the relationship between economic freedom and social norms towards women's role in society.

The remainder of this chapter is organized as follows. Section two discusses the theoretical relationship between economic freedom and gender norms. Section three describes the data sources used to investigate this relationship, while section four presents the empirical methods and results. Finally, general conclusions and suggestions for future research are discussed in section five.

3.2 The Theoretical Relationship between Economic Freedom and Gender Norms

Gary Becker (1957/1971) modeled discrimination as being the result of personal prejudice, or taste, against associating with a particular group. Sources of discrimination, he argued, come from both the supply and demand side of the marketplace (employers, employees/coworkers, and customers). The role of the competitive process is key in Becker's model. Non-discriminating firms possess a competitive advantage over discriminatory firms, because they are unwilling to pay a wage premium in order to hire workers from the majority group. Thus, non-discriminating firms have lower costs providing them with a competitive advantage over discriminatory rivals.

Previous work have provided evidence that Becker's model provides a valid explanation of the differences in labor market outcomes between racial groups (Levine et. al 2008; Nunley et al. 2011) as well as between gender groups (Ashenfelter and Hannan 1986; Hellerstein et al.

2002; Black and Brainerd 2004; Weichselbaumer and Winter-Ebmer 2007; and Hirsch et al. 2014). Becker and those following, take the preferences individuals have for discrimination as given. This paper uses data from the World Values Survey to examine the factors that determine the value of the preference for discrimination parameter in Becker's model.

The empirical model presented here takes an institutional approach to explaining the determinants of discrimination. The goal is to explain which factors shape an individual's beliefs about whether or not males should have priority over females when it comes to employment, leadership positions, and educational opportunities. Such attitudes directly influence the likelihood that an individual will actively engage in gender discrimination. Informal factors (such as cultural norms and religious beliefs) and formal factors (such as existing property and inheritance laws) are expected to play a role in shaping individuals' beliefs.

An individual will hold discriminatory beliefs as long as the costs of holding such beliefs are less than the benefits they receive for holding such beliefs. So how does a society transition from one in which the prevailing social norms towards women's role in the economy are discriminatory to one in which norms are more tolerant? This paper examines whether countries that are more economically free are more likely to be places that also possess gender norms closer to parity.

In a competitive market context, business owners choosing to act upon any discriminatory preferences they may possess will get weeded out of the market over time. Because they will have to pay a premium to employ only laborers from their preferred group, their costs will be higher than similar firms where discrimination is not practiced. In addition to the resulting higher prices acting as a deterrent to potential customers, such firms will further discourage potential consumers who object to discrimination on moral grounds. Some customers will incur a psychological cost knowing that they have purchased goods or services from firms that discriminate, and these individuals will choose to spend their money at competing firms that do not. Thus, the profit motive provides a strong incentive for firms and business owners to, at the very least, behave as if they did not possess discriminatory preferences if they wish to prosper in a free market.

Because of the complex nature of institutions, changes in preferences may happen slowly, requiring several generations before prevailing preferences/attitudes towards discrimination are noticeably altered. Early generations began in a world of intolerance, in which members of the

majority group actively discriminated against the minority group. Members of the minority voluntarily offered their labor at reduced wages, and some employers were willing to accept this arrangement, despite their personal beliefs about members of the minority group. Firms willing to hire minority group members were able to offer their goods and services at lower prices than their discriminating competitors. Over time, if firms did not adapt their behavior and hire the less expensive labor, they will be displaced from the market by their competitors.

In subsequent generations, there will be less distinction between the actions of business owners who possess discriminatory preferences and those who do not, as all must behave as if they are tolerant or risk going out of business. Thus, individuals in later generations live in a world where acting upon discriminatory preferences in the market is less common, and individuals are exposed to members of the minority in many market contexts on a regular basis. This exposure will serve to eradicate any incorrectly held beliefs about the differences in the innate talents and abilities of members from the different groups.

If, however, the vast majority of customers tolerate, or even prefer, discrimination, then there may be no monetary incentive discouraging discrimination present to place society on a more tolerant path. This type of situation is unlikely to occur unless most members of a society harbor a strong preference for discrimination and trade with societies that do not share this preference is prohibited. Economic freedom widens the scope of the market and reduces the possibility that people living in societies where discrimination is preferred will never come into contact with people from more tolerant societies. Economic exchange encourages people to interact with those who are most different from them, as the gains from trade and specialization will be the highest between societies with the greatest differences. Thus, the threat of economic losses provided by the market process discourages discriminatory behavior in the immediate period, and alters preferences as time progresses. In addition, there are higher potential rewards from exchanging with individuals with different comparative advantages.

The environment in which an individual grows up influences how they perceive the world. An individual raised in the antebellum Southern United States, would have been immersed in a formal institutional context that permitted the enslavement of people of color. Further, the prevailing cultural attitudes in the South during this time viewed people of color as intellectually inferior to members of the majority group. This cultural context would certainly influence the beliefs of individuals raised there, shaping their ideas about the potential

productivity of the members of this minority group. These views were then reinforced via the formal institutions that prevented the racial minority group from exercising economic rights.

Additional work has been done to investigate the role experiences play in preference and attitude formation. Fernandez, Fogli, and Olivetti (2002) argue that changes in men's attitudes towards the role of women in the formal economy is influenced by their experiences with their mothers. Men with working mothers who have attained an education are more likely to prefer a female partner who possesses the same qualities. Their exposure to their working mothers in the past influences their expectations of the type of contributions women are able to bring to the workplace. Men with working mothers are more likely to view educated, working women as more desirable as partners. This increases the returns women receive for becoming educated and pursuing a career. While taking the literature one step closer to understanding preference transmission, this work still ignores the role economic institutions play in influencing the mothers' work and education decisions. If men are more likely to have mothers who work or have a college education in countries with relatively free economic institutions, then shifts in gender norms towards greater tolerance will be less likely to occur outside of the context of free markets.

Demographic characteristics may also influence an individual's perspective and shape their beliefs. Whether an individual is male or female will influence their beliefs about whether significant differences in the productive capabilities of the two sexes exist. The generation an individual is born into will hold a distinct set of values and beliefs that differs from those held by members of prior and subsequent generations. What is considered taboo behavior for women in one generation is often readily accepted behavior for women of younger generations. Social norms seem to move in the direction of greater tolerance as time passes. This chapter examines the validity of this hypothesis.

Beliefs about the differences in abilities according to gender will inform an individual's opinions about whether males should receive priority over females in education, jobs, and leadership roles. Whether an individual has received higher levels of education may also impact their opinion on whether one sex should receive priority over the other. If an individual has had a job where they engage with members of the opposite sex on a regular basis in a market setting, this may influence their attitudes towards gender discrimination. There are reasons to believe that

each of these factors will influence the beliefs people hold regarding the relative productivity of women and men as participants in the formal economy.

Through trading with different societies, individuals exchange bits of their culture along with the goods and services. Another word for the order brought about by economic exchange is *catallaxy.* Derived from the Greek verb *katallattein*, catallaxy means not only to exchange but also to admit into the community or to make an enemy a friend. Coyne (2007) argues that one way to export democracy to other societies without using force is through economic freedom and open trade. This type of exchange provides gradual exposure to the different cultures and ideas of their trading partners. Through such exposure, the preferences of people in a less tolerant society may become less discriminatory over time. Exchange also results in the development of dependence on one another via commercial relationships, which facilitate trust and serve to overcome discriminatory views (Boudreaux 2007).

Healthier, happier, and more prosperous societies are more common in the context of institutions consistent with the concept of economic freedom (Berggren 2003; Hall and Lawson 2013). Individuals living in a society in which discriminatory preferences are the norm, but one in which there is considerable economic freedom otherwise, are more likely to interact with less discriminatory societies that are able to more fully benefit from the potential gains from trade because of their tolerance. These individuals may notice that a variety of desirable outcomes are more prevalent in the more tolerant society than the one in which they live.

Various explanations for the variation in women's rights have been offered. It is possible that these factors also exert some influence on attitudes towards women's role in society. Geddes and Lueck (2002) argue that the expansion in women's property rights stem from advances in economic development, which created higher returns to women's participation in the formal economy than the returns to their efforts within the home. Doepke and Tertilt (2009) and Fernandez (2009) discuss of the role of political institutions, specifically the importance of inter-jurisdictional competition, in expanding economic rights to women. As such, this study includes both a measure of the average per capita income in a country and the quality of political institutions.

Additionally, the potential role of religion (Barro and McCleary 2003) and other cultural factors (Berggren and Jordahl 2006; and Bjørnskov 2007; Fernandez 2007; Alesina et al. 2013) on determining the cross-country differences in attitudes towards women's economic

participation is addressed. Several scholars have noted the importance of other civil liberties, such as freedom of speech (specifically freedom of the media) in protecting economic rights, suggesting that different types of freedom reinforce one another. Alexis de Tocqueville (1835/2012) was among the first to note that the media can act as an important constraint on the behavior of those in positions of political power. Leeson (2008) and Coyne and Leeson (2004; 2009) discuss the role of the free media as a check on political power, the impact a free media has on economic development, and how freedom of the press provides a means of generating institutional change. As such, serious consideration will be given to the relationship between these other factors on preferences for gender discrimination. None of the existing research examining gender norms and social attitudes includes a comprehensive measure of economic freedom as an explanatory variable.

3.3 Description of the Data

The goal of this analysis is to investigate which factors influence an individual's attitudes regarding whether or not males should be given preference over females in obtaining education, employment, and leadership positions. Fernandez, Fogli, and Olivetti (2002) use the General Social Survey data to assess the impact of experience on changing preferences towards the role of women in the market. This study follows Alesina et al. (2013) and uses the World Values Survey (WVS) data as the measure of gender norms.

The Index of Social Norms towards Women's Role in Society serves as the dependent variable in this analysis. This measure was defined and discussed in detail in the previous chapter. In summary, this index is the simple average of an individual's response to three questions regarding whether or not males should take priority over females when it comes to education, employment, and leadership positions. Scores closer to "1" are closer to gender parity and indicate that no preference should be given. Scores closer to "0" indicate social norms strongly favor males over females in these roles.

Economic freedom is the main explanatory variable of interest used throughout, as it is an investigation into the impact of a particular system of institutions on the lives of women. The Fraser Institute's Economic Freedom of the World (EFW) Index[27] is the measure of economic freedom used in this study. This index provides an ordinal measure of how closely a country's

[27] See chapter two for a detailed discussion of this variable.

institutions are consistent with economic freedom. Scores between "0" and "10" are assigned to each country. The more economically free a country is, the higher its score will be in EFW index.

In an economically free environment, resources, physical capital and human capital, are permitted to flow to their most valued use. Minimal restrictions on human interactions result in a society with a greater number of economic opportunities. Thus, greater levels of economic freedom typically indicate that there are more opportunities available to individuals. This variable is anticipated to be positively related to the score on the social norms index. That is, countries with greater economic freedom are less likely to have social norms that favor males over females.

Per capita income level is included because it is often argued that higher levels of economic development reduce the gender disparity in economic rights (Geddes and Lueck 2002). This variable is expected to have a negative relationship with the level of gender disparity. To control for the potentially important impact of overall economic development on gender discrimination, per capita GDP data, measured in purchasing power parity-adjusted constant 2005 US international dollars, is obtained from the World Bank's *World Development Indicators*. Figures for Taiwan are obtained from the Penn World Tables (Heston, Summers, and Aten, 2012).

Throughout the literature, there is evidence in support of the view that economic freedom has a causal impact on the level, and the growth rate, of per capita GDP. As such, regression specifications including per capita GDP will control for the indirect effect of economic freedom that works through the channel of per capita GDP and will understate the impact of economic freedom. These two-stage regressions are the primary regression specifications (they will be the even numbered specifications in the tables throughout this chapter).

A measure of democratic versus authoritarian political institutions is included since democratic institutions (provided all individuals have equal access to the voting franchise) provide women with a means to demand more equal treatment. Additionally it has been argued that political institutions exert a positive impact on economic growth and development (de Haan and Sturm 2003). To control for the direct effect of democratic political institutions on gender-disparity, the Polity IV measure of political institutions is used (Marshall, Gurr, and Jaggers 2012). The latest version of the Polity IV data contains coded annual information on the

characteristics of the government regime authority and transitions for all independent states with a population greater than 500,000. The data cover the years 1800–2006. The Polity IV index scores are based on expert assessment of that country's elections, as well as measures of competitiveness, openness, and level of participation. Alternative measures of political freedom and civil liberties, which are produced by Freedom House, are included as a robustness check.[28]

The percent of the population that identifies as Muslim, Catholic, and Non-Religious are each included as a proxy for different types of cultural institutions. Several scholars have noted a potential difference in the prevailing cultures of societies in which the dominant religion emphasizes hierarchical relationships and ones in which the dominant religion places more emphasis on the individual. Berggren and Jordahl (2006) and Bjørnskov (2007) find that hierarchical religions are associated with lower trust. Additionally, Barro and McCleary (2003) find that members of the Catholic and Muslim religions have the highest rate of church attendance as well as the strongest belief in heaven and hell. It is important to remember that these variables are proxies for the prevailing cultural characteristics of a society, and that Islam and Catholicism are often associated with cultures that tend to place more restrictions on the appropriate behavior of women. The larger a country's Muslim population percentage is the greater the expected level of disparity between male and female rights. The *World Religion Dataset* (Moaz and Henderson, 2013) provides a measure of the percentage of the population of each country belonging to a wide variety of religions on an annual basis. This is the main source of data used as a control variable in this chapter, as well as in chapter four.

Table 3.1 provides a detailed description of the country-level data used, as well as indicates the data sources from which these variables are derived. The three key independent variables (economic freedom, per capita income, and political institutions) are collected for the period coinciding with the dependent variable, as well as the period a decade prior to the dependent variable.

Table 3.2 provides the descriptive statistics for the key macro variables. The highest value for the norms index score at the country level is 0.8962, which corresponds to Norway's 2008 score. The lowest value is 0.2509, which was Egypt's score in 2008. The mean norms index score is 0.5684, while the standard deviation is 0.1475.

[28] Several other variables were also included in preliminary regression analysis, but they rarely entered into the

Table 3.1: Descriptions and Sources of Macro-Level Variables

Dependent Variable	**Description**	**Source**
Index of Norms Towards Women's Role in Society	This measure reflects social attitudes regarding whether males should take priority over women in education, employment, and leadership roles. It reflects the average social opinions on three questions in the World Values Survey. The individual's responses to each question are averaged to arrive at three country level sub-scores. These three sub-scores are then averaged to arrive at the country-level Norms Index Score. A score of "0" indicates social norms heavily favor males, a score of "1" indicates social norms treat males and females equally.	Author's own calculations using World Values Survey data
Independent Variables		
EFW (Contemporaneous and 10 Years Prior)	A measure of the extent to which a country possesses institutions consistent with economic freedom. A score of "0" indicates that a country is not economically free and has centrally planned economic institutions. A score of "10" indicates that a country possesses economic institutions that protect property rights, allow for individual choice, and allow market forces to operate.	Fraser Institute's Economic Freedom of the World Index
Polity (Contemporaneous and 10 Years Prior)	This is a measure of the extent to which a country has democratic political institutions. A score of "-10" indicates an authoritarian government, while "10" indicates a stable, democratic government.	Polity IV data, Marshall et al. (2013)
Log Per Capita (Contemporaneous and 10 Years Prior)	The natural log of per capita GDP measured in constant 2005 international dollars.	Penn World Table Version 7.0. Heston, A., Summers, R., and Aten, B. (2011).
Islam Percent of Population	The percentage of a country's population that identifies as being a member of the Islamic faith.	The World Religion Dataset, Maoz, Z. and Henderson, E. A. (2013).
Catholic Percent of Population	The percentage of a country's population that identifies as a member of the Catholic faith.	The World Religion Dataset, Maoz, Z. and Henderson, E. A. (2013).
Non-Religious Percent of Population	The percentage of a country's population that identifies as being non-religious.	The World Religion Dataset, Maoz, Z. and Henderson, E. A. (2013).

Table 3.2: Descriptive Statistics for Macro- Level Variables

	Observations	Mean	Standard Deviation	Minimum	Maximum
C001	147	0.5358	0.2393	0.0044	0.9781
D059	148	0.5007	0.1437	0.1251	0.8165
D060	148	0.6679	0.0998	0.3787	0.9402
Norms Index	148	0.5684	0.1475	0.2509	0.8962
EFW Current	122	6.6975	1.1242	3.3865	8.9291
EFW Prior	122	5.8135	1.4555	2.6100	9.1400
Polity Current	141	5.3972	5.7369	-10.0000	10.0000
Polity Prior	143	1.9930	7.1528	-10.0000	10.0000
Per Capita Income Current	144	12,627.80	11,688.15	718.2068	48,526.38
Per Capita Income Prior	124	11,403.33	9,728.67	578.9902	42,305.11
Log Per Capita Income Current	144	8.9512	1.0794	6.5768	10.7899
Log Per Capita Income Prior	124	8.8857	1.0743	6.3613	10.6527
Secondary Ed	146	56.3947	18.8494	11.87	95.33
Catholic Percent	121	0.3101	0.3479	0.0000	0.9700
Islam Percent	121	0.1960	0.3437	0.0000	0.9900
Not Religious Percent	121	0.1011	0.1325	0.0000	0.6300

The correlation coefficients for the macro-level variables are provided in Table 3.3. Because economic freedom and per capita income are closely correlated, with a coefficient of 0.5831, steps are taken in the regression analysis to ensure that the impact of economic freedom is separated from the impact of income.

Table 3.4 through Table 3.6 provide a cursory overview of the norms index data. Country-level data are used to analyze whether or not cultural attitudes change over time, across genders over time, and across different generations over time. Table 3.4 through Table 3.6 contain data from countries in the study sample that have WVS data from multiple years to

Table 3.3: Correlation Coefficient for Macro-Level Variables

	C001	*D059*	*D060*	*Norms Index*	*EFW Current*	*Polity Current*	*Income Current*	*Log Per Capita Current*	*Secondary Education*	*Catholic Percent*	*Islam Percent*	*Not Religious Percent*
C001	1.0000											
D059	0.7895	1.0000										
D060	0.6587	0.7881	1.0000									
Norms Index	0.9446	0.9286	0.8371	1.0000								
EFW Current	0.4148	0.5056	0.3943	0.4775	1.0000							
Polity Current	0.4582	0.5682	0.4364	0.5317	0.3701	1.0000						
Per Capita Income Current	0.5512	0.6527	0.5342	0.6298	0.3701	0.4697	1.0000					
Log Per Capita Income Current	0.4826	0.6047	0.5057	0.5716	0.5831	0.5120	0.8931	1.0000				
Secondary Education	0.1719	0.1151	0.0962	0.1524	0.1517	0.1611	0.2785	0.3111	1.0000			
Catholic Percent	0.2338	0.3370	0.1357	0.2687	0.0329	0.2455	-0.0230	0.1091	-0.1582	1.0000		
Islam Percent	-0.5804	-0.5846	-0.3830	-0.5942	-0.2641	-0.4941	-0.3851	-0.4423	-0.2944	-0.4459	1.0000	
Not Religious Percent	0.2601	0.1432	0.0630	0.2021	0.0714	0.0859	0.2821	0.3166	0.3877	-0.1556	-0.3482	1.0000

provide an overview of the general pattern of gender norms. In each table, the data is divided into three periods: 1994-1997, 1998-2001, and 2002-2008. Data from all available periods are provided for these select countries. At least four countries from each world region are included in these three tables.

The overall pattern presented in all three tables is consistent with the hypothesis that norms tend to become more tolerant over time. Table 3.4 shows that the norms index scores from the 2002-2008 period are nearly always higher than those from the previous periods. Social norms in all global regions were more consistent with gender equality by 2008 than they were in the mid-1990s. A few countries saw a decrease in norms index scores, such as Bangladesh, India, and Finland. Brazil, Colombia, Venezuela, and Taiwan experienced the largest increases in norms index scores, of around 0.20 points. The norms index scores for all OECD member countries (except Japan) were relatively high in the initial period. While these countries did see some movement towards greater parity in gender norms, the magnitude of change for this region is quite small. The Middle Eastern and African countries also do not experience changes of great magnitude during the sample period. The largest increases occurred in Eastern Europe and Latin America, while Asian countries mostly exhibited slight decreases in norms index scores. This pattern holds when the sample is divided along gender lines, as well as when separated according to age group.

Table 3.5 divides the country-level norms index averages into country-level averages for males and for females. The data show that there are often large differences in the norms that males and females hold. Females, overwhelmingly, tend to possess norms that are less likely to favor men over women. There are only a few observations in the dataset for which males have a higher norms index score than females. In Taiwan in 1994,for example, males had an average score of 0.403 on the Index of Norms towards Women's Role in society, while females had an average of only 0.383. Even when separating the index averages according to gender, the general trend of increasing scores over time still holds.

The data in Table 3.6 are sorted according to age group. It evident that the gender norms are closer to parity for younger people than they are for older generations. Moreover, as time passes, the norms for all groups move closer to parity as older people pass away and are replaced by the younger, more tolerant, generations of previous years. This is consistent with the view that

young people are generally more tolerant, and that they maintain this tolerance as they age. This leads to the movement of social norms that are closer to parity over time.

Table 3.4: Index of Norms towards Women's Role in Society Scores for Select Countries

Country	(1994-1997)	(1998-2001)	(2002-2008)
OECD			
Australia	0.688		0.746
Canada		0.772	0.780
Germany	0.735		0.752
Finland	0.800		0.775
Japan	0.455	0.518	0.512
New Zealand		0.740	0.780
Sweden	0.862	0.881	0.865
United States	0.679	0.770	0.757
Europe			
Albania		0.528	0.542
Poland	0.513		0.626
Romania		0.430	0.596
Slovenia	0.621		0.733
Turkey	0.481	0.495	0.515
Ukraine	0.499		0.555
Middle East/North Africa			
Egypt		0.283	0.251
Iran		0.387	0.339
Jordan		0.293	0.312
Morocco		0.333	0.486
Sub-Saharan Africa			
Mali			0.325
Nigeria	0.406	0.367	
South Africa	0.591	0.623	0.603
Tanzania		0.655	
Uganda		0.556	
Zambia			0.589
Asia			
Bangladesh	0.412		0.326
China	0.520	0.556	0.508
India	0.569	0.476	0.459
Indonesia		0.584	0.562
Singapore			0.575
Taiwan	0.393		0.558
Thailand			0.554
Latin America			
Argentina	0.657	0.669	0.683
Brazil	0.441		0.686
Chile	0.607	0.619	0.600
Columbia	0.444		0.645
Peru	0.631	0.704	0.703
Venezuela	0.437		0.677

Table 3.5: Norms Index Average Scores for Select Countries by Gender

Country	(1994-1997)		(1998-2001)		(2002-2008)	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
OECD						
Australia	0.645	0.727			0.678	0.800
Canada			0.747	0.788	0.756	0.797
Germany	0.710	0.757			0.704	0.788
Finland	0.765	0.832			0.742	0.806
Japan	0.420	0.486	0.484	0.547	0.469	0.544
New Zealand			0.704	0.768	0.739	0.812
Sweden	0.852	0.873	0.865	0.897	0.849	0.882
United States	0.646	0.710	0.738	0.793	0.716	0.797
Europe						
Albania			0.441	0.614	0.455	0.624
Poland	0.453	0.513			0.582	0.626
Romania			0.366	0.492	0.541	0.641
Slovenia			0.588	0.647	0.713	0.750
Turkey	0.443	0.520	0.457	0.534	0.471	0.561
Ukraine	0.423	0.549			0.450	0.607
Middle East/North Africa						
Egypt			0.243	0.325	0.205	0.280
Iran			0.331	0.453	0.286	0.393
Jordan			0.214	0.369	0.264	0.359
Morocco			0.272	0.394	0.370	0.602
Sub-Saharan Africa						
Mali					0.282	0.370
Nigeria	0.316	0.501	0.280	0.458		
South Africa	0.544	0.638	0.557	0.689	0.520	0.684
Tanzania			0.598	0.728		
Uganda			0.448	0.664		
Zambia					0.527	0.652
Asia						
Bangladesh	0.355	0.491			0.294	0.369
China	0.497	0.546	0.543	0.569	0.488	0.525
India	0.476	0.569	0.417	0.476	0.364	0.459
Indonesia			0.456	0.584	0.425	0.562
Singapore					0.540	0.606
Taiwan	0.403	0.383			0.542	0.573
Thailand					0.530	0.578
Latin America						
Argentina	0.625	0.685	0.622	0.709	0.632	0.727
Brazil	0.394	0.487			0.637	0.721
Chile	0.564	0.643	0.545	0.684	0.528	0.657
Columbia			0.426	0.462	0.613	0.677
Peru	0.581	0.680	0.664	0.741	0.666	0.739
Venezuela	0.591	0.658			0.622	0.732

Table 3.6: Norms Index Average Scores for Select Countries by Age Group

Country	(1994-1997)			(1998-2001)			(2002-2008)		
	29 or Younger	30-59	60 or Older	29 or Younger	30-59	60 or Older	29 or Younger	30-59	60 or Older
OECD									
Australia	0.765	0.703	0.537				0.826	0.788	0.663
Canada				0.817	0.796	0.673	0.808	0.796	0.732
Germany	0.818	0.741	0.617				0.796	0.773	0.701
Finland	0.828	0.809	0.732				0.784	0.793	0.733
Japan	0.580	0.456	0.337	0.668	0.525	0.410	0.625	0.542	0.393
New Zealand				0.831	0.765	0.615	0.841	0.806	0.699
Sweden	0.867	0.886	0.796	0.889	0.900	0.824	0.881	0.882	0.829
United States	0.743	0.720	0.577	0.798	0.781	0.692	0.790	0.772	0.701
Europe									
Albania				0.571	0.525	0.467	0.627	0.532	0.445
Poland				0.608	0.493	0.378	0.661	0.611	0.517
Romania				0.481	0.433	0.362	0.643	0.613	0.530
Slovenia	0.720	0.610	0.533				0.788	0.756	0.631
Turkey	0.520	0.469	0.380	0.531	0.483	0.419	0.542	0.507	0.435
Ukraine	0.518	0.501	0.474				0.560	0.560	0.529
Middle East/North Africa									
Egypt				0.308	0.269	0.274	0.265	0.251	0.223
Iran				0.422	0.365	0.291	0.366	0.316	0.274
Jordan				0.306	0.294	0.234	0.302	0.316	0.323
Morocco				0.357	0.311	0.290	0.532	0.475	0.348
Sub-Saharan Africa									
Mali							0.342	0.328	0.280
Nigeria	0.405	0.405	0.430	0.365	0.366	0.414			
South Africa	0.636	0.575	0.534	0.644	0.625	0.547	0.615	0.605	0.565
Tanzania				0.655	0.672	0.553			
Uganda				0.569	0.540	0.567			
Zambia							0.567	0.629	0.593
Asia									
Bangladesh	0.474	0.376	0.357	0.357	0.306	0.300			
China	0.567	0.502	0.494	0.635	0.533	0.586	0.580	0.492	0.502
India	0.545	0.500	0.516	0.490	0.420	0.426	0.427	0.407	0.330
Indonesia				0.529	0.516	0.536	0.496	0.483	0.505
Singapore				0.634	0.536	0.424			
Taiwan	0.433	0.387	0.385				0.639	0.558	0.448
Thailand							0.596	0.552	0.522
Latin America									
Argentina	0.668	0.685	0.575	0.682	0.677	0.627	0.698	0.708	0.602
Brazil	0.456	0.440	0.365				0.706	0.693	0.614
Chile	0.647	0.609	0.502	0.674	0.615	0.533	0.659	0.623	0.452
Columbia	0.453	0.440	0.423				0.647	0.649	0.608
Peru	0.639	0.629	0.587	0.720	0.695	0.680	0.712	0.702	0.672
Venezuela	0.645	0.623	0.541	0.685	0.681	0.610			

Overall, these three tables highlight three things. First, societies across the globe now hold gender norms that are less likely to favor males over females in terms of education,

employment, and leadership opportunities (with the exception of some Asian nations). This pattern holds when the sample is separated by gender and by age group. In addition, females across the world hold gender norms that are notably closer to parity than those held by males. For both males and females, views have become more tolerant over time. Finally, younger generations hold more tolerant views than the older generations in all three time periods examined. All three age groups are less likely to favor males over females by the 2002-2008 period than they were in the 1994-1997 period. The next section conducts a deeper empirical analysis of what might cause these norms to change.

3.4 Empirical Methods and Estimation Results

In chapter two, the EFW score was adjusted based on gender norms, so these social attitude measures need to coincide with, or only slightly precede, the EFW score being adjusted. This chapter examines the impact of economic freedom on the preferences of individuals regarding women's role in the economy using both a contemporaneous measure of economic freedom, and a measure of economic freedom that precedes the WVS data by approximately 10 years. EFW are reported for the years ending in a "5" or "0" prior to 2000, after which scores are available annually. Thus, the contemporaneous measure of economic freedom does not always coincide with the WVS data prior to 2000. When this is the case, economic freedom scores are provided for the year closest to the WVS year. For example, the EFW score from 1995 is used as the contemporaneous value for Taiwan in 1994. The ten-year lagged data is gathered in a similar manner.

The first portion of the regression analysis uses the country-level norms index as the dependent variable in pooled OLS regressions to determine whether economic freedom, per capita income, political institutions, and the percentage of a country's population that is Catholic, Muslim, or non-religious exert a statistically significant impact on gender norms. Specifications are estimated both with and without year and country dummy variables.

After determining which of the macro-level variables impact the prevailing social norms in a country, a micro-level analysis is conducted. The micro-level analysis allows for an examination of individual characteristics that may impact personal attitudes regarding whether males should take priority over females in education, employment, and leadership opportunities.

In addition, the individual-level analysis addresses concerns that measures of economic freedom, per capita income, and political institutions may suffer endogeneity problems.

3.4.1 Country-Level Empirical Analysis of the Determinants of Gender Norms

The macro-level analysis estimates two main regression equations. The first is a one-stage regression that includes all variables simultaneously. Equation 3.1 describes this regression specification. The subscript "j" denotes the country while "t" indicates the year.

$$(3.1) \quad Norms\ Index\ Score_{jt} = \beta_1 + \beta_2 EFW_{jt} + \beta_3 Polity_{jt} + \beta_4 lnPCGDP_{jt} + \beta_5 Islamic\%_{jt} + \beta_6 Catholic\%_{jt} + \beta_7 NonReligious\%_{jt} + \varepsilon_j$$

A positive, causal relationship between economic freedom and per capita income measures has frequently been found in the literature. As such, the coefficient estimates for economic freedom will understate its relationship with gender norms in this first specification because both economic freedom and income are included. To account for the indirect impact that economic freedom may have on gender norms, a two-stage regression model is estimated. In this first stage, the dependent variable is the natural log of per capita income, and the independent variables are economic freedom, political institutions, and the three cultural proxy variables. Equation 3.2 depicts the regression estimated in the first stage.

$$(3.2)\ lnPCGDP_{jt} = \beta_1 + \beta_2 EFW\ Score_{jt} + \beta_3 Polity\ Score_{jt} + \beta_4 Catholic\%_{jt} + \beta_5 Islamic\%_{jt} + \beta_6 NonReligious\%_{jt} + \varepsilon_j$$

The income residuals from equation 3.2 are captured and then used in place of the original income measure in the second stage regression. Equation 3.3 describes this regression model. The coefficient estimates from this regression will provide coefficients that more accurately reflect the total impact of the explanatory variables. That is, the coefficient on economic freedom will reflect both the direct impact of economic freedom, as well as the indirect impact of economic freedom that operates through income.

(3.3) $Norms\ Index\ Score_t = \beta_1 + \beta_2 EFW_{jt} + \beta_3 Polity_{jt} + \beta_4 lnPCGDP\ Residuals_{jt} + \beta_5 Islamic\%_{jt} + \beta_6 Catholic\%_{jt} + \beta_7 NonReligious\%_{jt} + \varepsilon_j$

Table 3.7 and Table 3.8 present the results of estimating equations 3.1 through 3.3.

Table 3.7: Macro-Level OLS Stage One Regression Results (Independent and Dependent Variables are Contemporaneous)

Dependent Variable: Log Per Capita Income	
EFW Current	0.4181***
	(0.0736)
Polity Current	0.0620**
	(0.0239)
Islam Percent of Pop.	-0.2052
	(0.4465)
Catholic Percent of Pop.	0.1136
	(0.3151)
Non-Religious Percent of Pop.	1.9752***
	(0.6467)
Observations	120
Countries	67
Adjusted R-Squared	0.5148

Bootstrapped standard errors[29] are reported in parentheses.
Significance levels: p<0.01 ***, p<0.05 **, and p<0.10 *

Odd numbered columns provide the results of the one-stage regression, while the even numbered columns provide the two-stage regression results. Economic freedom and per capita income have a positive relationship with norms towards women's role in society in both of the baseline estimates shown in columns 1 and 2. While the measure of democratic political institutions is also positively associated with the norms index, it is only significant in the two-stage regression. As anticipated, the percentage of a country's population that practices Islam has a negative relationship with the index of gender norms. Neither of the two remaining religious variables had a significant impact on gender norms.

[29] For all results presented in Table 3.5 and Table 3.6, additional specifications were run using robust standard errors clustered around each country. There are no major differences in the significance of the independent variables using these alternative standard errors.

Table 3.8: Results of OLS Estimation at the Macro Level (Independent and Dependent Variables are Contemporaneous)

Dependent Variable: Index of Norms Towards Women's Role in Society						
	All Countries		**High Income**		**Low Income**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
EFW Current	0.0246***	0.0432***	0.0032	0.0675***	0.0085	0.0166
	(0.0094)	(0.0077)	(0.0254)	(0.0174)	(0.0127)	(0.0132)
Polity Current	0.0029	0.0057***	0.0092	0.0188	0.0037	0.0049*
	(0.0020)	(0.0021)	(0.0151)	(0.0134)	(0.0025)	(0.0025)
Log Per Capita Current	0.0444***	0.0444***	0.1539***	0.1539***	0.0193	0.0193
	(0.0128)	(0.0128)	(0.0578)	(0.0578)	(0.0158)	(0.0158)
Islam Percent of Pop.	-0.1448***	-0.1539***	0.2763	0.2447	-0.1208***	-0.1247***
	(0.0372)	(0.0372)	(0.7018)	(0.7087)	(0.0355)	(0.0354)
Catholic Percent of Pop.	0.0206	0.0257	0.0716	0.0891	0.0642*	0.0664
	(0.0505)	(0.0339)	(0.0656)	(0.0671)	(0.0383)	(0.0377)
Non-Religious Percent of Pop.	-0.0319	0.0558	0.0021	0.3060*	0.2411	0.2792*
	(0.1215)	(0.0881)	(0.1448)	(0.1660)	(0.1585)	(0.1608)
Observations	120	120	54	54	66	66
Countries	67	67	31	31	36	36
Adjusted R-Squared	0.5261	0.5261	0.3882	0.3882	0.4849	0.4849

	2000 and Earlier		**After 2000**		**Male Population**		**Female Population**	
	(7)	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**
EFW Current	0.0214*	0.0428***	0.0021	0.0233	0.0280***	0.0490***	0.2260**	0.0379***
	(0.0120)	(0.0112)	(0.0149)	(0.0143)	(0.0093)	(0.0079)	(0.0102)	(0.0081)
Polity Current	0.0025	0.0057	0.0030	0.0061**	0.0029	0.0060***	0.0031	0.0053**
	(0.0045)	(0.0042)	(0.0026)	(0.0026)	(0.0021)	(0.0022)	(0.0022)	(0.0022)
Log Per Capita Current	0.0513**	0.0513**	0.0506***	0.0506***	0.0501***	0.0501***	0.0365***	0.0365***
	(0.0220)	(0.0220)	(0.0168)	(0.0168)	(0.0129)	(0.0129)	(0.0137)	(0.0137)
Islam Percent of Pop.	-0.1243*	-0.1348**	-0.1702***	-0.1806***	-0.1592***	-0.1695***	-0.1259***	-0.1334***
	(0.0677)	(0.0670)	(0.0442)	(0.0445)	(0.0391)	(0.0391)	(0.0385)	(0.0386)
Catholic Percent of Pop.	-0.0056	0.0003	0.0709	0.0767	0.0279	0.0336	0.0129	0.0171
	(0.0548)	(0.0539)	(0.0481)	(0.0474)	(0.0350)	(0.0345)	(0.0353)	(0.0348)
Non-Religious Percent of Pop.	-0.0508	0.0506	-0.0261	0.0738	-0.0600	0.0390	-0.0193	0.0527
	(0.1130)	(0.1065)	(0.1711)	(0.1598)	(0.1005)	(0.0933)	(0.0926)	(0.0867)
Observations	55	55	65	65	120	120	120	120
Countries	46	46	56	56	67	67	67	67
Adjusted R-Squared	0.4033	0.4033	0.6148	0.6148	0.5653	0.5653	0.4407	0.4407

Bootstrapped standard errors are reported in parentheses. Significance levels: p<0.01 ***, p<0.05 **, and p<0.10 *

The data were next divided into different subcategories, and equations 3.1 through 3.3 were estimated on these subsets of the data to determine if the relationships found in the baseline estimates hold under different conditions. Columns 3 and 4 provide the results of the regressions estimated on the subset of countries designated as "High Income" by the World Bank. Next, columns 5 and 6 present the results of estimating the same equations on the subset of countries that do not have a high income designation. Table B.1 in the appendix provides the list of countries falling into the high and lower income categories. Both economic freedom and per capita income remain positive and significant for the high-income countries, but seem to have no relationship with gender norms scores for lower income countries. On the other hand, neither political institutions nor the percentage of the population that practices Islam has any impact on gender norms in high-income nations, but both maintain the relationships with gender norms for lower income countries.

Columns 7 and 8 provide the results of estimating equations 3.1 through 3.3 on only the set of observations occurring in the year 2000 or earlier, while columns 9 and 10 show the same for the years 2001 and beyond. The measure of per capita income and the percentage of the population that practice Islam both maintain the relationships with gender norms that they exhibited in the baseline results. Economic freedom is only positive and significant in the earlier period, while political institutions are only significant in the later period.

The final four columns present the results of estimating equations 3.1 -3.3 using the average norms index score for males (columns 11 and 12) and the average score for females (columns 13 and 14). These gender index scores are equivalent to the country-level norms score average for all males in the sample and then for all females in the sample. The relationships found in the baseline estimates between economic freedom, political institutions, per capita income, and the percentage of the population that is Muslim and gender norms persists when looking at both the male and female norms index averages.

There may be a considerable time lag before changes in economic institutions impact personal preferences towards gender discrimination. Equations 3.1 through 3.3 are re-estimated using measures of the EFW score, per capita income, and political institutions that precede the norms index scores by a decade. These lagged variables are expected to exhibit the same pattern of results as the contemporaneous variables.

Tables 3.9 and 3.10 present these regression estimates. Odd numbered columns show the results of the one-stage regressions, while the two-stage regression results are reported in the even numbered columns. The pattern of the estimates is nearly identical to those with contemporaneous dependent and independent variables. However, the magnitudes of the coefficients on economic freedom are slightly lower than the coefficients in the estimates using contemporaneous variables. Depending on the specification, a one point increase economic freedom ten years prior, results in an increase in the current gender norms index score of anywhere between 0.0126 to 0.0442 points. A parallel increase in the contemporaneous economic freedom measure results in an increase in the norms index between 0.0214 and 0.0675. Past economic freedom is a significant factor on gender norms in the years 2000 and prior, as well as the later period. The contemporaneous measure, however, was not a significant determinant of gender norms in the more recent period.

Table 3.9: Macro-Level OLS Stage One Regression Results

Dependent Variable: Log Per Capita Income 10 Years Prior	
EFW Prior	0.3620***
	(0.0638)
Polity Prior	0.0317**
	(0.0158)
Islam Percent of Pop.	-0.4588
	(0.4385)
Catholic Percent of Pop.	0.2942
	(0.3535)
Non-Religious Percent of Pop.	1.6352*
	(0.8682)
Observations	117
Countries	65
Adjusted R-Squared	0.5455

Bootstrapped standard errors are reported in parentheses.
Significance levels: p<0.01 ***, p<0.05 **, and p<0.10 *

Some other robustness checks were also run. First, all models presented here were estimated with and without time and country dummy variables. The inclusion of the time dummy variables did not alter the pattern of results in any meaningful way. All six explanatory variables have the same signs and significance as when year dummy variables are not included. A one-

Table 3.10: Results of OLS Estimation at the Macro Level (Key Dependent Variables are Lagged by 10 Years)

Dependent Variable: Index of Norms Towards Women's Role in Society						
	All Countries		**High Income**		**Low Income**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
EFW Prior	0.0126*	0.0240***	-0.0034	0.0442***	0.0034	0.0091
	(0.0076)	(0.0069)	(0.0162)	(0.0139)	(0.0109)	(0.0109)
Polity Prior	0.0057***	0.0067***	0.0082***	0.0123***	0.0026	0.0031
	(0.0017)	(0.0017)	(0.0025)	(0.0027)	(0.0019)	(0.0020)
Log Per Capita Income Prior	0.0314**	0.0314**	0.1313***	0.1313***	0.0159	0.0159
	(0.0135)	(0.0135)	(0.0375)	(0.0375)	(0.0138)	(0.0138)
Islam Percent of Pop.	-0.1499***	-0.1643***	0.1114	0.0511	-0.1374***	-0.1447***
	(0.0333)	(0.0335)	(0.4845)	(0.4896)	(0.0331)	(0.0328)
Catholic Percent of Pop.	0.0182	0.0275	0.0698	0.1085*	0.0578	0.0624*
	(0.0341)	(0.0326)	(0.0594)	(0.0585)	(0.0380)	(0.0369)
Non-Religious Percent of Pop.	0.0188	0.0702	-0.0192	0.1956	0.2059	0.2319
	(0.0948)	(0.0923)	(0.1154)	(0.1257)	(0.1575)	(0.1620)
Observations	117	117	51	51	66	66
Countries	65	65	29	29	36	36
Adjusted R-Squared	0.5506	0.5506	0.4880	0.4880	0.4693	0.4693
	2000 and Earlier		**After 2000**		**Male Population**		**Female Population**	
	(7)	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**
EFW Prior	0.0078	0.0222*	0.0014	0.0207**	0.0155**	0.0279***	0.0113	0.0207***
	(0.0131)	(0.0116)	(0.0105)	(0.0090)	(0.0077)	(0.0069)	(0.0080)	(0.0074)
Polity Prior	0.0082***	0.0095***	0.0003	0.0019	0.0061***	0.0072***	0.0053***	0.0062***
	(0.0026)	(0.0025)	(0.0027)	(0.0025)	(0.0015)	(0.0016)	(0.0018)	(0.0018)
Log Per Capita Prior	0.0397*	0.0397*	0.0534***	0.0534***	0.0343**	0.0343**	0.0260*	0.0260*
	(0.0211)	(0.0211)	(0.0178)	(0.0178)	(0.0139)	(0.0139)	(0.0137)	(0.0137)
Islam Percent of Pop.	-0.0863*	-0.1045*	-0.1967***	-0.2212***	-0.1651***	-0.1808***	-0.1311***	-0.1430***
	(0.0496)	(0.0569)	(0.0435)	(0.0465)	(0.0330)	(0.0333)	(0.0365)	(0.0366)
Catholic Percent of Pop.	-0.0063	0.0054	0.0646	0.0803	0.0271	0.0372	0.0098	0.0175
	(0.0561)	(0.0449)	(0.0485)	(0.0465)	(0.0354)	(0.0337)	(0.0345)	(0.0331)
Non-Religious Percent of Pop.	0.0564	0.1213	-0.0309	0.0564	-0.0062	0.0498	0.0268	0.0693
	(0.0989)	(0.1214)	(0.1650)	(0.1607)	(0.1059)	(0.1012)	(0.0900)	(0.0891)
Observations	52	52	65	65	117	117	117	117
Countries	43	43	56	56	65	65	65	65
Adjusted R-Squared	0.5041	0.5041	0.6148	0.6148	0.5896	0.5896	0.4652	0.4652

Bootstrapped standard errors are reported in parentheses. Significance levels: p<0.01 ***, p<0.05 **, and p<0.10 *

point increase in the EFW score (approximately one standard deviation) is associated with an increase in the social norms index score of anywhere between 0.0284 and 0.0756 points. The inclusion of country dummy variables renders all explanatory variables, including the country dummies, insignificant.

In addition, alternative country-level variables were included in several regressions. Freedom House's measures of political institutions, civil liberties, and media freedom were all included in the preliminary analysis, but these variables had weaker explanatory power than the measures used in the main regression results. The six country-level explanatory variables were also included in alternative specifications in various combinations to determine whether any multicollinearity issues are present. This exercise did not alter the main results in any meaningful way. The estimated coefficients did not fluctuate in a way indicative of multicollinearity. These exercises increase the confidence in the relationships presented in Tables 3.7 through 3.10

3.4.2 Individual-Level Empirical Analysis of the Determinants of Gender Norms

Following the strategies of Pitlik and Rode (2014) and Alesina et al. (2013), an individual-level analysis is conducted to address endogeneity concerns. This micro-level analysis controls for the country-level variables found to be significant in the previous section, as well as a number of individual factors. Table 3.11 lists and describes the variables included in the individual-level analysis, as well as indicates the data sources. While economic freedom, political institutions, average per capita income level, and other country-level factors may be impacted by the prevailing social attitudes towards women, they are not impacted by the beliefs held by any single individual. Economic institutions, political institutions, and average development level are determined in a manner that is exogenous to the individual. In this way, the micro-level analysis mitigates concerns about the direction of causality in any relationships found between the country-level variables and an individual's view regarding whether males should be favored over females in education, employment, and leadership opportunities.

Table 3.11: Descriptions and Sources of Micro-Level Variables

Dependent Variable	Description	Source
Index of Norms Towards Women's Role in Society	This measure reflects social attitudes regarding whether males should take priority over women in education, employment, and leadership roles. It reflects the average of an individual's opinion on three questions in the World Values Survey.	Author's calculations using World Values Survey Data (2008)
	Country-Level Independent Variables	
EFW (Contemporaneous and 10 Years Prior)	A measure of the extent to which a country possesses institutions consistent with economic freedom. A score of "0" indicates that a country is not economically free and has centrally planned economic institutions. A score of "10" indicates that a country possesses economic institutions that protect property rights, allow for individual choice, and allow market forces to operate.	Freedom of the World Index, Gwartney et al. (2014)
Polity (Contemporaneous and 10 Years Prior)	This measures the extent to which a country's political institutions are democratic. A score of " -10 "indicates an authoritarian government, while "10" indicates a stable, democratic government.	Polity IV, Marshall et al. (2013).
Log Per Capita (Contemporaneous and 10 Years Prior)	The natural log of per capita GDP measured in constant 2005 international dollars.	Heston, A., Summers, R., and Aten, B. (2011). Penn World Tables.
Islam Percent of Population	The percentage of a country's population that identifies as being a member of the Islamic faith.	Maoz, Z. and Henderson, E. A. (2013). World Religion Dataset
Micro-Level Controls- from the World Value Survey 1981-2008. Longitudinal Aggregate Data.		
Female	Equals"1" if the individual is female and "0" if they are male.	
Married	Equals"1" if the individual has ever been married, and equals "0" if otherwise.	
Middle Age Dummy	Equals"1" if the individual is between 30 and 59 years of age, and "0" if otherwise.	
Old Age Dummy	Equals"1" if the individual is aged 60 year or older, and "0" if otherwise.	
God Important	The individual ranks how important God and religion are in their life. A score of "0" means that God/religion are not at all important, while "10" means that God/religion plays a major role in the individual's life.	
Catholic Dummy	Equals"1" if the individual is a member of the Catholic faith, and "0" if otherwise.	
Islam Dummy	Equals"1" if the individual is a member of the Islamic faith, and "0" if otherwise.	
Income Level	The individual is asked to choose which income decile they think they belong in. Income decile "1" is the lowest decile, and "10" is the highest[30].	
Social Class	The individual is asked to designate their perceived social class. They are to choose "1" if they are lower class, "2" if working class, "3" if lower middle class, "4" if upper middle class, and "5" if upper class[31].	
College	Equals"1" if the individual attended college or the equivalent for any amount of time. The individual receives a score of "0" if they did not attend college.	
Employed	Equals"1" if the individual is currently employed part-time, full-time, or self employed. If otherwise, the individual receives a "0" score.	

[30] This is entirely a perceptions-based measure, and the deciles are not associated with a specific income range.
[31] This is entirely a perceptions-based measure

Table 3.12: Micro-Level Summary Statistics

	Observations	Mean	Standard Deviation	Minimum	Maximum
C001	194,378	0.5181	0.4997	0	1
D059	203,015	0.4814	0.3253	0	1
D060	207,655	0.6576	0.3051	0	1
Norms Index	161,087	0.5518	0.2970	0	1
EFW Current	100,219	6.5147	1.2002	3.31	8.93
EFW Prior	185,755	5.7366	1.4224	2.61	9.14
Polity Current	197,967	5.7251	5.3315	-7	10
Polity Prior	195,941	2.7674	6.8852	-9	10
PC GDP Current	200,309	12,793.52	11,353.82	785.27	48,526.38
PC GDP Prior	195,062	10,707.15	9,302.19	523.95	42,305.11
Log PC GDP Current	200,309	9.0068	1.0343	6.6660	10.7899
Log PC GDP Prior	195,062	8.8195	1.0704	6.2614	10.6527
Catholic Percent of Population	197,967	0.2976	0.3497	0	0.97
Islamic Percent of Population	197,967	0.2194	0.3608	0	1.00
Non-Religious Percent of Population	197,967	0.0923	0.1315	0	0.63
Female	252,941	0.5155	0.4998	0	1
Married	253,001	0.7499	0.4330	0	1
Social Class	202,706	2.6543	0.9888	1	5
College	230,283	0.2140	0.4101	0	1
Employed	110,518	0.7898	0.4075	0	1
Income Level	226,003	4.512	2.3923	1	10
God Important	240,112	7.7445	3.0186	1	10
Catholic Dummy	203,283	0.3265	0.4689	0	1
Islamic Dummy	203,036	0.2151	0.4109	0	1
Young Age Dummy	257,597	0.2966	0.4567	0	1
Middle Age Dummy	257,597	0.5260	0.4993	0	1
Old Age Dummy	257,597	0.2501	0.4330	0	1

The descriptive statistics for the individual-level variables are provided in Table 3.12, while Table 3.13 depicts the matrix of correlation coefficients. The correlation matrix shows that the correlations between the index of gender norms and the four macro-level variables have the same sign as they did in Table 3.3. In addition, there are relatively high correlations between economic freedom, income, and political institutions (from 0.3570 and 0.5916). Thus, a two-stage regression similar to the one estimated at the macro-level is also estimated at the micro-level to ensure that the estimates do not suffer from multicollinearity issues. None of the individual-level control variables have high correlation coefficients, thus multicollinearity is less of a concern for the micro-level controls.

The micro-level regression specifications are identical to equations 3.1 through 3.3, with the addition of a vector of individual control variables. This set of control variables captures

characteristics specific to each individual surveyed. Equation 3.4 describes the main micro-level regression specification, a one-stage OLS regression. Because both economic freedom and per capita income are included in this specification, the estimated coefficient on the EFW score will understate the true impact of economic freedom. This is because economic freedom has an indirect impact on norms operating through income.

$$(3.4) \quad Norms\ Index\ Score_{ijt} = \beta_1 + \beta_2 EFW_{jt} + \beta_3 Polity_{jt} + \beta_4 lnPCGDP_{jt} + \beta_5 Islamic\%_{jt} + \beta_6 Individual\ Controls_{ijt} + u_j + \varepsilon_i$$

To account for the complication of this indirect effect, the second specification is a two-stage OLS estimation. In the first stage, three main country-level variables (EFW score, Polity score, and Islamic percentage of the population) are used to estimate the natural log of a country's per capita income. This relationship is depicted in equation 3.5.

$$(3.5)\ ln\ PC\ GDP_{ijt} = \beta_1 + \beta_2 EFW_{jt} + \beta_3 Polity_{jt} + \beta_4 Islamic\%_{jt} + u_j$$

The residuals are captured from the first stage and used in the next. The second stage equation is nearly identical to the specification in equation 3.4 but with the income residuals used in place of the original per capita income measure.

$$(3.6)\ Norms\ Index\ Score_{ijt} = \beta_1 + \beta_2 EFW_{jt} + \beta_3 Polity_{jt} + \beta_4 ln\ PC\ GDP\ Residuals_{jt} + \beta_5 Islamic\%_{jt} + \beta_6 Individual\ Controls_{ijt} + u_j + \varepsilon_i$$

Table 3.14 and Table 3.15 present the results of estimating equations 3.4 through 3.6. The odd numbered columns present the one-stage regressions, while the even numbered columns present the two-stage regressions. The baseline estimates presented in columns 1 and 2 run both specifications on the entire sample (129,044 observations) without including any of the individual-level controls. Columns 3 and 4 present the results of running the regressions on the entire sample with the inclusion of the individual-level controls. As with the macro-level analysis, the sample is then divided into various subcategories to determine the robustness of the baseline estimates.

First, the sample is divided into the set of countries with a "high income" designation and those without the designation. Those results are presented in columns 5 through 8. Columns 9 and 10 present the results of estimating equations 3.4 through 3.6 on the observations occurring in the year 2000 or earlier, while the observations occurring in 2001 or later are presented in columns 11 and 12. The results from examining just the male observations are presented in columns 13 and 14, while the female observations are examined in columns 15 and 16. Finally, the results of dividing the sample according to the three different age groups are presented in columns 17 through 22.

The results of the micro-level analysis provide evidence that all four of the country-level variables have the expected relationship with the index of gender norms. Higher EFW scores are associated with gender norms closer to parity in almost all specifications. An increase in the economic freedom score of one point is associated with an increase in the norms index of between 0.0190 and 0.0545 points. As columns 5 through 8 illustrate, this positive relationship holds for high-income countries, but there is no apparent relationship between economic freedom and gender norms in lower income countries. While economic freedom tends to exert a positive impact on the index of gender norms in the earlier time period (columns 9 and 10), the relationship is insignificant for the more recent period (columns 11 and 12). All of these results are consistent with the macro-level findings presented in the previous section.

The measure of per capita income has a positive and statistically significant relationship with norms index scores in most regressions. This indicates that wealthier societies have norms that are less likely to favor males in education, employment, and leadership opportunities. This result is robust to all subdivisions of the data set, with the exception of when the sample is restricted to just lower income countries.

As with economic freedom, democratic political institutions are associated with a higher score on the Index of Social Norms towards Women's Role in Society. This is consistent with the view that inclusive institutions that limit the ability for the central authority to expropriate property lead to norms that are associated with greater gender parity. This relationship is unaffected by the inclusion of individual-level control variables, or by the division of the sample along various dimensions. The measure of political institutions maintains significance in 21 out

Table 3.13: Pairwise Correlation Coefficients for Micro-Level Variables

	C001-Jobs	*D059-Leadership*	*D060-Education*	*Norms Index*	*EFW Current*	*EFW Prior*	*Polity Current*	*Polity Prior*	*Log Per Capita Income Current*	*Log Per Capita Income Prior*
C001-Jobs	1.0000									
D059-Leadership	0.4257	1.0000								
D060-Education	0.3320	0.4145	1.0000							
Norms Index	0.8378	0.7632	0.6980	1.0000						
EFW Current	0.1879	0.2153	0.1369	0.2725	1.0000					
EFW Prior	0.2154	0.2293	0.1418	0.2955	0.7278	1.0000				
Polity Current	0.2694	0.2678	0.1343	0.3352	0.3570	0.4303	1.0000			
Polity Prior	0.2151	0.2947	0.1583	0.3198	0.5089	0.4904	0.5680	1.0000		
Log Per Capita Income Current	0.2602	0.2857	0.1853	0.3546	0.5916	0.6971	0.4598	0.4593	1.0000	
Log Per Capita Income Prior	0.2642	0.2755	0.1780	0.3497	0.4969	0.6696	0.4834	0.4264	0.9694	1.0000
Islamic Percent of Pop.	-0.3238	-0.2795	-0.1338	-0.3694	-0.2234	-0.2774	-0.5175	-0.2854	-0.3815	-0.3814
Female	0.1279	0.1395	0.1162	0.1772	0.0153	0.0242	0.0148	0.0006	0.0329	0.0365
Married	-0.0668	-0.0289	-0.0457	-0.0624	0.0081	0.0430	0.0511	0.0143	0.0363	0.0355
Social Class	0.0666	0.0627	0.0676	0.0877	0.0946	0.1136	0.0377	0.0870	0.1182	0.1071
College	0.1304	0.0930	0.1059	0.1530	0.0399	0.0615	0.0611	0.0577	0.0664	0.0675
Employed	0.0614	0.0309	0.0240	0.0583	-0.0108	0.0312	-0.0340	-0.0353	0.0112	0.0071
Income Level	0.1135	0.0818	0.0831	0.1353	0.1319	0.1247	0.0176	0.0513	0.0993	0.0908
God Important	-0.1869	-0.1422	-0.0754	-0.2149	-0.1642	-0.2968	-0.2097	-0.1132	-0.3302	-0.3301
Catholic Dummy	0.1541	0.1625	0.0633	0.1732	0.0292	-0.0152	0.2178	0.0847	0.1914	0.2033
Islam Dummy	-0.2616	-0.2375	-0.1065	-0.2924	-0.1202	-0.1322	-0.3939	-0.3072	-0.2923	-0.3097
Young Dummy	0.0344	-0.0000	0.0250	0.0217	-0.0727	-0.1260	-0.0954	-0.0629	-0.1229	-0.1220
Middle Age Dummy	-0.0088	0.0057	0.0051	0.0025	-0.0035	0.0219	0.0063	-0.0017	0.0080	0.0037
Old Age Dummy	-0.0326	-0.0080	-0.0399	-0.0251	0.0993	0.1358	0.1151	0.0842	0.1477	0.1533

Table 3.13- Continued

	Islamic Percent of Pop.	*Female*	*Married*	*Social Class*	*College*	*Employed*	*Income Level*	*God Important*	*Catholic Dummy*	*Islam Dummy*	*Young Dummy*	*Middle Age Dummy*	*Old Age Dummy*
Islamic Percent of Pop.	1.0000												
Female	-0.0184	1.0000											
Married	-0.0425	0.0796	1.0000										
Social Class	0.0469	-0.0002	-0.0591	1.0000									
College	-0.0462	-0.0407	-0.0943	0.2830	1.0000								
Employed	-0.0668	-0.2528	0.0637	0.0751	0.13789	1.0000							
Income Level	-0.0144	-0.0399	-0.0182	0.4368	0.2728	0.1821	1.0000						
God Important	0.2908	0.0877	-0.0176	-0.0340	-0.0757	-0.1072	-0.1156	1.0000					
Catholic Dummy	-0.4230	0.0171	-0.0209	-0.0284	0.0063	0.0225	-0.0386	0.0117	1.0000				
Islam Dummy	0.7686	-0.0344	-0.0204	0.0334	-0.0481	-0.0446	-0.0202	0.2153	-0.3645	1.0000			
Young Dummy	0.0963	-0.0043	-0.5606	0.0544	0.0474	-0.0958	0.0130	0.0500	-0.0258	0.0822	1.0000		
Middle Age Dummy	-0.0188	0.0059	0.3837	-0.0115	0.0157	0.2811	0.0644	-0.0171	-0.0207	0.0180	-0.6840	1.0000	
Old Age Dummy	-0.0988	-0.0026	0.1694	-0.0538	-0.0843	-0.2554	-0.1030	-0.0378	0.0573	-0.1207	-0.3015	-0.4892	1.0000

of the 22 regressions in Table 3.15. A one-unit increase in a country's Polity IV score is associated with an increase in gender norms index scores of between 0.0048 and 0.0244 points.

The percentage of a country's population that practices Islam has a negative relationship with the measure of gender norms.[32] This is consistent with the view that individuals living in a predominantly Islamic culture generally possess gender norms that promote the economic and political position of men over women. This is true even after controlling for whether or not the individual is a Muslim. In contrast, the individual-level Islam dummy variable is never significant. This implies that it is the prevailing Islamic culture at the macro-level that matters, and not an individual's beliefs. This suggests, for example, that a Muslim living in Norway would be less inclined to promote males over females than a non-Muslim living in Egypt.

Many of the individual-level control factors have significant relationships with the norms index. The "Female" dummy variable has a positive and highly significant relationship with the gender norms index in nearly every specification estimated. Being female increases an individual's score on the gender norms index between 0.0827 and 0.1319 points. These findings are not surprising. Females are not likely to benefit from possessing gender norms that promote males over females in education, employment, and leadership opportunities. They are also less likely to perceive members of their own sex as inferior, or incapable of performing as well as a male in these positions.

The results of these regressions are also consistent with the idea that individuals with higher levels of educational attainment are more likely to possess gender attitudes that do not favor one gender over another. Attending college (for any amount of time) is associated with an increase in an individual's norms index score of anywhere between 0.0378 and 0.0745 points. This result is robust to each of the different subdivisions of the sample.

Further, an individual that is an employed member of the workforce is more inclined to have gender attitudes closer to equality. Being employed is associated with an increase in the social norms index score of between 0.0125 and 0.0568 points. This result holds no matter how the sample is divided. This result is consistent with the view that regular interactions between

[32] The percentage of the population that practices Catholicism, and the percentage of the population that is not religious, have no overall impact an individual's score on the gender norms index at the macro level, and are not significant at the individual level with any regularity. Thus, these variables are not reported in the main results at the micro level. They remain in the country-level tables to provide evidence of their insignificance.

individuals of both genders in an employment setting reduce social distance between these two groups and facilitates greater gender equality.

Other individual-level variables consistently have a negative relationship with the gender norms index scores. For example, being currently married or having been married at some point in the past, is associated with a decrease in the gender norms index score of between 0.022 and 0.0721 points. A marriage partnership allows for household and professional duties to be divided between both parties. For many couples, division of labor based upon traditional gender roles may make the most sense. Individuals who are married may be more likely to fulfill traditional gender roles, with women performing most of the household and caregiving duties and men performing most of the production outside of the home. Such a division of labor along gender lines may reinforce norms that promote males over females when it comes to opportunities for employment, leadership, and education.

Table 3.14: First-Stage OLS Regression Results
(Key Dependent Variables are Contemporaneous)

Dependent Variable: Log Per Capita Income	
EFW Summary	0.4082***
	(0.0796)
Polity Current	0.0463*
	(0.0246)
ISPCT	-0.4261
	(0.3935)
Observations	196,965
Countries	67
Adj. R-Squared	0.4435

Bootstrapped standard errors are reported in parentheses.
Significance levels: p<0.01 ***, p<0.05 **, and p<0.10 *

Belonging to the group of individuals that are 60 years or older is also negatively associated with the gender norms index score. This is not surprising giving the pattern of the country-level data presented in Table 3.6, which shows that younger generations possess gender norms that are much closer to parity than older generations. Being a member of the oldest age group is associated with a decrease in norms index scores of between 0.0213 and 0.0996 points. Individuals between the ages of 30 and 59 also tend to exhibit greater disparity in gender norms

Table 3.15: Results of OLS Estimation at the Individual Level (Key Dependent Variables are Contemporaneous)

Dependent Variable: Index of Social Norms Towards Women's Role in Society								
	Baseline Estimate		**All Countries**		**High Income**		**Low Income**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
EFW Current	0.0196*	0.0390***	0.0190*	0.0330***	-0.0027	0.0545***	0.0067	0.0161
	(0.0101)	(0.0087)	(0.0108)	(0.0084)	(0.0196)	(0.0083)	(0.0135)	(0.0133)
Polity Current	0.0053**	0.0075***	0.0076**	0.0092***	0.0179***	0.0244***	0.0066*	0.0077**
	(0.0025)	(0.0025)	(0.0030)	(0.0032)	(0.0043)	(0.0044)	(0.0034)	(0.0036)
Log Per Capita Current	0.0477***	0.0477***	0.0344**	0.0344**	0.1401***	0.1401***	0.0229	0.0229
	(0.0133)	(0.0133)	(0.0137)	(0.0137)	(0.0416)	(0.0416)	(0.0164)	(0.0164)
Islam Percent of Pop.	-0.1665***	-0.1868***	-0.1082***	-0.1228***	0.1696	0.1099	-0.1233***	-0.1330***
	(0.0337)	(0.0323)	(0.0388)	(0.0364)	(0.4583)	(0.4620)	(0.0410)	(0.0384)
Female			0.1150***	0.1150***	0.0827***	0.0827***	0.1319***	0.1319***
			(0.0071)	(0.0071)	(0.0080)	(0.0080)	(0.0083)	(0.0083)
Married			-0.0476***	-0.0476***	-0.0347***	-0.0347***	-0.0525***	-0.0525***
			(0.0056)	(0.0056)	(0.0060)	(0.0060)	(0.0071)	(0.0071)
Middle Age Dummy			-0.0127***	-0.0127***	-0.0358***	-0.0358***	-0.0061	-0.0061
			(0.0044)	(0.0044)	(0.0070)	(0.0070)	(0.0050)	(0.0050)
Old Age Dummy			-0.0455***	-0.0455***	-0.0996***	-0.0996***	-0.0213**	-0.0213**
			(0.0083)	(0.0083)	(-0.0113)	(-0.0113)	(0.0085)	(0.0085)
God Important			-0.0077***	-0.0077***	-0.0091	-0.0091	-0.0019	-0.0019
			(0.0029)	(0.0029)	(0.0023)	(0.0023)	(0.0037)	(0.0037)
Catholic Dummy			0.0170	0.0170	0.0123	0.0123	0.0335	0.0335
			(0.0188)	(0.0188)	(0.0255)	(0.0255)	(0.0262)	(0.0262)
Islam Dummy			-0.0298	-0.0298	-0.0448	-0.0448	-0.0202	-0.0202
			(0.0296)	(0.0296)	(0.0390)	(0.0390)	(0.0310)	(0.0310)
Income Level			0.0072***	0.0072***	0.0048**	0.0048**	0.0077**	0.0077**
			(0.0021)	(0.0021)	(0.0018)	(0.0018)	(0.0030)	(0.0030)
Social Class			0.0061**	0.0061**	0.0036	0.0036	0.0060	0.0060
			(0.0028)	(0.0028)	(0.0035)	(0.0035)	(0.0037)	(0.0037)
College			0.0604***	0.0604***	0.0475***	0.0475***	0.0628***	0.0628***
			(0.0062)	(0.0062)	(0.0074)	(0.0074)	(0.0085)	(0.0085)
Employed			0.0372***	0.0372***	0.0217***	0.0217***	0.0414***	0.0414***
			(0.0064)	(0.0064)	(0.0052)	(0.0052)	(0.0084)	(0.0084)
Observations	129,044	129,044	80,230	80,230	25,029	25,029	55,201	55,201
Countries	67	67	60	60	26	26	34	34
R-Squared	0.1963	0.1963	0.2673	0.2673	0.1987	0.1987	0.1926	0.1926

Bootstrapped standard errors are reported in parenthesis for the two-stage specifications. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 3.15- Continued

Dependent Variable: Index of Social Norms Towards Women's Role in Society								
	2000 and Earlier		**After 2000**		**Male Population**		**Female Population**	
	(9)	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**
EFW Current	0.0200	0.0368***	-0.0303*	-0.0113	0.0176	0.0351***	0.0204**	0.0311***
	(0.0127)	(0.0091)	(0.0171)	(0.0180)	(0.0118)	(0.0146)	(0.0102)	(0.0081)
Polity Current	0.0096**	0.0115***	0.0048	0.0070**	0.0065**	0.0085***	0.0086***	0.0098***
	(0.0041)	(0.0040)	(0.0033)	(0.0033)	(0.0030)	(0.0032)	(0.0031)	(0.0032)
Log Per Capita Current	0.0413**	0.0413**	0.0465***	0.0465***	0.0427***	0.0427***	0.0262**	0.0262**
	(0.0154)	(0.0154)	(0.0144)	(0.0144)	(0.0146)	(0.0146)	(0.0128)	(0.0128)
Islam Percent of Pop.	-0.0696*	-0.0872**	-0.2002***	-0.2200***	-0.1233***	-0.1415***	-0.0886**	-0.0997***
	(0.0356)	(0.0350)	(0.0521)	(0.0501)	(0.0436)	(0.0408)	(0.0349)	(0.0332)
Female	0.1065***	0.1065***	0.1207***	0.1207***				
	(0.0105)	(0.0105)	(0.0085)	(0.0085)				
Married	-0.0414***	-0.0414***	-0.0525***	-0.0525***	-0.0220***	-0.0220***	-0.0721***	-0.0721***
	(0.0077)	(0.0077)	(0.0084)	(0.0084)	(0.0066)	(0.0066)	(0.0069)	(0.0069)
Middle Age Dummy	0.0231***	0.0231***	-0.0072	-0.0072	-0.0014	-0.0014	-0.0212***	-0.0212***
	(0.0072)	(0.0072)	(0.0053)	(0.0053)	(0.0061)	(0.0061)	(0.0050)	(0.0050)
Old Age Dummy	-0.0710***	-0.0710***	-0.0274***	-0.0274***	-0.0299***	-0.0299***	-0.0661***	-0.0661***
	(0.0140)	(0.0140)	(0.0096)	(0.0096)	(0.0088)	(0.0088)	(0.0098)	(0.0098)
God Important	-0.0109***	-0.0109***	-0.0045	-0.0045	-0.0085***	-0.0085***	-0.0060**	-0.0060**
	(0.0030)	(0.0030)	(0.0034)	(0.0034)	(0.0032)	(0.0032)	(0.0026)	(0.0026)
Catholic Dummy	0.0009	0.0009	0.0416*	0.0416*	0.0210	0.0210	0.0140	0.0140
	(0.0233)	(0.0233)	(0.0240)	(0.0240)	(0.0205)	(0.0205)	(0.0177)	(0.0177)
Islam Dummy	-0.0344	-0.0344	-0.0090	-0.0090	-0.0261	-0.0261	-0.0343	-0.0343
	(0.0351)	(0.0351)	(0.0379)	(0.0379)	(0.0292)	(0.0292)	(0.0307)	(0.0307)
Income Level	0.0089***	0.0089***	0.0062*	0.0062*	0.0074***	0.0074***	0.0064***	0.0064***
	(0.0024)	(0.0024)	(0.0033)	(0.0033)	(0.0023)	(0.0023)	(0.0020)	(0.0020)
Social Class	0.0045	0.0045	0.0092*	0.0092*	0.0102***	0.0102***	0.0033	0.0033
	(0.0046)	(0.0046)	(0.0046)	(0.0046)	(0.0035)	(0.0035)	(0.0032)	(0.0032)
College	0.0681***	0.0681***	0.0592***	0.0592***	0.0506***	0.0506***	0.0663***	0.0663***
	(0.0079)	(0.0079)	(0.0082)	(0.0082)	(0.0076)	(0.0076)	(0.0071)	(0.0071)
Employed	0.0202***	0.0202***	0.0461***	0.0461***	0.0125**	0.0125**	0.0568***	0.0568***
	(0.0058)	(0.0058)	(0.0083)	(0.0083)	(0.0056)	(0.0056)	(0.0096)	(0.0096)
Observations	33,571	33,571	46,659	46,659	38,397	38,397	41,833	41,833
Countries	39	39	46	46	60	60	60	60
R-Squared	0.2833	0.2833	0.2709	0.2709	0.2498	0.2498	0.2409	0.2409

Bootstrapped standard errors are reported in parenthesis for the two-stage specifications. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 3.15- Continued

Dependent Variable: Index of Social Norms Towards Women's Role in Society						
	Young Age Group		**Middle Age Group**		**Old Age Group**	
	(17)	**(18)**	**(19)**	**(20)**	**(21)**	**(22)**
EFW Current	0.0159	0.0308***	0.0212*	0.0345***	0.0130	0.0300***
	(0.0099)	(0.0085)	(0.0121)	(0.0095)	(0.0106)	(0.0083)
Polity Current	0.0072**	0.0089***	0.0080**	0.0095***	0.0075**	0.0094***
	(0.0027)	(0.0029)	(0.0033)	(0.0035)	(0.0029)	(0.0030)
Log Per Capita Current	0.0364***	0.0364***	0.0325**	0.0325**	0.0417***	0.0417***
	(0.0118)	(0.0118)	(0.0155)	(0.0155)	(0.0156)	(0.0156)
Islam Percent of Pop.	-0.1133***	-0.1288***	-0.1024**	-0.1162***	-0.1195***	-0.1373***
	(0.0410)	(0.0394)	(0.0409)	(0.0381)	(0.0389)	(0.0380)
Female	0.1493***	0.1493***	0.1137***	0.1137***	0.0626***	0.0626***
	(0.0090)	(0.0090)	(0.0067)	(0.0067)	(0.0077)	(0.0077)
Married	-0.0599***	-0.0599***	-0.0444***	-0.0444***	-0.0225	-0.0225
	(0.0073)	(0.0073)	(0.0069)	(0.0069)	(0.0138)	(0.0138)
Middle Age Dummy						
Old Age Dummy						
God Important	-0.0079**	-0.0079**	-0.0078**	-0.0078**	-0.0055*	-0.0055*
	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0029)	(0.0029)
Catholic Dummy	0.0181	0.0181	0.0214	0.0214	0.0032	0.0032
	(0.0176)	(0.0176)	(0.0204)	(0.0204)	(0.0199)	(0.0199)
Islam Dummy	-0.0358	-0.0358	-0.0280	-0.0280	-0.0170	-0.0170
	(0.0346)	(0.0346)	(0.0298)	(0.0298)	(0.0225)	(0.0225)
Income Level	0.0029	0.0029	0.0080***	0.0080***	0.0106***	0.0106***
	(0.0025)	(0.0025)	(0.0022)	(0.0022)	(0.0026)	(0.0026)
Social Class	0.0120***	0.0120***	0.0021	0.0021	0.0051	0.0051
	(0.0035)	(0.0035)	(0.0029)	(0.0029)	(0.0043)	(0.0043)
College	0.0378***	0.0378***	0.0691***	0.0691***	0.0745***	0.0745***
	(0.0068)	(0.0068)	(0.0081)	(0.0081)	(0.0102)	(0.0102)
Employed	0.0267***	0.0267***	0.0473***	0.0473***	0.0308***	0.0308***
	(0.0092)	(0.0092)	(0.0062)	(0.0062)	(0.0103)	(0.0103)
Observations	24,497	24,497	44,162	44,162	11,571	11,571
Countries	60	60	60	60	59	59
R-Squared	0.2773	0.2773	0.2843	0.2843	0.2058	0.2058

Bootstrapped standard errors are reported in parenthesis for the two-stage specifications. p<0.01 ***, p<0.05 **, and p<0.10 *

than those in the youngest group. This dummy variable is often negative and significant, but there are a few exceptions

Finally, when an individual says that God plays a more central role in their life, this is associated with greater gender norm disparity. However, whether an individual is a Catholic, or a Muslim does not have any impact on attitudes towards women's role in society. This is consistent with the view that it is not the religion one follows that is related to gender norms, but the intensity of devotion.

Other micro factors provide insight into an individual's upbringing, and to how likely they are to be exposed to new ideas. Both a higher self-reported income decile and a higher self-reported social class are associated with norms index scores consistent with less gender disparity. While income level tends to have a stronger relationship with gender norms than social class, there are some interesting differences. Income level has more to do with current earnings potential, while social class is more closely related to an individual's upbringing. The results indicate that income level is highly significant and positive for the middle and older age groups, but not for the youngest one. Social class, however, exhibits the opposite pattern. This is consistent with the view that one's family status exerts greater impact during one's youth, but this influence weakens with age. As individuals gain life and work experience, the income decile they fall into becomes a predictor of gender norms. Interestingly, the results indicate that social class also matters more than income level in lower income countries.

These individual-level regressions were estimated again, both with and without time and country dummy variables. As with the macro-level analysis, the inclusion of time dummy variables does not alter the results in a significant way. When the country dummy variables are included, three out of the four macro-level explanatory variables are insignificant. Economic freedom, income, and political institutions are not significant while the percentage of a country's population that practices Islam maintains a negative and significant relationship. The country dummy variables themselves are mostly insignificant, and the pattern of results for the micro-level variables is unchanged.

Tables 3.16 and 3.17 depict the results of estimating equations 3.4 through 3.6 using measures of economic freedom, per capita income, and political institutions that precede the scores on the Index of Norms towards Women's Role in Society by a decade. This is done to

account for the fact that changes in country-level factors may take awhile to impact the social attitudes at the individual level.

In general, there are not many differences between the results of regressions with contemporaneous dependent and independent variables and those with the lagged independent variables. The pattern of significance and the magnitude of the coefficients are similar in both cases.

Table 3.16: OLS Stage 1 Regression
(Key Dependent Variables are Lagged by 10 Years)

Dependent Variable: Log Per Capita Income 10 Years Prior	
EFW Prior	0.4070***
	(0.0759)
Polity Prior	0.0311*
	(0.0208)
Islam Percent of Pop.	-0.4444
	(0.3561)
Observations	196,965
Countries	67
Adj. R-Squared	0.4435

Bootstrapped standard errors are reported in parentheses.
Significance levels: p<0.01 ***, p<0.05 **, and p<0.10 *

3.4.3 Robustness Checks

At the individual-level analysis, the sample was divided into several additional groupings not reported here. When the regressions were run on the sample of only those individuals that practice Islam, economic freedom ceases to matter. This is consistent with the view that the institutions consistent with economic freedom are not enough to overcome that particular cultural influence on gender norms. When the sample is sorted according to OECD member countries and non-member countries, EFW scores are associated with less disparity in the gender norms scores only for the sample of non-member countries. Since OECD member countries also tend to be higher income, it is not entirely clear why these divisions provide such different results.

Table 3.17: Results of OLS Estimation at the Individual Level (Key Dependent Variables are Lagged by 10 Years)

Dependent Variable: Index of Social Norms Towards Women's Role in Society								
	Baseline Estimate		**All Countries**		**High Income**		**Low Income**	
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
EFW Prior	0.0100	0.0273***	0.0028	0.0175**	-0.0110	0.0244*	-0.0035	0.0053
	(0.0086)	(0.0079)	(0.0092)	(0.0078)	(0.0144)	(0.0124)	(0.0129)	(0.0130)
Polity Prior	0.0050**	0.0064***	0.0049**	0.0060**	0.0113**	0.0140***	0.0036	0.0043
	(0.0022)	(0.0021)	(0.0024)	(0.0024)	(0.0047)	(0.0046)	(0.0030)	(0.0031)
Log Per Capita Prior	0.0426***	0.0426***	0.0361**	0.0361**	0.0868**	0.0868**	0.0216	0.0216
	(0.0151)	(0.0151)	(0.0148)	(0.0148)	(0.0326)	(0.0326)	(0.0153)	(0.0153)
Islam Percent of Pop.	-0.1955***	-0.2144***	-0.1795***	-0.1955***	-0.0649	-0.1035	-0.1810***	-0.1906***
	(0.0308)	(0.0298)	(0.0414)	(0.0396)	(0.3746)	(0.3772)	(0.0396)	(0.0373)
Female			0.1186***	0.1186***	0.0816***	0.0816***	0.1329***	0.1329***
			(0.0071)	(0.0071)	(0.0094)	(0.0094)	(0.0079)	(0.0079)
Married			-0.0454***	-0.0454***	-0.0348***	-0.0348***	-0.0517***	-0.0517***
			(0.0055)	(0.0055)	(0.0062)	(0.0062)	(0.0070)	(0.0070)
Middle Age Dummy			-0.0107**	-0.0107**	-0.0325***	-0.0325***	-0.0056	-0.0056
			(0.0047)	(0.0047)	(0.0070)	(0.0070)	(0.0054)	(0.0054)
Old Age Dummy			-0.0384***	-0.0384***	-0.0980***	-0.0980***	-0.0202**	-0.0202**
			(0.0085)	(0.0085)	(0.0120)	(0.0120)	(0.0087)	(0.0087)
God Important			-0.0093***	-0.0093***	-0.0084***	-0.0084***	-0.0025	-0.0025
			(0.0031)	(0.0031)	(0.0024)	(0.0024)	(0.0044)	(0.0044)
Catholic Dummy			0.0192	0.0192	0.0163	0.0163	0.0274	0.0274
			(0.0189)	(0.0189)	(0.0235)	(0.0235)	(0.0.272)	(0.0.272)
Islam Dummy			0.0044	0.0044	-0.0483	-0.0483	0.0106	0.0106
			(0.0306)	(0.0306)	(0.0508)	(0.0508)	(0.0322)	(0.0322)
Income Level			0.0084***	0.0084***	0.0071***	0.0071***	0.0075**	0.0075**
			(0.0023)	(0.0023)	(0.0018)	(0.0018)	(0.0031)	(0.0031)
Social Class			0.0054*	0.0054*	0.0035	0.0035	0.0068*	0.0068*
			(0.0032)	(0.0032)	(0.0032)	(0.0032)	(0.0040)	(0.0040)
College			0.0625***	0.0625***	0.0443***	0.0443***	0.0654***	0.0654***
			(0.0063)	(0.0063)	(0.0064)	(0.0064)	(0.0092)	(0.0092)
Employed			0.0372***	0.0372***	0.0220***	0.0220***	0.0410***	0.0410***
			(0.0062)	(0.0062)	(0.0050)	(0.0050)	(0.0085)	(0.0085)
Observations	118,672	118,672	76,209	76,209	21,833	21,833	54,376	54,376
Countries	61	61	54	54	20	20	34	34
R-Squared	0.2123	0.2123	0.2747	0.2747	0.1766	0.1766	0.1878	0.1878

Bootstrapped standard errors are reported in parenthesis for the two-stage specifications. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 3.17- Continued

Dependent Variable: Index of Social Norms Towards Women's Role in Society								
	2000 and Earlier		**After 2000**		**Male Population**		**Female Population**	
	(9)	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**
EFW Prior	0.0054	0.0218**	-0.0126	0.0075	0.0033	0.0205**	0.0027	0.0148*
	(0.0130)	(0.0101)	(0.0124)	(0.0093)	(0.0101)	(0.0086)	(0.0086)	(0.0075)
Polity Prior	0.0087***	0.0100***	0.00116	0.0031	0.0049**	0.0062**	0.0050*	0.0059**
	(0.0025)	(0.0025)	(0.0037)	(0.0035)	(0.0024)	(0.0024)	(0.0025)	(0.0024)
Log Per Capita Prior	0.0405**	0.0405**	0.0494**	0.0494**	0.0421***	0.0421***	0.0298**	0.0298**
	(0.0169)	(0.0169)	(0.0188)	(0.0188)	(0.0155)	(0.0155)	(0.0140)	(0.0140)
Islam Percent of Pop.	-0.0753**	-0.0933**	-0.2200***	-0.2419***	-0.1811***	-0.1998***	0.1721***	-0.1854***
	(0.0354)	(0.0340)	(0.0499)	(0.0479)	(0.0436)	(0.0418)	(0.0397)	(0.0382)
Female	0.1122***	0.1122***	0.1200***	0.1200***				
	(0.0114)	(0.0114)	(0.0082)	(0.0082)				
Married	-0.0363***	-0.0363***	-0.0508***	-0.0508***	-0.0188***	-0.0188***	-0.0704***	-0.0704***
	(0.0079)	(0.0079)	(0.0085)	(0.0085)	(0.0066)	(0.0066)	(0.0067)	(0.0067)
Middle Age Dummy	-0.0190**	-0.0190**	-0.0052	-0.0052	0.0000	0.0000	-0.0193***	-0.0193***
	(0.0074)	(0.0074)	(0.0085)	(0.0085)	(0.0061)	(0.0061)	(0.0056)	(0.0056)
Old Age Dummy	-0.0603***	-0.0603***	-0.0246**	-0.0246**	-0.0259***	-0.0259***	-0.0584***	-0.0584***
	(0.0139)	(0.0139)	(0.0101)	(0.0101)	(0.0090)	(0.0090)	(0.0098)	(0.0098)
God Important	-0.0140***	-0.0140***	-0.0053	-0.0053	-0.0102***	-0.0102***	-0.0073**	-0.0073**
	(0.0033)	(0.0033)	(0.0033)	(0.0033)	(0.0034)	(0.0034)	(0.0030)	(0.0030)
Catholic Dummy	-0.0082	-0.0082	0.0422*	0.0422*	0.0240	0.0240	0.0159	0.0159
	(0.0204)	(0.0204)	(0.0224)	(0.0224)	(0.0206)	(0.0206)	(0.0180)	(0.0180)
Islam Dummy	-0.0416	-0.0416	0.0163	0.0163	0.0045	0.0045	0.0035	0.0035
	(0.0305)	(0.0305)	(0.0395)	(0.0395)	(0.0295)	(0.0295)	(0.0322)	(0.0322)
Income Level	0.0107***	0.0107***	0.0065**	0.0065**	0.0089***	0.0089***	0.0074***	0.0074***
	(0.0025)	(0.0025)	(0.0030)	(0.0030)	(0.0024)	(0.0024)	(0.0022)	(0.0022)
Social Class	0.0041	0.0041	0.0096**	0.0096**	0.0091**	0.0091**	0.0026	0.0026
	(0.0044)	(0.0044)	(0.0040)	(0.0040)	(0.0038)	(0.0038)	(0.0035)	(0.0035)
College	0.0608***	0.0608***	0.0618***	0.0618***	0.0522***	0.0522***	0.0687***	0.0687***
	(0.0085)	(0.0085)	(0.0082)	(0.0082)	(0.0081)	(0.0081)	(0.0068)	(0.0068)
Employed	0.0210***	0.0210***	0.0457***	0.0457***	0.0102*	0.0102*	0.0587***	0.0587***
	(0.0053)	(0.0053)	(0.0085)	(0.0085)	(0.0058)	(0.0058)	(0.0098)	(0.0098)
Observations	29,550	29,550	46,659	46,659	36,895	36,895	39,314	39,314
Countries	31	31	46	46	54	54	54	54
R-Squared	0.3142	0.3142	0.2662	0.2662	0.2584	0.2584	0.2457	0.2457

Bootstrapped standard errors are reported in parenthesis for the two-stage specifications. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 3.17- Continued

Dependent Variable: Index of Social Norms Towards Women's Role in Society						
	Young Age Group		**Middle Age Group**		**Old Age Group**	
	(17)	**(18)**	**(19)**	**(20)**	**(21)**	**(22)**
EFW Prior	0.0094	0.0211**	0.0004	0.0160*	-0.0032	0.0161**
	(0.0101)	(0.0090)	(0.0100)	(0.0084)	(0.0085)	(0.0071)
Polity Prior	0.0045*	0.0054**	0.0052*	0.0064**	0.0052**	0.0067***
	(0.0024)	(0.0024)	(0.0026)	(0.0026)	(0.0022)	(0.0022)
Log Per Capita Prior	0.0287**	0.0287**	0.0384**	0.0384**	0.0473***	0.0473***
	(0.0122)	(0.0122)	(0.0166)	(0.0166)	(0.0155)	(0.0155)
Islam Percent of Pop.	-0.1735***	-0.1863***	-0.1803***	-0.1974***	-0.1787***	-0.1998***
	(0.0461)	(0.0459)	(0.0406)	(0.0381)	(0.0343)	(0.0324)
Female	-0.1735***	-0.1735***	0.1173***	0.1173***	0.0650***	0.0650***
	(0.0461)	(0.0461)	(0.0067)	(0.0067)	(0.0080)	(0.0080)
Married	-0.0592***	-0.0592***	-0.0389***	-0.0389***	-0.0233*	-0.0233*
	(0.0073)	(0.0073)	(0.0067)	(0.0067)	(0.0127)	(0.0127)
Middle Age Dummy						
Old Age Dummy						
God Important	-0.0098***	-0.0098***	-0.0095***	-0.0095***	-0.0061*	-0.0061*
	(0.0034)	(0.0034)	(0.0033)	(0.0033)	(0.0031)	(0.0031)
Catholic Dummy	0.0197	0.0197	0.0226	0.0226	0.0115	0.0115
	(0.0187)	(0.0187)	(0.0207)	(0.0207)	(0.0184)	(0.0184)
Islam Dummy	-0.0097	-0.0097	0.0119	0.0119	0.0102	0.0102
	(0.0366)	(0.0366)	(0.0293)	(0.0293)	(0.0234)	(0.0234)
Income Level	0.0037	0.0037	0.0097***	0.0097***	0.0112***	0.0112***
	(0.0027)	(0.0027)	(0.0023)	(0.0023)	(0.0025)	(0.0025)
Social Class	0.0120***	0.0120***	0.0011	0.0011	0.0038	0.0038
	(0.0037)	(0.0037)	(0.0034)	(0.0034)	(0.0046)	(0.0046)
College	0.0395***	0.0395***	0.0712***	0.0712***	0.0773***	0.0773***
	(0.0080)	(0.0080)	(0.0077)	(0.0077)	(0.0100)	(0.0100)
Employed	0.0272***	0.0272***	0.0491***	0.0491***	0.0253**	0.0253**
	(0.0088)	(0.0088)	(0.0061)	(0.0061)	(0.0101)	(0.0101)
Observations	23,743	23,743	41,861	41,861	10,605	10,605
Countries	54	54	54	54	53	53
R-Squared	0.2749	0.2749	0.2950	0.2950	0.2230	0.2230

Bootstrapped standard errors are reported in parenthesis for the two-stage specifications. p<0.01 ***, p<0.05 **, and p<0.10 *

Many alternative explanatory variables were included in preliminary regression specifications, such as the number of children an individual has, and the interaction between the intensity of religious beliefs with Catholicism or Islam. These variables were insignificant, and their inclusion did not alter the pattern of results for the other variables. Thus, they were omitted from the main regression results.

Additionally, alternate measures of the quality of institutions were included, such as the Freedom House measures of political rights, civil liberties, and media freedom. These variables were rarely significant, and lacked the explanatory power of the variables included in the baseline model. Finally, the explanatory variables included in the benchmark regressions were entered into additional regression specifications in varying sequences and combinations. This exercise did not alter the results in any material way. These robustness checks enhance our confidence in this analysis.

While the focus in this chapter is on economic freedom, the results are consistent with the view that political institutions have a dramatic impact on gender norms as well. The Polity IV measure of democracy is positive and significant in all 11 of the two-stage regression results when all variables are contemporaneous, while economic freedom is only significant in nine.[33] Both economic freedom and political institutions are positive and significant in nine of the 11 two-stage regressions when the independent variables precede the dependent variables by a decade.

Higher scores on the Polity IV index indicate that countries have liberal democratic political institutions. Democratic institutions provide women with a greater voice in the political process, which may translate to policies more aligned with the preferences of women. In this way, democratic political institutions may lead to gender norms closer to parity. The results of this analysis are consistent with the view that inclusive institutions of all sorts are important factors contributing to greater gender parity over time. When the economic and political processes allow all individuals to participate, gender norms are less likely to favor males over females in education, employment, and leadership opportunities.

[33] This measure is actually positive and significant in 21 out of 22 regressions. The two-stage regressions are the relevant results to compare. Both economic freedom and political institutions have a direct effect, and an indirect effect that operates through per capita income. The coefficients in the two-stage regression more closely reflect the direct and indirect effects of these two variables.

3.5 Concluding Remarks

There are three levels of analysis presented in this chapter. First, an overview of the data indicates that gender norms have moved closer to parity during the 1994 to 2008 period. This pattern holds when looking at country-level averages of the entire sample, when these averages are separated into male and female averages, and when the sample is separated according to age groups. Females have much higher scores on the Index of Norms toward Women's Role in Society than men in all three of the periods examined. Similarly, younger generations consistently have more tolerant norms than the older generations across all three periods.

The results of the country-level regression analysis are consistent with the view that economic freedom, democratic political institutions, and per capita income all have a positive and significant relationship with the country-level average scores on the norms index. The relationship between gender norms index scores and the percentage of the population that practices Islam is negative and highly significant. These results are largely unchanged when the regressions are estimated on various subdivisions of the data. The analysis of the individual-level data corroborates the macro-level results. All four macro-level variables exhibit the same pattern of significance in both the country-level and individual-level analyses.

Several individual characteristics are positively related to the norms index scores. Being female, attending college, having employment, belonging to a higher income level, and being a member of a higher social class are all generally associated with attitudes that tend to enhance gender parity. Other individual characteristics are negatively related to the norms index score. An individual that is currently married, or has been married in the past, is more likely to favor males over females in education, employment, and leadership opportunities. Additionally, the larger the role that religion plays in an individual's life, the more likely they are to favor males over females.

Cultural norms are also an important factor influencing the gender attitudes in a society. The results presented here are consistent with the view that societies that have a predominantly Muslim culture are more likely to possess gender norms that favor males over females in education, employment, and leadership positions. Interestingly, while the percentage of a country's population that practices Islam consistently exhibits a strong, negative relationship with the gender norms index, the individual-level Islam dummy variable is never significant.

This suggests that it is not an individual's religious beliefs that influence their gender attitudes. These attitudes are instead shaped by the culture in which that individual lives.

Overall, the results of this chapter support the view that economically free institutions help to create a more tolerant society over time. The set of economic institutions present in a country are likely to affect an individual's attitudes towards gender roles, while an individual's attitudes towards gender roles will have no impact on the quality of the country-level institutions. As such, the results of the individual-level analysis provide evidence that the relationship between economic freedom and gender norms is a causal one. Future extensions of this research should focus further on identifying the causal mechanisms through which economic institutions alter gender norms.

Even after controlling for political and economic institutions, as well as a number of other factors, the measure of per capita income exhibits a positive and significant relationship with the gender norms index in almost every case.[34] This is consistent with the view that gender equality is, at least in part, a function of the natural development process.

It is also important to recognize the highly significant, positive relationship between political institutions and gender norms. Democratic political institutions limit the ability of the government to expropriate property from citizens, they separate political powers, they require competitive elections, and they institute checks and balances between the separate branches of government. Economic institutions consistent with negative freedom enforce property rights, limit the size and scope of government, and promote individual choice. The results presented in this chapter are consistent with the view that inclusive economic and political institutions work together to help societies achieve greater gender parity. Additional research is necessary to fully understand the complexity of these relationships.

If additional analysis further confirms the causal relationship between economic freedom and greater parity in gender norms, then the policy implications are quite interesting. The conventional wisdom regarding gender politics argues that achieving greater gender equality requires regulations such as equal pay for males and females, and mandatory maternity leave with the guarantee of resuming the same job upon returning to work. These regulations not only increase the cost of hiring women, but they are directly at odds with the concept of negative

[34] The natural log of per capita income was significant in 10 out of 11 two-stage OLS regressions when the dependent and independent variables are contemporaneous. This is also the case when the independent macro-level variables precede the dependent variable by 10 years.

economic freedom as measured by the EFW index. The results presented in this chapter suggest that the reduction to economic freedom resulting from these types of regulations may adversely affect social norms in a way that undermines their goal of gender parity.

CHAPTER FOUR

THE IMPACT OF ECONOMIC FREEDOM ON WOMEN'S EDUCATION

4.1 Introduction

Education is regarded as an important means to achieve a more fulfilling life. It opens access to better forms of employment and provides a new set of tools for navigating one's environment. In recent years, there has been increased concern about the disparity in the education of women relative to men. Millennium Development Goal Three is to achieve gender equity, and to enhance the quality of life for women. Specifically, section 3.A states its objective is to "eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015."[35]

If the educational attainment of women is a major concern, and policymakers would like to observe more women investing in education and other forms of human capital, it is important to consider the relevant policy alternatives. Governments may be able to create the incentives for individuals to invest in education by embracing economic freedom. In other words, they can facilitate an institutional environment that protects property rights, provides an even-handed rule of law, reduces bureaucratic red tape and the regulatory burden, adopts a sound monetary policy, allows people and goods to cross borders freely, and keeps the amount of government spending small relative to the size of the economy.

An economically free environment increases the potential for gains from trade by expanding the scope of the market place. This creates employment opportunities and increases the opportunity cost of not becoming educated. If economic freedom has a positive impact on educational outcomes, then it may be worth considering movements toward economic freedom as a means to create stronger incentives for women to invest in education.

Early contributions to the literature on economic institutions have confirmed Adam Smith's (1776/198) conjecture that economically free institutions have positive effects on economic growth (Knack and Keefer 1999). The level of development in a country may also be impacted by the legal (LaPorta et al. 2008; Glaeser and Shleifer 2002) and colonial origins

[35] A complete list and description of the United Nations' Millennium Development Goals can be accessed here: http://www.endpoverty2015.org

(Acemoglu, Johnson and Robinson 2001; 2002; and 2005) that laid the institutional foundations that persist today. These works provide support for the view that countries with institutions that constrain the government's ability to expropriate its citizens' property and discourage rent-seeking behavior tend to be wealthier than countries that do not.

Because of the development of indexes, such as the Fraser Institute's Economic Freedom of the World measure (Gwartney et al. 2013) we are able to empirically examine the impact of economic institutions on various economic outcomes of interest. Gwartney and Lawson (2003) explain that the goal of the Economic Freedom of the World Index (hereafter EFW index) is to measure to what extent the institutions of a particular country contain the "key ingredients" to economic freedom: personal choice, voluntary exchange, freedom to compete, and the protection of person and property. This composite index provides a reasonable measure of the cross-country differences in economic institutions and has been employed extensively in the literature.[36]

A burgeoning literature on the relationship between economic freedom and a wide variety of development outcomes has followed the publication of the EFW index. Of most importance, the literature presents support for the view that economic freedom has a causal impact on economic growth (Dawson 2003; Dawson 2006; De Haan, Lundström and Sturm 2006). A survey of the literature by Berggren (2003) is consistent with the view that there is a causal relationship between movements toward economic freedom and reductions in inequality.

Economic freedom also has a positive influence on entrepreneurial activity (Bjørnskov and Foss 2008). By rewarding those who create value with profits and punishing those who divert resources from productive activities with losses, economic freedom tends to direct the efforts and investments of individual towards productive, rather than unproductive or destructive activities. If profitable risks, innovations, and opportunities arise from wealth-creating activities, then entrepreneurship will contribute to higher incomes. If, however, the institutions in place create an environment that rewards wealth-redistributing or wealth-destroying activities (like rent seeking), then these same entrepreneurs can act as a drag on the economy (Baumol 1990; Holcombe 1998).

Becker's (1957) seminal work on discrimination argues that institutions consistent with the concept of economic freedom tend to reward businesses that do not discriminate against

[36] See Lawson and Hall 2013 for a meta-study of all of the published, peer-reviewed research using the EFW index as an explanatory variable.

minorities as long as the consumers do not have a strong preference for discrimination. In free economies, individuals and organizations with preferences for discrimination forgo gains from trade with individuals who are part of the minority. These forgone gains are potentially large. Since comparative advantages of dissimilar groups tend to be quite different, dissimilar groups have the most to gain from voluntary interactions with one another.

If the discrimination stems from the preferences of the producers, this means that employers are willing to pay a premium to hire members of their preferred group. Producers with a preference for discrimination will have higher production costs than firms that do not discriminate and are willing to hire, for example, women who are equally skilled but can be hired at lower relative wages than men because of gender discrimination. The firms engaging in discriminatory practices will be punished via the competitive process and will be weeded out of the market over time.

If, however, the preference for discrimination arises from consumers and not producers, then the impact of using the labor of members from the less preferred group would be to reduce the demand for such products. For example, assume that men in a particular society do not like to have their hair cut by a woman. If this were true then the market process would punish the owners of barbershops for hiring women, even in a highly competitive setting.[37] Cultural factors that vary from country to country may influence which members of society may exhibit a preference for discrimination.[38] Because there are multiple forces operating in opposing directions, the overall impact of economic freedom on discrimination that will prevail is unclear and remains an empirical question.

The question of the impact of economic freedom on education rates is also an empirical one, because there is no guarantee that the efficient education enrollment rate will be higher than the current average. Given some of the current literature on economic freedom, it seems likely that economically free countries will have higher incomes on average. While, it is not clear that what the optimal amount of education in any given society may be, there are several reasons to believe that the "optimal" educational enrollment levels, literacy rates, and other outcomes that proxy for investments in human capital, will be higher in societies that embrace economic

[37] While this illustrates some of the limitations of competition as a discrimination reducing mechanism, this criticism is not as strong when we recognize that these societies do not exist in a vacuum and are able to trade products with consumers in other societies that do not share such intense discriminatory preferences.
[38] The factors that influence an individual's preference for discrimination against women are explored in chapter three.

freedom. Individuals will invest in human capital when the returns to doing so are higher. In countries with economic freedom, there are greater opportunities to benefit from exchange, growth rates are typically higher, and income levels tend to be higher.

There is a growing body of literature providing empirical support for the view that economic freedom leads to increases in many desirable development outcomes for women. Mixon and Roseman (2003) find that greater economic freedom is associated with greater female life expectancy relative to male life expectancy. In their analysis of post-soviet Hungary, Jolliffe and Campos (2005) provide some evidence that the collapse of socialism has led to a decline in the male-female difference in log wages from 0.31 to 0.19 between 1986 and 1998. This change is largely attributed to the transition from socialism to institutions more consistent with economic freedom.

Additionally, Weichselbaumer and Winter-Ebmer (2003) argue that both increased competition and the enactment of equal treatment laws reduce the gender wage gap. Feldman (2007) provides support for the view that economic freedom reduces unemployment, especially among women and young people. Stroup (2008) examines the influence of capitalism (as measured by the EFW index) and the political process (as measured by Freedom House's political rights index), on the well-being of women. His study is consistent with the idea that both economic freedom and political freedom are correlated with higher levels of various measures of quality of life outcomes for women. Specifically, economic freedom tends to increase life expectancy, adult literacy rates, the percentage of women in secondary education, the percentage of female wage earners in the economy, fertility rates for women of child-bearing age, and the percent of women of child bearing age using contraception. Ultimately, he finds that economic freedom provides a stronger impact than political freedom on women's quality of life.

Further, Stroup (2011) explicitly examines the impact of the EFW on the United Nations Development Project's *Gender Inequality Report* (GI). The study finds that a one-point increase in the average EFW index is associated with an increase in the percentage of women with a secondary education by almost five percent.

This chapter extends the current development literature that focuses on educational outcomes by including the quality of economic institutions as an explanatory variable. It also builds upon the few studies that have looked at the relationship between economic freedom and educational outcomes for women by extending the datasets used previously, focusing on a wider

variety of educational outcomes, and subjecting the data to more extensive empirical analysis. Panel data techniques are employed on a dataset of over 100 countries, collected every five years from 1980 to 2010.[39] In addition to economic freedom, it controls for the quality of political institutions, per capita income, government spending on education, and cultural factors. The enrollment rates of females in both secondary and tertiary education, as well as these rates relative to males, are examined.

Three major questions are addressed: 1. Are institutions consistent with economic freedom associated with increased education enrollment rates for women? 2. Are institutions consistent with economic freedom associated with lower levels of gender-based education inequality? 3. Do moves toward increased economic freedom, lead to higher education enrollment rates for women, and greater gender parity in enrollment?

The remainder of the paper is organized as follows. Section two outlines the theoretical relationship between economic freedom and women's educational outcomes. Section three describes the data used in this study, as well as their sources. Section four discusses the empirical methods employed and their results, while section five concludes.

4.2 The Theoretical Relationships between Economic Freedom and Education

Education can be seen as a proxy measure of the perceived opportunities in a particular country. Institutions consistent with economic freedom have been argued to impact both of the existing set of opportunities available to individuals as well as their returns relative to other activities. Further, these institutions create an incentive structure that channels the efforts of individuals into productive ends, like education. As such, economic freedom may promote investments in human capital because these investments have a higher pay off when property rights are protected and individuals compete for resources through markets rather than the political system. Because of this, economic freedom is expected to exert a positive impact on women's educational outcomes.

Existing literature has provided evidence that a causal relationship between economic freedom and per capita income growth exists. Thus, countries with higher levels of economic freedom will grow at faster rates than those without the incentives that are present in free economies. These higher growth rates will lead to higher levels of per capita income over time.

[39] Data for some countries begins in 1970, but the dataset becomes much more complete after 1980.

Only after higher levels of per capita income are achieved will there be an impact on educational outcomes for women as increases in per capita income also increase the opportunity cost of not becoming educated. Because economic freedom operates through these other channels, there will be a time lag before the effects of changes in economic institutions become apparent. Figure 4.1 depicts the main channel through which economic freedom is anticipated to impact educational outcomes for women.

Figure 4.1: The Relationship between Economic Freedom and Women's Education

Another potential channel through which economic institutions may positively affect women's educational outcomes is the demand for labor. Sound economic institutions lead to economic growth. In turn, the economic growth increases the demand for labor, leading to higher wages. Because of the accompanying increase in opportunities to utilize their human capital, women will find it in their interest to acquire secondary and tertiary education.

Economic freedom may also have a direct impact on women's school enrollment rates, beyond the indirect effects already discussed. Economic freedom creates an environment in which the individual has much more control over the direction of their lives than they would in a setting where property rights are not protected and in which the legal system explicitly favors males over females. Women living in societies with institutions more consistent with economic freedom may invest more heavily in education not only because the returns of such investments will be higher, but because they are better able to capture the benefits of such investments. Further, in such environments they must more fully bear the costs of not obtaining education if such a decision turns out to have negative consequences.

The theoretical relationship between economic freedom and women's education as outlined is likely to be the strongest for more advanced levels of schooling. Tertiary schooling provides individuals with the specialized skills they would need to thrive in a growing market place that economic freedom fosters. Most countries have compulsory education laws that force parents to send their children to primary school, and these laws in many countries extend to secondary school.[40] The individual choice of whether or not to go to school has been removed for earlier levels of schooling in many countries across the world, thus the nature of a country's economic institutions is unlikely to exert a substantial impact on enrollment rates for levels of schooling that are compulsory. Because of this, the relationship between economic freedom and pursuit of education is expected to be weaker for lower levels of education than it is for more advanced levels. The focus in this study is on the impact of economic freedom on enrollment in tertiary schooling and secondary schooling- primary education measures are not addressed here.

The literature offers some alternative explanations for what might increase women's education enrollment rates. Nussbaum (2000: 53-54) in her work on women and development makes the case for state provision of education by noting that while some people technically have the choice to attend school, they do not effectively have a choice. Perhaps their economic circumstances mean that they cannot afford to pay for school, or to bear the opportunity cost of having their children attend school instead of work. Or maybe there is a lack of functioning schools due to corrupt local officials and otherwise poor governance. Thus, a measure of both the political institutions and the amount of resources that the government allocates towards education will be included in this study.

Still other explanations for the variation in women's rights have been offered that may also provide sources of change in women's educational outcomes. Geddes, and Lueck (2002), Doepke and Tertilt (2009), Doepke, Tertilt, and Voena (2012), and Fernandez (2009) argue that the expansion in women's property rights stem from advances in economic development, which created higher returns to women's participation in the formal economy than the returns to their efforts within the home. Doepke and Tertilt (2009) emphasize the role of technological change in the extension of economic rights to women. Fernandez (2009) touches on the role of political

[40] There is little in the way of cross-country data on compulsory education laws. The available data only dates back to 1999. There are a few regressions run as robustness checks that include a measure of compulsory education laws. When these measures are included, the sample is restricted to the most recent years in which there is the least amount of variation in enrollment rates across countries. These results are available upon request.

institutions, specifically inter-jurisdictional competition, in extending economic rights to women. As such, the set of explanatory variables includes both a measure of per capita income and a measure of the quality of political institutions.

Additionally, the potential role of religion (Barro and McCleary 2003) and other cultural factors (Berggren and Jordahl 2006; and Bjørnskov 2007; Fernandez 2007; Alesina et al. 2013) in the determination of cross-country differences in attitudes towards women's economic participation has been widely discussed. Therefore, this study includes a measure of religion as a proxy variable for culture to control for this potential influence on women's educational outcomes. The next section describes the data used to capture each variable of interest that has just been discussed.

4.3 Description of the Data[41]

4.3.1 Dependent Variables

The dependent variables in this study measure the educational attainment of women across countries. Four different dependent variables are used, all of which measure enrollment rates either in absolute or relative terms. There is one major data source for these dependent variables, the United Nations Educational, Scientific and Cultural Organization (UNESCO). The World Bank, OECD and UN collaborate in the compilation of these education figures, which also provide the basis for the education variables found in the World Bank's, *World Development Indicators*. This data has been used in development literature as a reliable measure

[41] The approach used to fill in gaps in the data most closely follows Gwartney and Connors (2010). The education figures as well as some of the explanatory data are available on an irregular basis. Each country in the data sets has education figures available for different sets of years. The following, straightforward statistical procedures were employed to adjust the available data to derive a more complete set of figures at five-year intervals from 1970-2010

1. When the reported data for a year ending in a zero or a five for a country, the reported education figures were used.
2. If the source did not report data for a country in a particular year ending in a zero or five, but they did report a value for each of the years adjacent to the missing year, the value reported reflects the average of the adjacent years.
3. If the source reports a figure for one adjacent year, but not both, the value reported for the year ending in a zero or five is the value reported for the available adjacent year. While this method is sure to introduce some measurement error into the education figures, this should not be problematic since education figures do not change drastically from one year to the next. The value reported for the adjacent years should provide a suitable proxy for the missing data.
4. If scenarios 1-3 do not apply, but there is data reported for the five year window centering on the year ending in zero or five with the missing value, the value reported is the average of all values in the five year window.
5. If none of the above scenarios holds, the observation for that country in that particular year is excluded from the dataset.

of the extent to which eligible children are participating in the educational opportunities available in a particular country.[42] Whether or not a student is classified as a secondary, or tertiary student is determined by the International Standard Classification of Education 1997.

Gross Female Enrollment in Tertiary Education (TEGF). This variable divides the total number of females currently enrolled in tertiary education, regardless of age, by the total population of females in the official tertiary education age group. Individuals are considered to be part of the official age group if they are within five years of the secondary education completion age. For most countries, the denominator is the number of women between ages 18 and 23, but this varies depending on the official secondary schooling age for each country.

Tertiary Enrollment Ratio (TER). The tertiary enrollment ratio is the gross female enrollment in tertiary education divided by the gross male enrollment in tertiary education. The closer this ratio is to 100, the closer the male and female enrollment rates are to parity. This value exceeds 100 when females are enrolled in tertiary education at a larger rate than males. A high ratio does not necessarily correspond with a high rate. Many of the largest ratios are found in countries with low enrollment rates for both males and females.

Gross Female Enrollment in Secondary Education (SEGF). Similar to the gross female enrollment rate in tertiary education, this variable measures the gross percentage of women enrolled in secondary schooling. This variable is calculated by dividing the number of females enrolled in school, regardless of age, by the number of females that are of the official secondary schooling age. The secondary schooling age for most countries begins between ages 10 to 14 years old, and the duration is anywhere between four and nine years.

Secondary Enrollment Ratio (SER). This relative measure captures the extent of gender disparity in secondary enrollment rates. It is calculated by dividing the gross rate of female enrollment in secondary education by the gross rate of male enrollment in secondary education. The interpretation of this variable is comparable to the tertiary enrollment ratio.

[42] Another widely used data set that measures educational outcomes is the Barro and Lee data (2010). This data, while it is more complete in terms of both the number of countries and years it covers, reflects the education level of the labor force (population 15 years and older) and does not reflect the education participation decisions of individuals currently eligible to attend school. The Barro and Lee data would be less responsive to current changes in economic freedom, as their measure includes a large percentage of individuals whose education decision was made several decades ago. While the Barro and Lee data set is widely used, it is not a suitable measure of what is examined in this paper.

4.3.2 Independent Variables

Economic Freedom of the World (EFW). This variable measures the extent to which a country possesses the set of institutions consistent with negative economic freedom. That is, the protection of property rights, the existence of rule of law, the size of government relative to the economy, the regulatory burden, and the soundness of monetary policy. The Fraser Institute's annual *Economic Freedom of the World Report* is the source for this data.[43] The index is reported on a scale of "0"-"10," with the lowest score in the sample being 1.34. To provide a more intuitive interpretation of the regression coefficients, this variable is standardized so that the mean is zero and the standard deviation is equal to one.

Per Capita Income (ln PC GDP). To account for the general level of development in a given country, a measure of per capita income is included. The measure of per capita income is obtained from the Penn World Tables and is a chained linked measure of real per capita GDP in constant 2005 international dollars. The natural log of real per capita GDP is used in most of the regression analysis.

Political Institutions (Polity). The Polity IV dataset[44] measures whether a country's political institutions are consistent with liberal democratic ideals. This measure ranges from "-10" to "10", with "10" indicating that the country is a consolidated democracy and "-10" indicating that the country is a hereditary monarchy. The figures are provided by the Center for Systematic Peace. It measures governing institutions such as: executive recruitment, constraints on executive authority, political competition, and changes in the institutionalized qualities of the governing authority. The data only includes information for the central government institutions and political groups reacting to the central authority.[45] As with the economic freedom measure, this index is standardized to allow for a more intuitive interpretation of the regression coefficients.

Government Education Spending (GES). This variable measures the total government spending on education, at all levels, as a percentage of total GDP for each country. This variable proxies for the extent to which education is a policy priority

[43] For a detailed explanation of how this variable is measured, see Gwartney et al. (2013).
[44]The Polity data is the main measure of political freedom. Freedom House's Political Rights and Civil Liberties data are alternative measures of non-economic freedoms included as a robustness check. The regressions including the Freedom House data are not reported here, as they do not significantly alter the estimates for the other variables. Further, their use results in fewer observations and a worse fit. Regressions results using these data are available upon request.
[45] For a detailed description of the Polity IV data, see Marshall et al. (2013).

Percentage of the Population that is Muslim (Is PCT). To provide a proxy for cultural norms that may place restrictions on a woman's behavior in a given country, the percentage of the population that identifies as a Muslim is included. This data is obtained from the World Religion Database (Moaz and Henderson 2013).

Table 4.1 provides the list of variables used in this study, as well as their summary statistics.

Table 4.1: Description of Variables with Summary Statistics

Description of Country-Level Variables	Source of Data	Label	Obs.	Mean	Std. Dev.	Min.	Max.
Secondary Enrollment Rate Female (gross)	World Bank	*SEGF*	914	60.48	35.84	0	170.53
Secondary Enrollment Ratio	World Bank	*SER*	921	88.35	24.75	8.01	245.51
Tertiary Enrollment Rate Female (gross)	World Bank	*TEGF*	838	22.26	25.25	0	111.35
Tertiary Enrollment Ratio	World Bank	*TER*	837	86.24	49.62	0	415.46
Economic Freedom Index	Fraser Institute	*EFW*	939	6.05	1.34	1.78	9.14
Standardized Economic Freedom Index	Fraser Institute	*Std_EFW*	939	2.09e-08	0.995	-3.76	2.95
Per Capita GDP (in thousands of 2005 dollars)	Penn World Tables	*PC GDP*	1034	10.49	11.67	0.18	4.33
Natural Log Per Capita GDP	Penn World Tables	*Ln PC GDP*	1034	1.66	1.29	-1.72	4.33
Political Institutions Index	Marshall, Gurr, & Jaggers	*Polity2*	1032	2.18	7.34	-10	10
Standardized Political Institutions Index	Marshall, Gurr, & Jaggers	*Std_Polity2*	1032	2.00e-09	0.996	-2.47	1.47
Percentage of Population Identifying as Muslim	Moaz & Henderson	*ISPCT*	1081	19.24	32.41	0	100
Government Education Spending, Total (% of GDP)	World Bank	*GES*	751	4.37	2.24	0.57	44.33

The data for most variables is available from its source on an annual basis, with the exception of the EFW data. EFW scores are available annually only after 2000. The data used in this analysis is gathered on a five-year basis (1970, 1975,…, 2005, 2010). [46] Thus, these are not multi-year averages and should not be interpreted as such.

Table 4.2: Correlation Matrix for all Explanatory Variables[a]

All Variables (647 observations)							
	EFW	*Std_EFW*	*Ln PC GDP*	*Polity2*	*Std_Polity2*	*IsPct*	*GES*
EFW	1.00						
Std_EFW	0.88	1.00					
Ln PC GDP	0.63	0.69	1.00				
Polity2	0.52	0.44	0.54	1.00			
Std_Polity2	0.36	0.45	0.53	0.92	1.00		
IsPct	-0.24	-0.29	-0.31	-0.50	-0.54	1.00	
GES	0.27	0.23	0.36	0.26	0.23	-0.10	1.00
Pairwise Correlations (observations range from 698 to 1032)							
	EFW	*Std_EFW*	*Ln PC GDP*	*Polity2*	*Std_Polity2*	*IsPct*	*GES*
EFW	1.00						
Std_EFW	0.88	1.00					
Ln PC GDP	0.63	0.67	1.00				
Polity2	0.48	0.40	0.50	1.00			
Std_Polity2	0.34	0.42	0.46	0.92	1.00		
IsPct	-0.19	-0.22	-0.24	-0.40	-0.46	1.00	
GES	0.17	0.15	0.35	0.16	0.14	-0.08	1.00

[a] The correlation matrixes for both the explanatory and dependent variables is available upon request.

The correlation coefficients between explanatory variables range from 0.08 to 0.67 in absolute value, and are reported in Table 4.2. The regression analysis in the next section takes steps to account for the relatively high correlation between economic freedom and per capita GDP, political institutions and per capita GDP, and political institutions and economic freedom, such as estimating two-stage models and including interaction terms.

Tables 4.3 through 4.10 show the 10 countries with the largest percentage change, and the 10 countries with the smallest percentage change for each of the four educational outcomes.

[46]The data for many countries begins in 1970, however, the data becomes more complete for years 1980 and beyond.

It is immediately apparent that there have been universal increases in all four educational outcomes in the vast majority of countries between 1980 and 2010.

Even the smallest changes for tertiary enrollment rates exceeded 100%, indicating that the rate more than doubled between 1980 and 2010. There are few negative percentage changes across all educational outcomes, except for the secondary enrollment ratio. Every country on the list of the smallest percentage changes in secondary enrollment ratios had a ratio close to 100% in 1980. Because they were closer to gender parity at the beginning of the period, there was little room to become more equal. Thus, is not surprising that highly developed countries like the United States, Sweden, Switzerland, France, and Japan appear in the list of countries with the smallest changes in that category.

Several countries experienced massive increases in educational outcomes during 1980-2010. Oman had virtually no females enrolled in tertiary education in 1980, this increased to 29.24% by 2010. Oman's male student population exceeded the female population dramatically in 1980 for tertiary education, but by 2010 more females were enrolled in tertiary education than males. The changes in secondary educational outcomes for Oman are just as staggering. The secondary enrollment rate was 4.03% in 1980, but it soared to 93.42% by 2010. The secondary enrollment ratio was 30.08% in 1980, but by 2010, it had increased to near parity (97.44%). Malta's tertiary enrollment rate went from 1.46% to 40.86% during the same period and the gender parity also tilted in favor of females during this time.

Almost every country in the sample experienced an increase in each of the educational outcomes. Most of the largest increases occurred in the Middle East, North Africa, and parts of Asia. Only a few countries experienced a decline in the educational outcomes of women. Secondary enrollment rates were lower in 2010 than they were in 1980 in Bulgaria, the Czech Republic, and Albania. Nearly all of the enrollment ratios that decreased during this period were for countries that initially had ratios close to parity. Overall, this presents an optimistic view of the changes that have been occurring in women's education.

Table 4.3: Largest Percentage Change in Gross Tertiary Enrollment Rates for Females from 1980-2010

Country	TEGF Pct. Change 1980-2010	TEGF 1980	TEGF 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Oman	1366152.34	0.00	29.24	96.55	-9.25	7.11	3.51	91.55	10438.90	22389.90	114.49
Rwanda	9123.44	0.05	4.77	9.00	-5.50	5.50	3.89	6.67	727.88	1025.22	40.85
Mauritius	5076.87	0.65	33.52	16.45	9.75	6.80	3.97	16.63	3073.56	10164.10	230.69
China	4542.32	0.59	27.19	1.48	-7.00	5.11	1.89	1.80	1085.24	7746.07	613.77
Malta	2706.85	1.46	40.86	0.00		6.46	4.37	0.36	9136.52	21850.40	139.15
Cyprus	2053.25	2.12	45.63	19.00	10.00	6.46	4.84	20.40	9035.24	18755.70	107.58
Tanzania	1985.33	0.09	1.90	31.58	-3.50	5.05	4.31	32.98	663.57	1178.49	77.60
Mali	1671.94	0.19	3.38	88.97	-0.25	5.59	3.64	89.59	535.75	997.97	86.27
Benin	1592.55	0.35	5.87	10.32	1.50	5.31	4.16	19.53	897.90	1176.87	31.07
Turkey	1527.68	3.06	49.87	99.01	4.50	5.43	2.48	98.48	5283.99	10438.00	97.54

Table 4.4: Smallest Percentage Change in Gross Tertiary Enrollment Rates for Females from 1980-2010

Country	TEGF Pct. Change 1980-2010	TEGF 1980	TEGF 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Japan	172.01	20.67	56.23	0.07	10.00	7.47	4.33	0.13	18748.50	31447.20	67.73
Sweden	166.07	33.79	89.90	0.10	10.00	7.07	6.68	2.67	22212.60	36132.40	62.67
Madagascar	148.72	1.42	3.52	1.75	-1.25	5.12	3.12	2.96	968.68	702.58	-27.47
Panama	142.49	22.96	55.68	1.47	5.00	6.85	4.28	0.63	5164.53	10857.10	110.22
Malawi	139.73	0.23	0.55	14.94	-1.50	5.10	4.02	16.51	735.40	655.61	-10.85
Israel	132.74	30.38	70.71	12.85	9.50	5.67	7.05	15.32	15114.30	26034.60	72.25
United States	103.91	54.61	111.35	1.17	10.00	8.21	5.20	0.97	24951.60	41365.00	65.78
Ecuador	71.93	24.83	42.69	0.00	7.25	5.51	3.15	0.00	5143.77	6226.77	21.05
Russian Federation	66.78	52.41	87.41	11.41	5.00	5.50	3.60	11.78		15067.60	
Philippines	19.43	26.22	31.31	4.57	3.75	6.36	2.47	5.06	2447.07	3193.90	30.52

Table 4.5: Largest Percentage Change in Tertiary Enrollment Ratios for Females Relative to Males from 1980-2010

Country	TER Pct. Change 1980-2010	TER 1980	TER 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Oman	1684.42	7.79	138.95	96.55	-9.25	7.11	3.51	91.55	10438.90	22389.90	114.49
Rwanda	684.02	9.77	76.57	9.00	-5.50	5.50	3.89	6.67	727.88	1025.22	40.85
Tanzania	304.77	20.32	82.27	31.58	-3.50	5.05	4.31	32.98	663.57	1178.49	77.60
Bangladesh	282.83	17.08	65.39	87.00	0.50	5.10	1.82	88.65	678.52	1371.01	102.06
Malta	272.84	36.47	135.99	0.00		6.46	4.37	0.36	9136.52	21850.40	139.15
Guyana	261.09	69.87	252.29	9.96	-0.50	6.25	6.75	8.24	3065.40	4477.55	46.07
Tunisia	239.00	43.71	148.19	97.58	-5.25	5.54	5.98	98.58	3821.03	6105.32	59.78
Mali	221.46	12.93	41.58	88.97	-0.25	5.59	3.64	89.59	535.75	997.97	86.27
China	213.74	34.90	109.51	1.48	-7.00	5.11	1.89	1.80	1085.24	7746.07	613.77
Sri Lanka	178.28	68.89	191.72	7.55	5.00	5.61	2.61	8.17	1324.45	4063.35	206.80

Table 4.6: Smallest Percentage Change in Tertiary Enrollment Ratios for Females Relative to Males from 1980-2010

Country	TER Pct. Change 1980-2010	TER 1980	TER 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Panama	25.05	123.06	153.89	1.47	5.00	6.85	4.28	0.63	5164.53	10857.10	110.22
Slovenia	24.59	115.93	144.45	2.40	2.50	6.35	5.37	2.54		24902.90	
Luxembourg	24.05	89.96	111.59	0.60	10.00	7.78	3.95	1.31	27793.50	75588.10	171.96
Albania	19.59	111.06	132.82	43.09	1.50	6.06	3.39	53.21	3489.61	6617.13	89.62
Lithuania	18.38	128.19	151.75	0.20	10.00	6.50	5.23	0.15		14136.10	
Poland	14.95	130.75	150.30	0.00	4.50	5.45	4.81	0.01	8667.48	16705.20	92.73
Philippines	5.11	117.89	123.92	4.57	3.75	6.36	2.47	5.06	2447.07	3193.90	30.52
Russian Federation	3.05	131.04	135.03	11.41	5.00	5.50	3.60	11.78		15067.60	
Cyprus	-0.04	89.74	89.70	19.00	10.00	6.46	4.84	20.40	9035.24	18755.70	107.58
Bulgaria	-7.20	140.93	130.78	13.00	4.50	5.49	3.87	12.68	5339.31	10589.60	98.33

Table 4.7: Largest Percentage Change in Gross Secondary Enrollment Rates for Females from 1980-2010

Country	SEGF Pct. Change 1980-2010	SEGF 1980	SEGF 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Oman	2219.29	4.03	93.42	96.55	-9.25	7.11	3.51	91.55	10438.90	22389.90	114.49
Tanzania	1183.82	2.21	28.42	31.58	-3.50	5.05	4.31	32.98	663.57	1178.49	77.60
Burundi	1033.21	1.67	18.96	0.96	-2.25	4.48	4.09	1.98	495.70	396.17	-20.08
Zambia	724.84	11.40	94.07		-2.50	5.43	2.62	0.70	1209.55	1517.24	25.44
Uganda	608.55	3.54	25.08	8.00	-2.25	5.12	3.51	10.93	535.55	1101.75	105.72
Mali	554.96	5.33	34.90	88.97	-0.25	5.59	3.64	89.59	535.75	997.97	86.27
Nepal	553.43	9.12	59.57	2.90	2.00	5.51	3.69	3.74	580.03	1145.24	97.44
Bangladesh	475.95	9.18	52.90	87.00	0.50	5.10	1.82	88.65	678.52	1371.01	102.06
Niger	414.07	2.16	11.12	88.00	-1.50	5.13	3.25	90.61	858.60	521.99	-39.20
Tunisia	402.57	18.34	92.18	97.58	-5.25	5.54	5.98	98.58	3821.03	6105.32	59.78

Table 4.8 Smallest Percentage Change in Gross Secondary Enrollment Rates for Females from 1980-2010

Country	SEGF Pct. Change 1980-2010	SEGF 1980	SEGF 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Barbados	8.23	98.08	106.15	0.17		6.17	6.97	0.50	24703.50	28088.50	13.70
Sweden	7.42	90.87	97.61	0.10	10.00	7.07	6.68	2.67	22212.60	36132.40	62.67
Congo, Rep.	6.38	46.85	49.84	0.39	-6.50	4.68	4.59	1.39	1874.04	2253.75	20.26
Switzerland	6.32	88.74	94.35	0.90	10.00	8.20	5.02	2.94	30020.60	39978.00	33.17
Finland	5.52	103.97	109.70	0.02	10.00	7.42	5.92	0.25	18966.30	32988.80	73.93
United States	3.52	90.51	93.70	1.17	10.00	8.21	5.20	0.97	24951.60	41365.00	65.78
The Bahamas	0.19	95.13	95.30			6.52	2.85		23379.20	30111.00	28.79
Bulgaria	-0.65	88.92	88.34	13.00	4.50	5.49	3.87	12.68	5339.31	10589.60	98.33
Czech Republic	-2.93	97.62	94.76	0.00	4.75	6.61	4.15	0.01		23396.00	
Albania	-4.26	83.90	80.33	43.09	1.50	6.06	3.39	53.21	3489.61	6617.13	89.62

Table 4.9: Largest Percentage Change in Secondary Enrollment Ratios for Females Relative to Males from 1980-2010

Country	SER Pct. Change 1980-2010	SER 1980	SER 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Nepal	264.63	26.65	97.18	2.90	2.00	5.51	3.69	3.74	580.03	1145.24	97.44
Bangladesh	243.43	33.20	114.03	87.00	0.50	5.10	1.82	88.65	678.52	1371.01	102.06
Oman	223.96	30.08	97.44	96.55	-9.25	7.11	3.51	91.55	10438.90	22389.90	114.49
Malawi	118.20	41.66	90.91	14.94	-1.50	5.10	4.02	16.51	735.40	655.61	-10.85
Pakistan	109.70	36.00	75.50	96.00	0.25	5.28	2.34	95.55	1166.89	2297.05	96.85
Niger	95.08	34.68	67.65	88.00	-1.50	5.13	3.25	90.61	858.60	521.99	-39.20
Uganda	93.73	42.98	83.27	8.00	-2.25	5.12	3.51	10.93	535.55	1101.75	105.72
Turkey	89.77	48.43	91.90	99.01	4.50	5.43	2.48	98.48	5283.99	10438.00	97.54
Nigeria	87.22	47.05	88.09	45.36	2.50	4.46		48.15	1601.98	1695.45	5.83
India	87.08	49.07	91.79	11.96	8.50	5.83	3.39	12.52	1028.48	3477.31	238.10

Table 4.10: Smallest Percentage Change in Secondary Enrollment Ratios for Females Relative to Males from 1980-2010

Country	SER Pct. Change 1980-2010	SER 1980	SER 2010	IsPct 1980	Avg. Polity2 1980-2010	Avg. EFW 1980-2010	Avg. GES 1980-2010	Avg. IsPct 1980-2010	PC GDP 1980	PC GDP 2010	Pct. Change PCGDP 1980-2010
Israel	-6.91	110.05	102.45	12.85	9.50	5.67	7.05	15.32	15114.30	26034.60	72.25
Bahamas, The	-6.96	113.27	105.39			6.52	2.85		23379.20	30111.00	28.79
Ukraine	-7.06	105.03	97.61	1.94	1.25	4.88	5.60	1.47		7044.37	
Ireland	-7.15	113.08	105.00	0.11	10.00	7.54	5.12	0.38	14642.40	34876.70	138.19
Jamaica	-8.22	112.41	103.17	0.00	9.50	6.17	4.98	0.07	7027.86	8538.64	21.50
France	-9.07	110.97	100.90	3.43	8.75	6.91	5.29	5.52	21441.20	31299.30	45.98
Philippines	-9.29	119.36	108.27	4.57	3.75	6.36	2.47	5.06	2447.07	3193.90	30.52
Sweden	-10.73	110.82	98.94	0.10	10.00	7.07	6.68	2.67	22212.60	36132.40	62.67
Costa Rica	-11.13	118.94	105.70	0.00	10.00	6.61	4.69	0.00	8229.25	11500.10	39.75
Botswana	-11.44	120.22	106.47	0.03	7.25	6.44	7.17	1.18	3390.62	9675.35	185.36

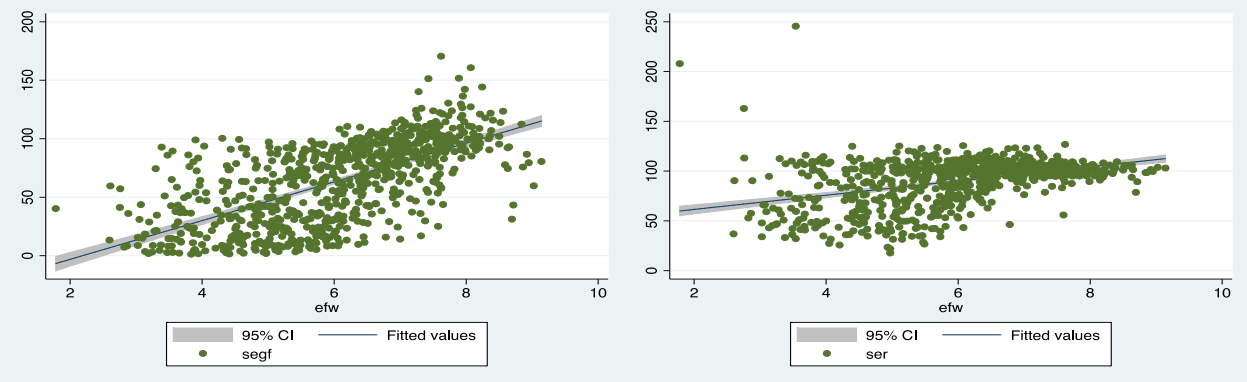

Figure 4.2: The Relationship between Economic Freedom and Secondary Education Measures

Figure 4.2 presents the scatter plot graphs between economic freedom and the secondary education measures. The left panel of Figure 4.2 depicts a scatter plot of the relationship between economic freedom score and secondary school enrollment rates for females. The scatter plot in the right panel shows the relationship between the economic freedom score and the ratio of female enrollment rates in secondary schooling to male enrollment rates. In both cases, the relationship is positive. This indicates that greater economic freedom is associated with higher secondary education enrollment rates for females, as well as gender enrollment ratios that are closer to parity.

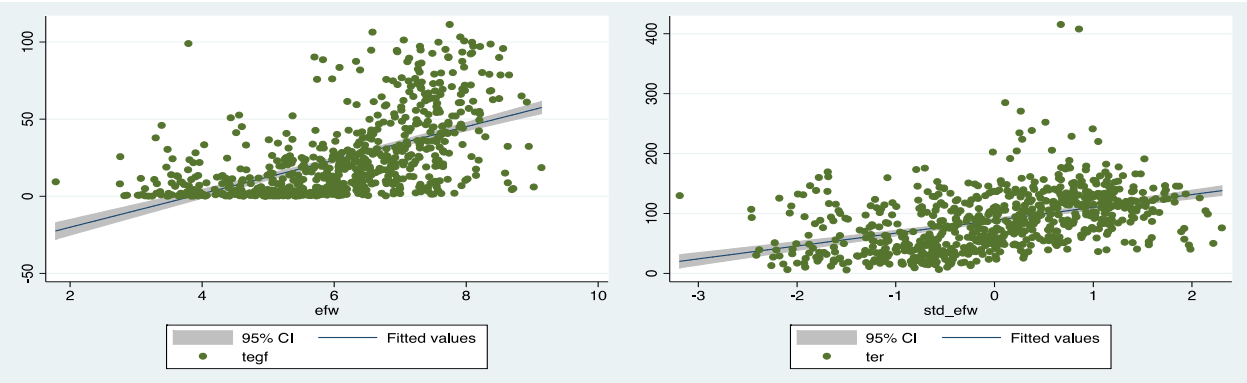

Figure 4.3: The Relationship between Economic Freedom and Tertiary Education Measures

The scatterplot graphs between economic freedom and the tertiary education measures are depicted in Figure 4.3. The left panel of Figure 4.3 depicts a scatter plot of the relationship between economic freedom score and tertiary school enrollment rates for females. The scatter plot in the right panel shows the relationship between the economic freedom score and the ratio of female enrollment rates in tertiary schooling to male enrollment rates. As with the secondary education outcomes, both panels depict a positive relationship between economic freedom and the education outcome.

Figures 4.4 through 4.7 depict changes in educational outcomes between 1980 and 2010 by sorting the sample into quartiles from highest EFW scores to the lowest. The average EFW score is calculated for each quartile in both 1980 and 2010. The highest average EFW scores are indicated by Q1, the second highest by Q2, the third highest by Q3, and the lowest by Q4.

These figures paint a slightly different picture for the ratios of female enrollment rates to male enrollment rates. The highest average secondary enrollment ratio was in Q1 at the start of the period. By 2010, however, Q3 had the highest secondary enrollment ratio. In both 1980 and 2010, Q2 boasted the highest tertiary ratio. For every education outcome, in both years, Q4 has the lowest average enrollment figures.[47]

Some countries have data in 1980 and not in 2010, and vice versa. The left panels in Figures 4.4 through 4.7 include all available data for all countries, while the right panels includes only countries with data available for both 1980 and 2010.

In Figure 4.4, it is evident that countries belonging to quartiles with higher average economic freedom levels also have much higher average enrollment rates for females in secondary schooling. This relationship is fairly well pronounced, and there is a similar pattern in both 1980 and 2010. The data provides evidence that there have been notable increases in the average secondary enrollment rate for females living across all four economic freedom quartiles. Secondary enrollment rates in 1980 were between 77.91% and 80.49% in the countries with the most economic freedom, and between 30.35% and 31.81% for countries in the least free quartile. By 2010, however, the enrollment rates for the top quartile increased to between 95.53% and 101.41% and to between 55.98% and 57.82% for those in the bottom quartile.

[47] This exercise was repeated sorting the data into quartiles according to per capita income, the size of the Muslim population, and how democratic are the political institutions. Both higher average per capita income levels and more democratic political institutions are associated with higher education enrollment outcomes. The greater the size of the Islamic population, however, is associated with lower education enrollment outcomes. While these figures are not reported in this paper, they are available upon request.

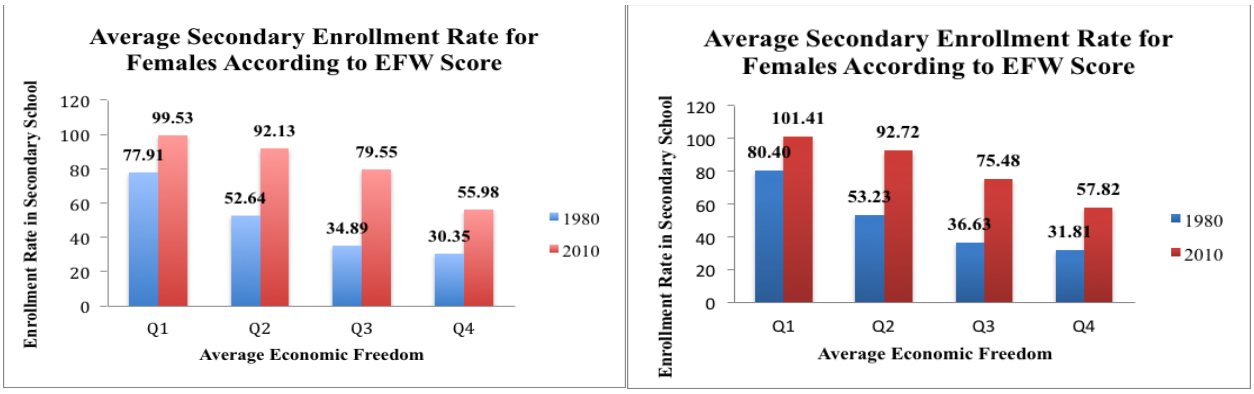

Figure 4.4: Secondary Enrollment Rate by Economic Freedom Quartile[48]

As with secondary enrollment rates, countries in the quartiles with higher levels of economic freedom also have higher average enrollment rates for females in tertiary schooling. The average tertiary enrollment rate for countries in the top EFW quartile was between 17.06% and 19.37%, while it was between 5.99% and 6.21% for countries in the bottom quartile. By 2010, the average tertiary enrollment rate was between 64.31% and 69.74% for countries in the top quartile, and between 18.87 and 25.99% for countries in the least free quartile.

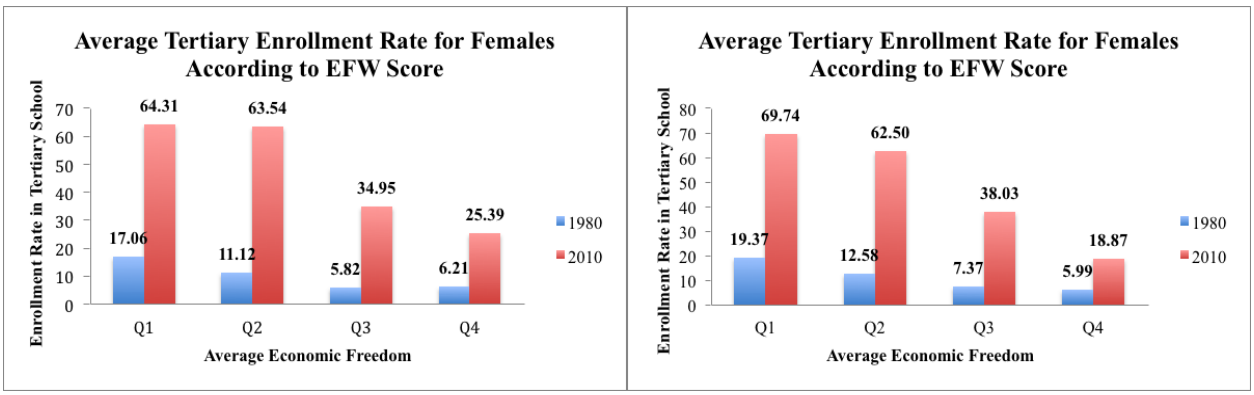

Figure 4.5: Tertiary Enrollment Rate by Economic Freedom Quartile[49]

[48] The average EFW scores for each quartile in the left panel of Figure 4.5 are: Q1 [EFW 1980 = 6.87; 2010 = 7.84]; Q2 [EFW 1980 = 5.57; 2010 = 7.25]; Q3 [EFW 1980 = 4.83; 2010 = 6.69]; Q4 [EFW 1980 = 3.74; 2010 = 5.65]. The average EFW scores for each quartile in the right panel are: Q1 [EFW 1980 = 6.94; 2010 = 7.90]; Q2 [EFW 1980 = 5.63; 2010 = 7.32]; Q3 [EFW 1980 = 4.87; 2010 = 6.70]; Q4 [EFW 1980 = 3.68; 2010 = 5.66].

[49] The average EFW scores for each quartile in the left panel of Figure 4.6 are: Q1 [EFW 1980 = 6.92; 2010 = 7.85]; Q2 [EFW 1980 = 5.62; 2010 = 7.27]; Q3 [EFW 1980 = 4.87; 2010 = 6.67]; Q4 [EFW 1980 = 3.80; 2010 = 5.54].

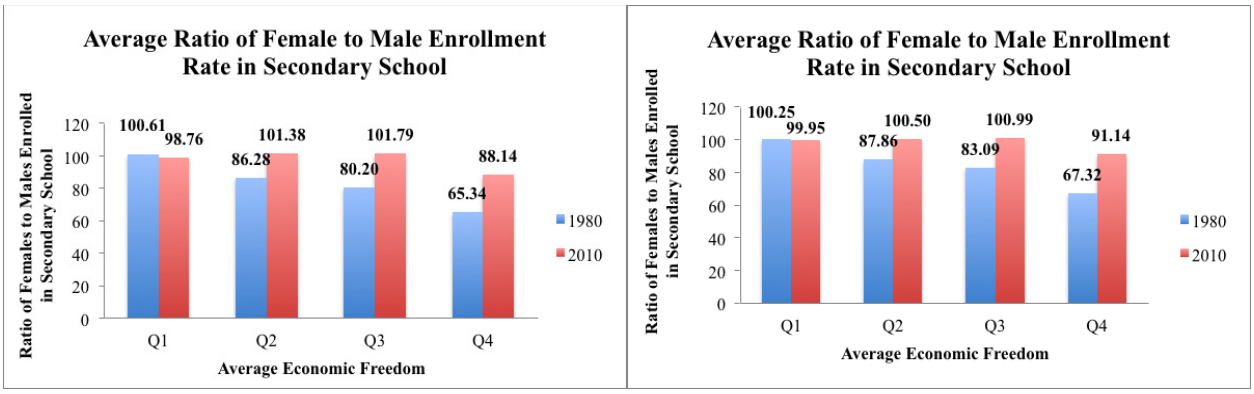

Figure 4.6: Secondary Enrollment Ratio by Economic Freedom Quartile[50]

Figure 4.6 shows that in 1980, countries in higher economic freedom quartiles had secondary school enrollment ratios closer to parity than countries in lower economic freedom quartiles. However, countries in all quartiles have made movements toward greater gender parity in terms of secondary enrollment ratios. By 2010, the difference in enrollment ratios across quartiles is less pronounced.

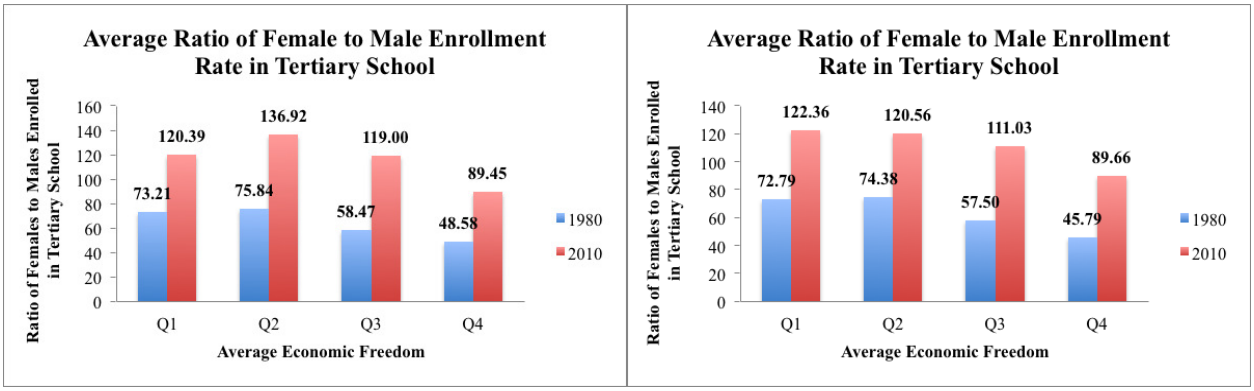

Figure 4.7: Tertiary Enrollment Ratio by Economic Freedom Quartile[51]

The average EFW scores for each quartile in the right panel are: Q1 [EFW 1980 = 7.02; 2010 = 7.95]; Q2 [EFW 1980 = 5.68; 2010 = 7.41]; Q3 [EFW 1980 = 4.93; 2010 = 6.73]; Q4 [EFW 1980 = 3.82; 2010 = 5.74].

[50] The average EFW scores for each quartile in the left panel of Figure 4.6 are: Q1 [EFW 1980 = 6.87; 2010 = 7.84]; Q2 [EFW 1980 = 5.57; 2010 = 7.25]; Q3 [EFW 1980 = 4.83; 2010 = 6.69]; Q4 [EFW 1980 = 3.74; 2010 = 5.65]. The average EFW scores for each quartile are: Q1 [EFW 1980 = 6.94; 2010 = 7.90]; Q2 [EFW 1980 = 5.63; 2010 = 7.32]; Q3 [EFW 1980 = 4.87; 2010 = 6.70]; Q4 [EFW 1980 = 3.68; 2010 = 5.66].

[51] The average EFW scores for each quartile in the left panel of Figure 4.7 are: Q1 [EFW 1980 = 6.92; 2010 = 7.85]; Q2 [EFW 1980 = 5.62; 2010 = 7.27]; Q3 [EFW 1980 = 4.87; 2010 = 6.67]; Q4 [EFW 1980 = 3.80; 2010 = 5.54].

The left panel of Figure 4.7 includes all available data. In both periods, countries in the upper economic freedom quartiles had higher male-to-female enrollment ratios in tertiary education. Females were enrolled in tertiary education at 75% of the rate that males were enrolled in 1980. By 2010, the enrollment rate for females outpaced that of males in all but the least economically free quartile.

The broad patterns in the data suggest a positive relationship between economic freedom and enrollment rates. The highest average levels of economic freedom are not always associated with the highest average education outcome. However, the lowest average levels of economic freedom are always associated with the lowest enrollment rates and ratios. The next section explores these broad relationships in detail.

4.4 Empirical Methods and Estimation Results

4.4.1 Panel Data Analysis from 1970-2010: Fixed Effects

To begin to assess the impact of economic freedom on women's educational outcomes, a series of OLS regression models with country fixed effects are estimated on a panel of data. Where Edu_i, represents one of the four educational outcomes of interest EFW_{it} represents the standardized Economic Freedom of the World score. Per capita GDP ($lnPCGDP_i$), a standardized measure of political institutions ($Polity_i$), total government spending on education as a percentage of total GDP ($GovSpend_i$), and a proxy variable for cultural norms ($IsPct_i$) are also included. Three different regression specifications are used to examine the variation in educational outcomes.[52] Each regression in this section is estimated twice, once without time dummy variables and once including them.

It is necessary to control for time-invariant country characteristics, such as geography and some slower-moving aspects of culture. These fixed effects may be correlated with the explanatory variables rendering standard OLS regression analysis inadequate. The unobserved characteristics of specific countries, the fixed effects, are contained in the error term, c_i, and the

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The average EFW scores for each quartile in the right panel are: Q1 [EFW 1980 = 7.02; 2010 = 7.95]; Q2 [EFW 1980 = 5.68; 2010 = 7.41]; Q3 [EFW 1980 = 4.93; 2010 = 6.73]; Q4 [EFW 1980 = 3.82; 2010 = 5.7].

[52] In specifications not provided in this paper, alternative measures of some of the independent variables were used. Freedom House's measures of political freedom and civil liberties are used in lieu of the Polity measure. Additionally, government spending on education per pupil as a percentage of per capita GDP is used instead of the total spending measure. These substitutions do not significantly alter the relationship between educational outcomes and economic freedom. They are not included here but are available upon request.

observation-specific errors are denoted by, u_{it}.[53] The fixed effects model controls for the characteristics that are held constant over time.[54]

As indicated in Table 4.2, economic freedom, per capita GDP, and political institutions are all correlated. Since the evidence in the literature indicates that a positive, causal, relationship between economic freedom and per capita GDP exists, including a measure of per capita GDP in the same regression as economic freedom understates the true impact of economic freedom. To account for this, the first regression specification (1) estimates a two-stage model to capture both the direct and indirect impact of economic freedom that acts through per capita income. In the first stage, per capita income is estimated as a function of the remaining four explanatory variables and the residuals are captured.[55] The second stage estimates educational outcomes as a function of all of the explanatory variables, using the residuals from the first stage instead of per capita income. Equations (4.1) and (4.2) depict this empirical model. The standard errors for the one-stage regressions are robust standard errors clustered around each country and adjusted for serial correlation. The two-stage regressions require bootstrapped standard errors.

$$(4.1) \quad lnPC\ GDP_{it} = \beta_0 + \beta_1 EFW_{it} + \beta_2 Polity_{it} + \beta_3 GovSpend_{it} + \beta_4 IsPct_{it} + c_i + \mu_{it}$$

$$(4.2) \quad Edu_{it} = \beta_0 + \beta_1 EFW_{it} + \beta_2 Polity_{it} + \beta_3 GovSpend_{it} + \beta_4 IsPct_{it} + ln\ PC\ GDP\ resids_{it} + c_i + \mu_{it}$$

A second specification considers the interaction between some of the main explanatory variables. These terms are included to account for the fact that economic freedom may be more

[53] Specifications of the fixed effects model that included time fixed effects were run. Their inclusion reduced the significance of all of the explanatory variables and rendered EFW insignificant. While the results for tests of joint significance of the coefficients on the time dummy variables indicated that they should be included, there is no theoretical reason to believe that there were any drastic changes in educational outcomes related to a specific year or specific periods. A close examination of the data indicates that there were increases in educational outcomes for all countries during the time period examined. The time fixed effects seem to be picking up this trend but they are not the root cause of these increases. These results are reported in the regression tables

[54] A Hausman test confirms that a model with fixed effects is better suited to addressing the relationship between economic freedom and tertiary educational outcomes, but random affects may be more suited to address the relationship between economic freedom and secondary outcomes. Theory suggests that fixed effects would be more suitable in all cases, the statistical test suggests otherwise for the ratio of females to males enrolled in secondary education. Thus, the results for both fixed effects and random effects are reported for this outcome variable. The results of the Hausman test are reported in Table 4.16.

[55] Bootstrap standard errors are used to account for the additional noise introduced by this method.

or less effective depending upon the level of development and the quality of political institutions. Additionally, the level of development may also influence the effectiveness of political institutions. Thus, interaction terms between economic freedom, political institutions, and the level of development are included. Equation (4.3) describes this empirical model. It is important to note that including the interaction terms changes the interpretation of the coefficient on economic freedom in that it provides the impact of economic freedom given that the values for the interaction terms are equal to zero- a condition highly unlikely to happen.

$$(4.3) \quad Edu_{it} = \beta_0 + \beta_1 EFW_{it} + \beta_2 lnPCGDP_{it} + \beta_3 Polity_{it} + \beta_4 GovSpend_{it} + \beta_5 IsPct_{it} + \beta_6 EFW_{it} * Polity_{it} + \beta_7 EFW_{it} * lnPCGDP_{it} + \beta_9 Polity_{it} * lnPCGDP_{it} + c_i + \mu_{it}$$

Finally, another two-stage regression is estimated in the third specification. The first stage of the regression is identical to equation (4.1). The second stage regression is shown in equation (4.4). It is similar to equation (4.3), as it includes the three interaction terms. The difference is that the residuals from equation (4.1) are used in lieu of per capita income. Thus, the coefficient on economic freedom provides a measure of the impact of economic freedom that is not transmitted through per capita income when both $Polity_i$and $lnPCGDP_i$ are equal to zero.

$$(4.4) \quad Edu_i = \beta_0 + \beta_1 EFW_{it} + \beta_2 lnPCGDP\ resids_{it} + \beta_3 Polity_{it} + \beta_4 GovSpend_{it} + \beta_5 IsPct_{it} + \beta_6 EFW_{it} * Polity_{it} + \beta_7 EFW_{it} * lnPCGDP_{it} + \beta_9 Polity_{it} * lnPCGDP_{it} + c_i + u_{it}$$

Table 4.11 and Table 4.12 presents the results of the panel data estimates. Since there is a theoretical expectation that unobservable factors at the country level are important, country fixed effects are included in the regressions for each of the four educational outcomes. Table 4.13 presents the results of random effects estimates when the dependent variable is the secondary enrollment ratio. This is because the results of the Hausman test indicate that random effects might be a better fit when the secondary enrollment ratio is the dependent variable. Between 14.50 and 82.02 percent of the variation in educational outcomes are explained by these panel estimates.

When time dummy variables are not included, the coefficients on EFW are positive and significant at the 1% level in the first specification (1) for all educational outcomes except the secondary enrollment ratios. In these regressions, a one-standard deviation increase in a country's EFW score is associated with a 13.10, 15.57, and 10.41 percentage point increase in tertiary enrollment rates, tertiary enrollment ratios, and secondary enrollment rates, respectively. Specification (3) indicates that the same increase in EFW scores is associated with an increase of 10.49 and 9.51 percentage points in tertiary enrollment ratios and secondary enrollment rates, respectively. This indicates that increases in economic freedom, within a particular country over time, are associated with increased educational outcomes.

When interaction terms and time dummies are included, however, economic freedom loses significance and the coefficient switches signs in most cases. The coefficients on per capita income and political institutions also switch signs or lose significance in many of these specifications. Per capita income has the most robust results, only losing significance in four out of 28 regressions. As these coefficients relate to the cases in which the interaction terms are zero, a case that is highly unlikely to occur in practice, the fact that they have switched signs is not a concern. The interaction terms themselves do not exhibit any discernable pattern, with the interaction between economic freedom and income being significant and positive for tertiary enrollment rates and ratios, insignificant for secondary enrollment rates, and negative for secondary enrollment ratios. The coefficient on the interaction term indicates that economic freedom and per capita income work together to increase tertiary educational outcomes for women. However, each of these factors may be less effective at increasing the enrollment rates for women when the other is lacking.

It is notable that the measure of government spending on education is always positive and significant at the 1% level. This result should be interpreted with caution, because it may reflect the fact that countries with higher enrollment rates will generally spend a larger amount of money on education.[56] Further, the percentage of the population that is Muslim is positive and significant in almost all estimations. At the beginning of the period, the countries with larger Muslim populations had far lower enrollment rates for women relative to the rest of the world,

[56]Alternative specifications were estimated that excluded the measure of government spending on education, as well as specifications that dropped Area 1 from the EFW index summary score when the spending measure is included. Neither of these exercises resulted in any notable change the pattern of significance or the sign and magnitudes of the coefficients.

and thus more room for them to increase. The positive coefficient on this term is indicative of a kind of convergence. For example, a country like Oman had an enrollment rate of less than 1% of females (0.002%) in 1980. But by 2010, the enrollment rate had increased to 29.24%. For Iran, the tertiary enrollment rate was 3.00% in 1980 and 42.89% by 2010. This pattern holds for most of the countries with large percentages of the population practicing Islam.

Table 4.11: First Stage Regression for Panel Analysis (1) and (3)

Fixed Effects with ln PC GDP as Dependent Variable	
STD_EFW	0.2298***
	(0.0334)
STD_Polity2	-0.0206
	(0.0354)
GES	0.0523***
	(0.0131)
IsPct	0.0266**
	(0.0156)
Observations	647
Countries	112
Within R-Squared	0.3714
Random Effects with ln PC GDP as Dependent Variable	
STD_EFW	0.2592***
	(0.0322)
STD_Polity2	-0.0086
	(0.0333)
GES	0.0587***
	(0.0148)
IsPct	-0.0034
	(0.0035)
Observations	647
Countries	112
Within R-Squared	0.3480

Bootstrapped standard errors are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.12 Results of Panel Analysis with Fixed Effects

Dependent Variable is Tertiary Enrollment Rate for Females						
	(1)		(2)		(3)	
STD_EFW	13.0980***	2.8813	-5.2061***	-9.0531***	0.4820	-7.3002***
	(1.6475)	(1.8943)	(1.7457)	(1.8573)	(1.8497)	(2.1407)
STD_Polity2	-0.8246	-3.9836**	-1.7113	-5.9492***	-2.1831*	-6.1066***
	(1.6878)	(1.8870)	(1.2700)	(1.4286)	(1.2939)	(1.4412)
Ln PC GDP			22.8687***	7.6295***		
			(2.6870)	(2.6645)		
GES	5.5018***	3.0902***	3.9857***	2.2834***	5.1821***	2.6825***
	(1.0156)	(0.8502)	(0.8609)	(0.6409)	(0.8800)	(0.6516)
IsPct	1.9991***	0.2108	0.8878***	-0.2283	1.4967***	-0.0251
	(0.4574)	(0.4296)	(0.2806)	(0.2255)	(0.3109)	(0.2591)
Ln PC GDP Residuals	30.2605***	13.7720***			22.8687***	7.6295***
	(3.7944)	(4.1585)			(2.8130)	(2.8584)
STD_EFW x STD_Polity 2			-1.5362	-0.7760	-1.5362	-0.7760
			(1.3890)	(1.2025)	(1.3925)	(1.2201)
STD_EFW x Ln PC GDP			7.7921***	6.6002***	7.7921***	6.6002***
			(0.8949)	(0.9085)	(0.9573)	(0.9602)
STD_Polity2 x Ln PC GDP			1.7161	3.2975***	1.7161	3.2975***
			(1.0545)	(0.8133)	(1.0795)	(0.8455)
1975		1.4487		3.3339*		3.3339*
		(2.9059)		(1.7876)		(1.8723)
1980		6.4723*		5.7124**		5.7124**
		(3.5669)		(2.2904)		(2.3669)
1985		9.1009**		7.4784***		7.4784***
		(3.7153)		(2.3943)		(2.4546)
1990		13.3927***		9.2929***		9.2929***
		(4.1758)		(2.9884)		(3.0143)
1995		18.4304***		14.5490***		14.5490***
		(5.0237)		(4.1578)		(3.6926)
2000		26.7001***		21.7873***		21.7863***
		(5.5031)		(4.1578)		(4.1216)
2005		33.3138***		28.4643***		28.4643***
		(5.8792)		(4.4311)		(4.3890)
2010		38.2363***		34.8543***		34.8543***
		(6.2443)		(4.9147)		(4.8218)
Observations	529	529	529	529	529	529
Countries	108	108	108	108	108	108
Within R-Squared	0.5963	0.6986	0.7312	0.8202	0.7312	0.8202

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.12 - Continued

Dependent Variable is Tertiary Enrollment Ratio						
	(1)		**(2)**		**(3)**	
STD_EFW	15.5683***	-0.7362	3.1418	-3.2057	10.4929***	-2.0312
	(2.0125)	(2.013)	(2.2739)	(2.0983)	(2.5733)	(2.2805)
STD_Polity2	2.8355	-3.1507*	4.7740**	-2.8684*	4.1139*	-2.9739
	(2.2904)	(1.7471)	(2.1358)	(1.6187)	(2.3831)	(1.8545)
Ln PC GDP			31.9950***	5.1120		
			(6.5144)	(4.8023)		
GES	4.2423***	0.8410	2.4975**	0.3735	4.1713***	0.6410
	(1.2021)	(0.9994)	(1.2415)	(1.0034)	(1.2105)	(1.0099)
IsPct	3.0173***	0.1103	1.9675***	-0.0752	2.8196***	0.0609
	(0.5533)	(0.4603)	(0.5458)	(0.4268)	(0.5522)	(0.4596)
Ln PC GDP Residuals	33.9465***	6.4941			31.9950***	5.1120
	(6.4389)	(4.8703)			(6.5555)	(4.9180)
STD_EFW x STD_Polity 2			-0.4094	0.9607	-0.4094	0.9607
			(2.1427)	(1.6786)	(2.2515)	(1.7546)
STD_EFW x Ln PC GDP			3.1659**	0.5999	3.1659**	0.5999
			(1.3277)	(1.1597)	(1.4239)	(1.2239)
STD_Polity2 x Ln PC GDP			-0.8736	0.5728	-0.8736	0.5728
			(1.8307)	(1.1831)	(2.0289)	(1.3369)
1975		5.8716**		6.2123**		6.2123**
		(2.6464)		(2.4322)		(2.5542)
1980		15.7546***		15.6325***		15.6325***
		(3.2252)		(3.0606)		(3.1166)
1985		24.0343***		23.8571***		23.8571***
		(3.8779)		(3.7952)		(3.8161)
1990		34.5755***		33.9323***		33.9323***
		(4.1362)		(4.1411)		(4.1102)
1995		40.2059***		39.8191***		39.8191***
		(4.9632)		(5.1540)		(4.9620)
2000		53.6476***		53.0656***		53.0656***
		(4.6533)		(4.8556)		(4.7152)
2005		53.6476***		59.1377***		59.1377***
		(5.0146)		(5.1915)		(5.0733)
2010		65.7041***		65.4915***		65.4915***
		(5.4455)		(5.7997)		(5.5821)
Observations	529	529	529	529	529	529
Countries	108	108	108	108	108	108
Within R-Squared	0.5309	0.6883	0.5418	0.6907	0.5418	0.6907

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.12 - Continued

Dependent Variable is Secondary Enrollment Rate for Females						
	(1)		**(2)**		**(3)**	
STD_EFW	10.4101***	2.2162*	4.4932**	1.4002	9.5139***	3.2346
	(1.2183)	(1.3156)	(2.0231)	(2.2292)	(2.0465)	(2.4604)
STD_Polity2	5.0060***	1.4915	4.5191**	-0.0370	4.0682**	-0.2017
	(1.6089)	(1.3070)	(1.8788)	(1.9251)	(2.0030)	(1.9720)
Ln PC GDP			21.8525***	7.9837***		
			(2.5192)	(2.2151)		
GES	3.8619***	2.1448***	2.8749***	1.8251**	4.0181***	2.2427***
	(0.8953)	(0.8263)	(0.9234)	(0.8402)	(0.9144)	(0.8256)
IsPct	1.1072**	-0.1217	0.5143	-0.2871	1.0963***	-0.0749
	(0.3932)	(0.3142)	(0.3713)	(0.2975)	(0.3967)	(0.3108)
Ln PC GDP Residuals	21.2926***	7.5261***			21.8525***	7.9837***
	(2.4396)	(2.3528)			(2.6416)	(2.3815)
STD_EFW x STD_Polity 2			-2.0718	-1.0627	-2.0718	-1.0627
			(1.4026)	(1.2690)	(1.5406)	(1.3654)
STD_EFW x Ln PC GDP			0.9327	-0.6127	0.9327	-0.6127
			(1.0499)	(1.0744)	(1.1108)	(1.1692)
STD_Polity2 x Ln PC GDP			-0.1653	0.7797	-0.1653	0.7797
			(1.3300)	(1.0795)	(1.3953)	(1.1637)
1975		5.6592***		5.6592***		5.0304***
		(1.8696)		-1.8585		(1.9417)
1980		11.1494***		11.1494***		10.8136***
		(2.7913)		-2.8131		(2.8130)
1985		15.3878***		15.3878***		14.9567***
		(2.8347)		-2.8868		(2.8852)
1990		19.0184***		19.0184***		18.7084***
		(2.9211)		-2.9652		(2.9120)
1995		27.6435***		27.6435***		27.5712***
		(3.5339)		-3.5224		(3.5044)
2000		30.3406***		30.3406***		30.4649***
		(3.8239)		-3.7539		(3.7282)
2005		32.7265***		32.7265***		32.9084***
		(4.0342)		-3.9558		(3.9065)
2010		35.7412***		35.7412***		35.6649***
		(4.3352)		-4.2855		(4.2277)
Observations	589	589	589	589	589	589
Countries	109	109	109	109	109	109
Within R-Squared	0.5421	0.6623	0.5461	0.6654	0.5461	0.6654

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.12 - Continued

Dependent Variable is Secondary Enrollment Ratio						
	(1)		(2)		(3)	
STD_EFW	0.6161	-3.0921	1.9460	0.4724	6.4586**	3.5589
	(1.9730)	(2.2981)	(3.0237)	(3.1353)	(2.7734)	(2.8090
STD_Polity2	4.0713**	2.2737	6.7990***	4.6021*	6.3938***	4.3631*
	(1.9036)	(1.8891)	(2.1272)	(2.3515)	(2.3335)	(2.4892)
Ln PC GDP			19.6407***	13.4336**		
			(4.3221)	(5.4576)		
GES	1.7845**	1.1058	1.1880*	0.9597	2.2155***	1.6625*
	(0.8359)	(0.9367)	(0.6731)	(0.6838)	(0.8025)	(0.8607)
IsPct	0.6776*	0.0637	0.4132	-0.0494	0.9363***	0.3084
	(0.4190)	(0.4517)	(0.2663)	(0.2311)	(0.3345)	(0.3424)
Ln PC GDP Residuals	13.5740***	7.3084			19.6407***	13.4336**
	(4.5238)	(5.7620)			(4.3815)	(5.4966)
STD_EFW x STD_Polity 2			-1.6881	-1.1551	-1.6881	-1.1551
			(2.2582)	(2.2993)	(2.3768)	(2.3806)
STD_EFW x Ln PC GDP			-2.8320**	-3.6752***	-2.8320**	-3.6752***
			(1.3103)	(1.2975)	(1.3750)	(1.3613)
STD_Polity2 x Ln PC GDP			-3.7735**	-3.6506**	-3.7735**	-3.6506**
			(1.5845)	(1.5104)	(1.6747)	(1.6074)
1975		6.0664*		4.1440		4.1440
		(3.1905)		(2.9835)		(2.8658)
1980		4.8696		4.3003		4.3003
		(4.2700)		(3.8918)		(3.8084)
1985		8.7210**		8.7668***		8.7668***
		(3.8599)		(3.1026)		(3.1564)
1990		11.1644***		12.6356***		12.6356***
		(4.0416)		(3.2942)		(3.4014)
1995		14.4985***		15.2077***		15.2077***
		(4.5322)		(4.1314)		(4.0665)
2000		16.2516***		17.7091***		17.7091***
		(4.9146)		(4.7676)		(4.7134)
2005		16.6400***		17.9262***		17.9262***
		(5.5982)		(5.3601)		(5.3303)
2010		17.2710***		16.8517***		16.8517***
		(5.9559)		(5.7442)		(5.7209)
Observations	592	592	592	592	592	592
Countries	110	110	110	110	110	110
Within R-Squared	0.1515	0.2041	0.2929	0.3611	0.2929	0.3611

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.13: Results of Panel Analysis with Random Effects

Dependent Variable is Secondary Enrollment Ratio						
	(1)		**(2)**		**(3)**	
STD_EFW	1.2280	-1.8037	4.228	1.8819	7.1277**	4.9005*
	(1.8989)	(2.2682)	(3.0155)	(3.0754)	(2.9673)	(2.9090)
STD_Polity2	4.0361**	2.6276	7.7386***	5.7829***	7.6418***	5.6822***
	(1.7212)	(1.7722)	(2.0395)	(2.0585)	(2.4591)	(2.5174)
Ln PC GDP			11.1881***	11.6478***		
			(1.7091)	(1.8049)		
GES	1.5627**	1.1879*	1.2342**	0.9202*	1.8914***	1.6044***
	(0.6524)	(0.6383)	(0.5919)	(0.5463)	(0.6152)	(0.5826)
IsPct	-0.1420***	-0.1885***	-0.1737***	-0.2214***	-0.2117**	-0.2609***
	(0.0483)	(0.0504)	(0.0433)	(0.0452)	(0.0495)	(0.0474)
Ln PC GDP Residuals	9.6646***	9.6144***			11.1881***	11.6478***
	(1.7076)	(1.8619)			(1.6193)	(1.7270)
STD_EFW x STD_Polity 2			-0.6005	-0.4616	-0.6005	-0.4616
			(2.1471)	(2.1694)	(2.3953)	(2.3727)
STD_EFW x Ln PC GDP			-3.0605***	-3.8595***	-3.0605***	-3.8595***
			(1.1651)	(1.0891)	(1.2728)	(1.1381)
STD_Polity2 x Ln PC GDP			-3.9482***	-3.8173***	-3.9482***	-3.8173***
			(1.3114)	(1.2506)	(1.5301)	(1.4357)
1975		5.6165		5.0961		5.0961
		(3.5300)		(3.3019)		(3.4523)
1980		4.3583		5.5095**		5.5095**
		(3.0522)		(2.3063)		(2.5681)
1985		7.9185***		9.8363***		9.8363***
		(2.9288)		(2.3063)		(2.3849)
1990		9.8942***		13.3974***		13.3974***
		(2.8354)		(2.2872)		(2.4136)
1995		12.8665***		15.1495***		15.1495***
		(3.1432)		(2.7143)		(2.6575)
2000		14.2525***		17.3291***		17.3291***
		(3.4243)		(3.2111)		(3.0813)
2005		14.5556***		17.8214***		17.8214***
		(3.6603)		(3.4120)		(3.3041)
2010		14.8391***		16.9184***		16.9198***
		(3.6218)		(3.4398)		(3.3410)
Observations	592	592	592	592	592	592
Countries	110	110	110	110	110	110
Within R-Squared	0.1450	0.2020	0.2581	0.3565	0.2581	0.3565

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Economic freedom seems to be unimportant when examining the changes in secondary education ratios. The coefficient on economic freedom is rarely significant for this variable. The measures of per capita income and political institutions, however, are positive and significant in most cases. This indicates that political institutions and income levels matter the most when it comes to achieving parity between male and females enrollment in secondary education. This may be due to the prevalence of compulsory education laws for at least part of secondary education across the world. Additionally, the explanatory power of the estimates for secondary enrollment ratios is far lower than that of the other three educational outcomes. This indicates that some other factor not considered in this study is driving the results[57].

It is also notable that the measure of per capita income is positive and significant at the 1% level in most specifications. This indicates that higher levels of income on average increase the incentive to obtain an education as well as expands budget constraints in a way may make education more affordable. Another interesting result from the fixed effects estimations is that the percentage of population that identifies as being Muslim mostly has a positive impact on educational outcomes. While the relationship is not significant in all specifications, there have been massive increases in the secondary enrollment rates in some Islamic countries that are worth reiterating. For example, Oman's secondary enrollment rate for females was 4.028% in 1980, and 93.421% by 2010. Algeria's secondary enrollment rate for females increased from 23.40% in 1980 to 97.14% in 2010. Several other predominantly Muslim countries had huge improvements in the educational outcomes for women during this time period, explaining the positive coefficient on the Islam variable.

4.4.2 Panel Data Analysis from 1970-2010: Fixed Effects with Lagged Independent Variables

Still another step towards determining whether there is a causal relationship between economic freedom and educational outcomes over time is to look at how past changes in economic institutions impact current levels of the educational outcomes within a particular country. To do this, lagged values of EFW and Polity are included in the fixed effects estimates as indicated by the equation (4.5).

[57] There is not much in the way of cross-country annual data on compulsory education laws. The World Bank does provide this data for several countries since 1999. There is also very little variation in the data within each country over this period.

$$(4.5)\quad Edu_{it} = \beta_0 + \beta_1 EFW_{it-10} + \beta_2(EFW_{it} - EFW_{it-10}) + \beta_3 \ln PC\ GDP_{it-10} + \beta_4(\ln PC\ GDP_{it} - \ln PC\ GDP_{it-10}) + \beta_5(Polity2_{it} - Polity2_{it-10}) + \beta_6 GovSpend_{it-10} + \beta_7 PctIsl_{it-10} + c_i +$$

Table 4.14 reports the results of estimating equation (4.5) for each of the four educational outcomes using a fixed effects panel analysis. Once again, because of the results of the Hausman test (reported in Table 4.16), the results of a random effects panel analysis are reported in Table 4.15 for the secondary enrollment ratio.

The results of these estimates are consistent with the fixed effects regressions reported in the previous section. Both the level of economic freedom at the beginning of the prior decade, and the change in economic freedom over that decade positively affects current educational outcomes in most cases. The inclusion of time dummy variables once again reduces the significance of the economic freedom coefficients. Neither measure of economic freedom seems to have any effect on increasing the parity between the female and male secondary enrollment rates. An one-standard deviation increase in a country's economic freedom score over the previous decade is associated with a 5.39 percentage point increase in the current tertiary enrollment rate for females, a 7.43 percentage point increase in the current tertiary enrollment ratio, and between a 2.98 and 8.04 percentage point increase in the current secondary enrollment rate. A one-standard deviation higher economic freedom score at the start of the previous decade is associated with a 10.81 percentage point increase in tertiary enrollment rates, a 9.08 percentage point increase in tertiary enrollment ratios, and between a 4.45 and 10.93 percentage point increase in secondary enrollment rates.

As before, both higher levels of per capita income at the beginning of the previous decade and increases in per capita income over that decade result in significantly increased educational outcomes for each of the four measures in the current period. Government spending levels at the beginning of the prior decade do not appear to alter the absolute and relative educational outcomes of women. Consistent with the previous results, a higher percentage of the population that identifies as Muslim at the beginning of the prior decade is associated with higher current female enrollment rates and ratios for tertiary education. Interestingly, the results indicate that

Table 4.14: Results of Fixed Effects Panel Analysis with Lags and Differences

	TEGF		TER		SEGF		SER	
STD_EFW_{t-10}	10.8142***	2.4819	9.0828**	-3.8357	10.9330***	4.4511**	2.7632	0.2522
	(2.8285)	(3.0196)	(3.6307)	(2.9720)	(1.9633)	(2.0966)	(2.0361)	(2.5107)
STD_EFW_{t}- STD_EFW_{t-10}	5.3918***	-0.5574	7.4335***	-2.9428	8.0455***	2.9838*	2.5297	0.6497
	(1.6272)	(2.0085)	(2.5172)	(2.2320)	(1.5729)	(1.6645)	(1.9636)	(2.2056)
$ln\ PC\ GDP_{t-10}$	31.2918***	16.6990***	39.3222***	10.1323	19.4006***	7.3113	6.7120*	2.0897
	(4.8156)	(6.0767)	(7.6503)	(6.3465)	(4.5873)	(4.4794)	(3.7051)	(4.4457)
$ln\ PC\ GDP_{t}$ - $ln\ PC\ GDP_{t-10}$	11.6592**	6.1355	32.9402***	22.3853***	12.9773**	8.9553*	8.1693*	6.6335
	(5.5577)	(5.7146)	(10.5864)	(8.4662)	(5.4378)	(4.8348)	(4.1447)	(4.2041)
$STD\_Polity2_{t}$- $STD\_Polity2_{t-10}$	-3.3262***	-2.4085**	-2.4939*	-0.9213	-0.9123	-0.5505	1.8979**	2.1216***
	(1.1255)	(1.0482)	(1.3914)	(1.1801)	(0.9197)	(0.8728)	(0.7295)	(0.6781)
GES_{t-10}	1.5456*	0.9857	-1.2922	-2.0868*	-0.5340	-0.6762	0.3714	0.3324
	(0.8482)	(0.7312)	(1.7561)	(1.1910)	(0.7272)	(0.6980)	(0.5216)	(0.5251)
$IsPct_{t-10}$	1.2748***	0.5887	1.8151**	-0.6653	0.0357	-0.5330	0.0686	-0.1477
	(0.4301)	(0.4225)	(0.8240)	(0.7920)	(0.3636)	(0.3466)	(0.3479)	(0.3496)
1985		3.1336		10.7882***		6.8070***		3.2003*
		(2.2711)		(3.6233)		(1.6979)		(1.8575)
1990		6.9876**		22.0667***		6.9593***		2.4818
		(3.0216)		(4.3019)		(2.3233)		(2.5282)
1995		14.4093***		28.0944***		14.3745***		5.1978*
		(3.7998)		(5.4629)		(2.6808)		(2.7292)
2000		18.0180***		40.0088		19.3278***		7.3352**
		(4.7046)		(5.3138)		(3.0813)		(3.4058)
2005		23.1769***		45.0158		19.4521***		8.1541**
		(4.9803)		(5.2567)		(3.2842)		(4.0121)
2010		26.1016***		49.4685***		22.6855***		8.6446*
		(5.3083)		(5.4125)		(3.7240)		(4.4816)
Observations	366	366	366	366	405	405	408	408
Countries	101	101	101	101	103	103	105	105
Adjusted R-Squared	0.6651	0.7234	0.5119	0.6351	0.5050	0.5743	0.1588	0.1941

Robust standard errors, clustered around the country, are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.15: Results of Random Effects Panel Analysis with Lags and Differences

		SER
STD_EFW_{t-10}	2.8190*	0.4808
	(1.6529)	(2.1424)
STD_EFW_t-STD_EFW_{t-10}	2.6106	1.0152
	(1.7302)	(2.0324)
ln PC GDP_{t-10}	6.4703***	6.5145***
	(1.2641)	(1.2798)
ln PC GDP_t *-ln PC* GDP_{t-10}	8.2839***	10.0757***
	(3.1361)	(3.1014)
$STD\_Polity2_t$-$STD\_Polity2_{t-10}$	1.8579***	2.0265***
	(0.7240)	(0.6989)
GES_{t-10}	0.1261	0.1457
	(0.4618)	(0.4795)
$IsPct_{t-10}$	-0.1183***	-0.1351***
	(0.0369)	(0.0389)
1985		2.5642
		(1.8492)
1990		1.4884
		(2.2301)
1995		3.6350
		(2.3310)
2000		5.1489**
		(2.3310)
2005		5.6973*
		(2.9356)
2010		5.6511*
		(2.9105)
Observations	408	408
Countries	105	105
Adjusted R-Squared	0.1567	0.1874

Robust standard errors, clustered around the country, are reported in parentheses.

p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.16: Hausman Test Results for Appropriateness of Fixed Effects

	TEGF		TER		SEGF		SER	
	FE	RE	FE	RE	FE	RE	FE	RE
EFW	4.5863	7.1897	5.7978	7.4769	4.1180	4.5453	-1.8677	-0.9527
Polity2	-0.0273	0.0767	0.4819	0.4398	0.7421	0.7354	0.5930	0.5615
ln PC GDP	30.2605	12.3070	33.9465	28.6906	21.2926	18.0173	13.5740	9.6646
GES	3.9187	3.8642	2.4664	2.1524	2.7479	2.8577	1.0744	0.9949
IsPct	1.1932	-0.0065	2.1132	0.4220	0.5402	-0.0283	0.3161	0.9949
Chi2	97.07		42.77		12.49		8.95	
Prob>chi2	0.0000		0.0000		0.0192		0.1111	

These results suggest that Fixed Effects is appropriate for the tertiary educational outcomes, but not necessarily for secondary educational outcomes. This is particularly true for secondary enrollment ratios (SER). Thus, results of both fixed effects and random effects are reported for secondary educational outcomes.

movements toward democracy in the prior decade have a negative impact on most educational outcomes, with a positive coefficient appearing only in the estimates for secondary enrollment ratios. These results suggest that the positive relationship between economic freedom and many educational outcomes may be a causal one. The next section explores this question further.

4.4.3 A Comment on Endogeneity

There may be feedback between higher education levels and economic freedom. This argument, however, is weakened once several public choice factors are considered. There is evidence that individuals with higher levels of education hold political opinions that are closer to the views of economists (Caplan 2007), and that these opinions include a recognition of the benefits of economic freedom. Higher levels of education then may alter the position of the median voter in a way that is more supportive of economic freedom.

Public choice theory suggests, however, that the will of the median voter has little effect on the type of policies that are ultimately adopted.[58] In democracies, politicians will tend to cater to special interest groups who engage in rent-seeking activities that provide special privileges that protect certain industries- reducing economic freedom. There will also be a tendency for politicians to be shortsighted and pass policies that provide visible benefits to voters in the

[58] For empirical evidence on the prevalence of these types of public choice problems see: Caplan (2007); Congleton, Hillman, and Konrad (2008)*;* Schuck (2014, particularly Chapters 5-11); Simmons (2012); and Winston (2006).

immediate period, but the costs of which are financed by debt and pushed off into the future. This too, suggests that democratic institutions will tend to undermine economic freedom over time, regardless of the desires of voters.

Even when the opinions held by well-educated voters support economic freedom, voters do not typically vote for instrumental reasons, but instead for expressive reasons. They vote to signal to others that they hold a set of beliefs (that they may not actually hold), and not necessarily on the basis of which policies are in their best interest. Thus, even well-educated populations may find voting for increases in the size and scope of government a relatively cheap way to signal to others that they are compassionate, or noble, even when they firmly believe that these reductions to economic freedom are detrimental to economic growth.

Democratic institutions are the best-case scenario in which the political institutions provide the strongest incentive for politicians to respond to the demands of the citizenry. It is even less likely that education levels will have an impact on the choice of economic institutions in authoritarian governments. In fact, the majority of the world's governments are classified not as well functioning democracies but as weak or failed states.[59]

These reasons suggest that the level of education is unlikely to alter the quality of economic institutions in a way that would lead to more economic freedom. However, potential feedback between education and per capita income may bias regression estimates.[60] As such, fixed effects regressions that contain lagged values of economic freedom may not be enough to account for endogeneity concerns. The next section estimates a few different models that account for endogeneity.

4.4.4 Empirically Addressing Endogeneity

The theoretical argument presented in the previous section may not be convincing to some. There is always the potential to raise endogeneity concerns about the four independent variables: economic freedom, political institutions, per capita income, and government spending on education. Thus, a final set of empirical models is required to determine whether a causal relationship exists between economic freedom and educational outcomes.

[59] On this issue, see Messner et al. (2014) the most recent edition of the Fund for Peace's annual Fragile States Index.

[60] Hall, Sobel, and Crowley (2010) provide support for the view that increases in both physical and human capital do not always lead to higher growth. The nature of the economic institutions helps determine whether capital developments are employed productively.

Past values of the independent variables are expected to influence education outcomes, but they should not be affected by an idiosyncratic shock to the current decision to enroll in school. Enrollment in school, especially at higher levels, represents perceptions of existing economic opportunities, and the potential for economic opportunities going forward. Individuals would be hesitant to spend the time and money investing in higher levels of human capital if they did not expect to benefit from this investment. The existing economic, political, and cultural climates will influence the economic opportunity set and shape the current decision to attend school, not the climate that existed, for example, 10 years before the time of the decision. Thus, the theoretical endogeneity problem is one that can be mitigated by using past values of the independent variables, at least to some degree.

In this set of regressions, both the dependent and independent variables are differenced by five and ten years. The differenced dependent variable used is not lagged, while the differenced independent variables are lagged by five and ten years depending upon the specification. Since the differencing process eliminates the unobserved country-specifics error, a simple OLS model is then used to estimate this model. Each equation is estimated with and without time dummy variables.

The first specification, shown in equation (4.6), examines the impact of the change in the independent variables over the five year period starting 10 years ago and ending five years ago on the change in the dependent variable over the most recent five year period.

$$(4.6)\quad Edu_{it} - Edu_{it-5} = \beta_0 + \beta_1(EFW_{it-5} - EFW_{it-10}) + \beta_2(\ln PC\ GDP_{it-5} - \ln PC\ GDP_{it-10}) + \beta_3(Polity2_{it-5} - Polity2_{it-10}) + \beta_4(GovSpend_{it-5} - GovSpend_{it-10}) + \beta_5(PctIsl_{it-5} - PctIsl_{it-10}) + u_{it}$$

Equation (4.7) depicts the second specification. It examines the impact of the change in the independent variables over the five-year period starting 15 years ago and ending 10 years ago on the change in the dependent variable over the most recent five-year period.

$$(4.7)\quad Edu_{it} - Edu_{it-10} = \beta_0 + \beta_1(EFW_{it-10} - EFW_{it-15}) + \beta_2(\ln PC\ GDP_{it-10} - \ln PC\ GDP_{it-15}) + \beta_3(Polity2_{it-10} - Polity2_{it-15}) + \beta_4(GovSpend_{it-10} - GovSpend_{it-15}) + \beta_5(PctIsl_{it-10} - PctIsl_{it-15}) + u_{it}$$

The third specification, shown in equation (4.8), examines the impact of the change in the independent variables over the five-year period starting 15 years ago and ending 10 years ago on the change in the dependent variable over the most recent ten-year period.

$$(4.8)\quad Edu_{it} - Edu_{it-5} = \beta_0 + \beta_1(EFW_{it-5} - EFW_{it-15}) + \beta_2(\ln PC\ GDP_{it-5} - \ln PC\ GDP_{it-15}) + \beta_3(Polity2_{it-5} - Polity2_{it-15}) + \beta_4(GovSpend_{it-5} - GovSpend_{it-15}) + \beta_5(PctIsl_{it-5} - PctIsl_{it-15}) + u_{it}$$

Finally, equation (4.9) examines the impact of the change in the independent variables over the ten-year period starting 20 years ago and ending 10 years ago on the change in the dependent variable over the most recent ten-year period.

$$(4.9)\quad Edu_{it} - Edu_{it-10} = \beta_0 + \beta_1(EFW_{it-10} - EFW_{it-20}) + \beta_2(\ln PC\ GDP_{it-10} - \ln PC\ GDP_{it-20}) + \beta_3(Polity2_{it-10} - Polity2_{it-20}) + \beta_4(GovSpend_{it-10} - GovSpend_{it-20}) + \beta_5(PctIsl_{it-10} - PctIsl_{it-20} + u_{it}$$

Table 4.17 through Table 4.20 presents results of equations (4.6) through (4.9). Few of the explanatory variables are significant when using this estimation method. This weakens the case for causality in most cases, with one exception. Economic freedom has a positive and significant impact on the tertiary enrollment rates of females in all but one specification- both when time dummy variables are included, and when they are not. Thus, the data are consistent with the view that economic freedom exerts a causal impact on a female's decision to enroll in tertiary education. Depending on the specification run, a one-standard deviation increase in economic freedom in the past time period results in anywhere from a 1.80 to a 5.17 percentage point increase in the enrollment rate of females in tertiary schooling during the more recent time period.

However, Tables 4.17 through 4.20 also provide results inconsistent with the view that there is a causal relationship between economic freedom and the other three educational measures. Neither is there any evidence that political institutions and per capita income exert a positive impact on women's educational outcomes. These findings may reflect the fact that most

countries have achieved high levels of enrollment for both males and females in secondary schooling, regardless of their political institutions, economic institutions, or income levels.

Economic freedom provides individuals with an incentive to obtain education if that choice promises benefits in excess of its costs. In other words, economic freedom helps move people and resources to their most beneficial use. There is no theory to support the ideal that the optimal (i.e. economically efficient) school enrollment rate in a society is 100%. There will always be individuals who are ill-suited for formal education, especially if they can earn a decent living via other means. Such a person would have a high opportunity cost of attending schooling. Thus, it may be the case that for some countries, the average enrollment rate represents an overinvestment in education to begin with, and subsequent movements towards economic freedom will result in a lower enrollment rate.

The example of educational investments in the USSR comes to mind- there was a massive amount of investment in human capital with many individuals obtaining multiple degrees, but this level of investment did not match the available economic opportunities. As movements towards economic freedom occurred in the former USSR, and people had more ability to chose whether to invest in human capital, more people decided not to invest in education than when they had less choice in the matter. Currently, a similar situation occurs in the Middle East, where there is evidence of an over-investment in education relative to the available opportunities (Vedder 2015). Considering this, it is clear that reductions in education enrollment rates are not entirely inconsistent with movements toward economic freedom, if the country was overinvesting in education to start

4.4.5 Other Robustness Checks

Several other models were estimated to determine the robustness of the results presented in this paper. First, a simple pooled-OLS model was estimated to see if the perceived relationships hold in the most basic setting. All of the regressions in Table 4.4 were estimated both with and without time dummy variables. These results present a pattern of significance similar to the panel analysis.

In addition, all models in Table 4.4 were estimated again using lagged versions of the key independent variables (economic freedom, per capita income, and political institutions). The results of these regressions are presented in Appendix C. Tables C.1 and C.2 present the results

Table 4.17: Results of OLS Regression Analysis
Dependent Variables (Five Year-Differenced) Independent Variables (Five-Year Differenced and Five-Year Lagged)

	TEGF		TER		SEGF		SER	
EFWt-5 - EFWt-10	5.1693***	4.0870***	1.2158	0.9287	1.0188	0.8333	0.1875	0.6858
	(1.0542)	(1.0228)	(2.1398)	(2.2626)	(0.8306)	(0.8116)	(1.4348)	(1.5639)
STD_Polity2t-5 - STD_Polity2t-10	-1.0227*	-1.3314**	0.3058	0.1610	0.1295	-0.2740	0.2060	0.0505
	(0.6467)	(0.6785)	(1.1021)	(1.2189)	(0.7229)	(0.7976)	(0.7379)	(0.7346)
Ln PC GDPt-5 - Ln PC GDPt-10	5.1206	6.0638**	5.5896	7.8838	9.3199***	9.3562***	1.7855	-0.2420
	(2.8184)	(2.9180)	(4.6202)	(4.9230)	(2.8302)	(2.6490)	(2.5803)	(2.6168)
GESt-5-GESt-10	0.5133	0.6055	-1.4107*	-1.6056*	-0.0318	0.3506	-0.4476	-0.4035
	(0.4384)	(0.4237)	(0.7803)	(0.8302)	(0.6399)	(0.5838)	(0.4560)	(0.4838)
IsPct-5-IsPct-10	-0.1806	-0.3460*	-0.9416	-0.8484	-0.4613	-0.4831	-0.3840	-0.3576
	(0.1905)	(0.4237)	(0.5766)	(0.6149)	(0.3262)	(0.3393)	(0.2494)	(0.2528)
1985		-1.0575		1.4676		0.1716		-2.0179
		(1.5996)		(3.0748)		(1.5709)		(1.4977)
1990		-0.0602		1.0356		-1.7372		-5.1843***
		(1.1802)		(2.6026)		(1.6857)		(1.7585)
1995		4.3026***		-0.5439		4.2334**		-3.1968**
		(1.5788)		(2.9915)		(2.0296)		(1.5554)
2000		3.5408*		5.0476		-0.6465		-3.7564**
		(1.8966)		(3.0842)		(2.1233)		(1.5168)
2005		4.5773**		-1.5531		-3.9538*		-5.0155***
		(1.4444)		(2.7404)		(2.2166)		(1.3662)
2010		2.3595		-2.2571		-2.5087		-4.5799***
		(1.5451)		(2.6262)		(1.7297)		(1.2219)
Observations	297	297	297	297	352	352	355	355
Countries	90	90	90	90	97	97	98	98
Within R-Squared	0.0626	0.1507	0.0267	0.0806	0.0326	0.1153	0.0193	0.0977

Robust standard errors, clustered around each country, are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.18: Results of OLS Regression Analysis
Dependent Variables (Five-Year Differenced) Independent Variables (Five-Year Differenced and Ten-Year Lagged)

	TEGF		TER		SEGF		SER	
EFWt-10 - EFWt-15	1.7974*	1.1273	-0.1124	1.2337	-0.9684	0.1619	0.2162	0.8257
	(0.9777)	(1.0737)	(2.1899)	(2.7098)	(0.9222)	(1.0322)	(0.5498)	(0.6269)
STD_Polity2t-10 - STD_Polity2t-15	1.3786**	1.5749**	2.2153*	1.9282	0.8502	1.1655	-0.5739	-0.5493
	(0.5792)	(0.6629)	(1.2606)	(1.3245)	(0.7910)	(0.7939)	(0.5328)	(0.5304)
Ln PC GDPt-10 - Ln PC GDPt-15	0.6629	4.1764	4.2368	1.1129	1.6304	3.4104	-4.2967**	-4.5457**
	(3.3937)	(3.4283)	(9.5579)	(9.6130)	(3.9840)	(3.8538)	(2.0939)	(2.1458)
GESt-10-GESt-15	0.0227	-0.0476	-1.6460	-1.1119	-0.7342	-0.2923	0.0040	0.1323
	(0.4243)	(0.4385)	(1.5454)	(1.4905)	(0.5014)	(0.4962)	(0.2992)	(0.2918)
IsPct-10-IsPct-15	0.3446	0.3959*	1.4932	1.6346	-0.2251	-0.1312	0.0189	0.0490
	(0.2229)	(0.2302)	(1.1491)	(1.1713)	(0.2575)	(0.3178)	(0.1361)	(0.1461)
1990		0.8492		1.5063		-3.8410**		-2.2823*
		(1.3962)		(4.7205)		(1.6060)		(1.2700)
1995		5.7558***		-3.3695		3.0359		-1.3160
		(1.6646)		(4.5420)		(2.1060)		(1.0908)
2000		3.2649**		0.1374		-1.5874		-1.6792
		(1.6606)		(6.2573)		(1.8502)		(1.3489)
2005		4.2755***		-6.2925		-5.9302**		-3.2485**
		(1.5309)		(5.0696)		(2.5727)		(1.3441)
2010		3.0475**		-6.4389		-3.6763**		-2.9591***
		(1.4291)		(4.6318)		(1.5612)		(1.0580)
Observations	227	227	227	227	267	267	269	269
Countries	79	79	79	79	87	87	87	87
Within R-Squared	0.0160	0.0854	0.1528	0.1976	0.0120	0.1038	0.0191	0.0603

Robust standard errors, clustered around each country, are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.19: Results of OLS Regression Analysis
Dependent Variables (Five-Year Differenced) Independent Variables (Ten-Year Differenced and Five-Year Lagged)

	TEGF		TER		SEGF		SER	
EFWt-5 - EFWt-15	2.5724**	1.7804*	-1.0129	-0.5604	0.5656	1.1169	-0.4064	-0.1323
	(1.0408)	(0.9580)	(1.4297)	(1.6050)	(0.7099)	(0.8711)	(0.4050)	(0.4353)
STD_Polity2t-5 - STD_Polity2t-15	-0.3854	-0.3081	1.1844	0.7084	1.0470	1.0975	0.1063	0.1018
	(0.75507)	(0.7478)	(1.2079)	(1.2404)	(0.8146)	(0.9941)	(0.5123)	(0.5073)
Ln PC GDPt-5 - Ln PC GDPt-15	1.8377	3.5157	6.6587	6.4046	3.9548*	4.2100*	-0.4878	-0.4977
	(3.0289)	(3.0567)	(5.7394)	(6.1897)	(2.1226)	(2.2376)	(1.4985)	(1.4747)
GESt-5-GESt-15	0.1584	0.2561	-1.8675	-1.8013	-0.8509	-0.3255	-0.2105	-0.0459
	(0.5293)	(0.5170)	(1.2190)	(1.2289)	(0.6426)	(0.5073)	(0.2838)	(0.2466)
IsPct-5-IsPct-15	0.0612	-0.0545	1.0850	1.3061	-0.5071*	-0.5573*	0.0156	0.0339
	(0.2462)	(0.2665)	(0.9830)	(1.0051)	(0.3077)	(0.3217)	(0.1767)	(0.1871)
1990		0.1304		0.8590		-4.1968***		-1.6836
		(1.4845)		(4.4735)		(1.5997)		(1.3198)
1995		5.8043***		-4.7629		3.1794		-0.2819
		(1.7292)		(4.6722)		(2.0841)		(1.1804)
2000		3.3844*		2.0460		-3.0720		-1.2280
		(1.8603)		(5.9749)		(1.9322)		(1.3447)
2005		4.4362***		-5.2577		-5.8449**		-2.8889**
		(1.5543)		(4.7486)		(2.4694)		(1.4236)
2010		3.9177**		-5.5013		-4.7827***		-2.4458**
		(1.6888)		(4.4910)		(1.5092)		(1.1252)
Observations	228	228	228	228	268	268	270	270
Countries	80	80	80	80	89	89	89	89
Within R-Squared	0.0578	0.1394	0.1167	0.1803	0.0509	0.1536	0.0115	0.0743

Robust standard errors, clustered around each country, are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *

Table 4.20: Results of OLS Regression Analysis
Dependent Variables (Five Year-Differenced) Independent Variables (Ten Year-Differenced and Ten Year –Lagged)

	TEGF		TER		SEGF		SER	
EFWt-10 - EFWt-20	1.9086**	2.1165**	-1.7161	-0.4827	-0.2096	1.1036	0.1065	0.7013
	(0.8416)	(1.0304)	(2.0627)	(2.5925)	(0.8692)	(1.1655)	(0.5090)	(0.5731)
STD_Polity2t-10 - STD_Polity2t-20	0.2895	0.4651	-0.3011	0.1935	1.3588*	1.6735**	-0.7114	-0.6788
	(1.2555)	(1.1637)	(1.0911)	(0.9702)	(0.8206)	(0.8347)	(0.5102)	(0.5232)
Ln PC GDPt-10 - Ln PC GDPt-20	4.8731**	5.0567**	-13.4952**	-13.8119**	0.6032	0.6290	-3.0826*	-3.0416*
	(2.2116)	(2.3873)	(5.8227)	(5.6866)	(3.2183)	(3.3190)	(1.7994)	(1.7470)
GESt-10-GESt-20	0.1447	0.3260	-0.9421	-0.4492	-1.039**	-0.9120*	0.3405	0.4989*
	(0.4603)	(0.3990)	(0.7697)	(0.7643)	(0.4910)	(0.5111)	(0.2696)	(0.2777)
IsPct-10-IsPct-20	-0.0515	-0.0912	0.0380	-0.0387	-0.0623	-0.0044	-0.0804	-0.0733
	(0.2026)	(0.1970)	(0.5633)	(0.6268)	(0.2314)	(0.2173)	(0.1658)	(0.1794)
1995		5.0744***		-1.8640		6.2857***		-0.1179
		(1.5087)		(2.9217)		(2.1662)		(1.0139)
2000		3.0220		2.7318		-0.3230		0.0225
		(1.9305)		(3.9297)		(2.1877)		(1.0617)
2005		1.5807		-5.5791		-2.9105		-1.4843
		(1.7607)		(4.4608)		(2.4789)		(1.0593)
2010		0.9928		-5.1335*		-1.9375		-2.0174**
		(2.0564)		(3.0052)		(1.8584)		(0.9662)
Observations	174	174	174	174	203	203	205	205
Countries	66	66	66	66	67	67	68	68
Within R-Squared	0.0093	0.1089	0.1390	0.2417	0.471	0.1852	0.0337	0.1103

Robust standard errors, clustered around each country, are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *

when both the independent variables are lagged by 10 and 15 years, respectively. These results indicate that the relationships found in the models with contemporaneous dependent and independent variables remains when the independent variables are lagged. In fact, the relationship between economic freedom and educational outcomes gets stronger when economic freedom is lagged. This is likely because changes in economic institutions do not impact individual behavior instantaneously. Institutional changes take time to work through the economy and provide noticeable results.

When the three key independent variables are lagged by 10 years, economic freedom has a positive coefficient and is significant in 20 out of 30 regressions. The few instances in which EFW has a negative coefficient occur when the interaction terms are included. A one standard deviation increase in the EFW score ten years in the past is associated with a 3.49 to 13.61 percentage point increase in current tertiary enrollment rates, a 7.73 to 12.35 percentage point increase in the current tertiary enrollment ratio, a 2.87 to 13.71 percentage point increase in current secondary enrollment rates, and a 2.50 to 9.72 percentage point increase in the current secondary enrollment ratio.

Lagging the key independent variables by 15 years provides a similar result. In several cases, particularly with respect to secondary educational outcomes, the past values of economic freedom are positive and statistically significant even in several cases where the contemporaneous version was not. In 17 out of 30 equations, the 15-year lagged economic freedom variable is positive and significant. The two cases in which the lagged EFW score is negative and significant occur in specifications containing the interaction terms.

Overall, it seems that tertiary educational outcomes are impacted mostly by the current quality of economic institutions, as well as by the institutions that existed in the recent past (10 years). The relationship between economic freedom and secondary educational outcomes, however, intensifies as time passes and becomes even more significant when lagged 15 years. A one standard deviation increase in the EFW score 15 years in the past is associated with a 8.58 to 13.12 percentage point increase in current tertiary enrollment rates, approximately an 11.71 percentage point increase in the current tertiary enrollment ratio, a 6.67 to 11.92 percentage point increase in current secondary enrollment rates, and a 2.76 to 8.48 percentage point increase in the current secondary enrollment ratio.

Past measures of per capita income also have a more highly significant relationship with current educational outcomes than current income figures. The magnitudes of the lagged coefficients are slightly larger than the parallel contemporaneous figures, and the pattern of significance is similar. The lagged version of political institutions, however, does not have as large of an impact on current educational outcomes. In many instances, the lagged political institutional variable lose significance compared to the current polity data. This is consistent with the view that the economic institutions and income levels exert an impact on the educational outcomes of women, and that it often takes time for the impact to become observable. In contrast, the impact of political institutions is both smaller and more erratic.

Next, to ensure that the results are not being driven by the set of more developed countries, all of the regressions are re-estimated on the sample of countries that were not members of the OECD in 1980. Not only do the previous patterns hold, but in many instances, the relationships are intensified. For example, economic freedom in many cases has a positive and significant impact on secondary educational outcomes, when it previously did not.[61]

In addition, the explanatory variables presented in the main regression results were entered into alternative specifications in various combinations. Additional panel regressions were estimated using alternative lags and time periods. Finally, a cross-section analysis was conducted by estimating a set of two-stage equations that model the impact of past changes in economic freedom on the percentage change in female enrollment rates and ratios between 1980 and 2010. Further, alternative measures of political institutions, civil liberties, media freedom, and religious composition were examined using data from Freedom House. None of these alternative measures improved the explanatory power of the regressions estimated previously. In addition, the alternative variables themselves were not significant. None of these exercises altered the signs, magnitudes, or the significance of coefficients in any meaningful way. These robustness checks enhance our confidence in the results.

4.5 Concluding Remarks

The results presented in the previous section are consistent with the view that there is a robust, potentially causal, positive relationship between economic freedom and women's

[61] The results of the more minor robustness checks are not included here, but can be made available upon request. The data appendix for this chapter only provides the results of the robustness check using 10 and 15 year lagged independent variables.

educational outcomes. The fixed effects regressions run on panel data also support the idea that a robust relationship exists between economic freedom and increases in educational outcomes for women over time. The fixed effects estimations remain robust in regressions examining the impact of the level of economic freedom at the beginning of the preceding decade and the change in economic freedom over that decade on educational outcomes. Taken as a whole, the results of this analysis begins to make the case that economic freedom has a positive impact on tertiary, and (to a lesser degree) secondary educational outcomes for women.

Because the panel analysis used a fixed effects model with standard errors clustered around the individual country, these results are robust to controlling for unobservable (or un-measurable) factors that are fixed (or are incredibly slow to change), such as deeply embedded cultural norms and geographical conditions. These results are also robust when looking at the impact of past changes in economic freedom on current educational outcomes, as well as changes in economic freedom on changes in educational outcomes. Only in the case of secondary enrollment ratios does the significance of economic freedom waiver. The results of estimations addressing endogeneity concerns suggest that the relationship between economic freedom and tertiary enrollment rates is likely causal.

While not reported in this paper, each regression specification was run on a subset of the data that excludes all countries that were members of the OECD as of 1980. This robustness check does not alter the pattern of results. The signs on the coefficients, the size of the coefficients, the statistical significance, and the R-Squared values do not differ when OECD countries are omitted. In several cases, when the dependent variable is the secondary enrollment ratio, leaving out the OECD member countries actually strengthens the estimated impact of economic freedom on positive educational outcomes for women.[62] An additional robustness check was done in which every regression in section 4 was repeated with the regressors lagged 5 years, and 10 years, respectively. Once again, the pattern of results is not altered in a material way.

As mentioned before, compulsory education laws may diminish the ability for individuals to choose on their own whether to attend school. This factor will prevent us from determining the

[62] The countries eliminated from the sample in this robustness check are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The results of these regressions are available upon request.

impact of EFW on secondary enrollment ratios when compulsory education laws are not taken considered. Including a measure of government spending on education, as well as a measure of the quality of political institutions may already capture the impact of compulsory education laws to some extent. However, as historical data becomes more widely available for compulsory education laws, further research should be conducted that explicitly includes this variable.

This analysis is supportive of the view that there is a virtuous cycle present whereby economic freedom positively affects per capita income growth rates, which raises per capita income levels. In turn, the increase in per capita income raises the opportunity cost of not becoming educated, leading to higher enrollment rates in secondary and tertiary education. As educational enrollment rises, and individuals gain skills and build their human capital, this increases the marginal product of their labor, leading to even higher wages.

A causal relationship between economic freedom and educational outcomes for women is difficult to identify using purely statistical methods such as Granger Causality. This is the result of the complex nature of the relationship between economic freedom, per capita income, and political institutions combined with the fact that the available enrollment data does not have a sufficient number of observations over many time periods. Future extensions of this work should explore alternative empirical methods to examine the issue of causality in more detail, as well as examine country-level legal data to determine if and when a country implemented compulsory education laws.

Additionally, in-depth case studies may shed light on the mechanisms through which economic freedom impacts educational outcomes. Examining both countries that have experienced astounding increases in female educational outcomes, like Oman, Rwanda, or Malawi, as well as countries like Bulgaria, where female educational outcomes have deteriorated over the same period, may highlight important differences not captured in this cross-country study.

These results present a compelling case for why the international development community may wish to explore less conventional channels for increasing educational outcomes for women. Traditional methods of increasing these outcomes in the developing world include large government transfers, and increases in government spending on education. More recent methods have focused on programs that inform parents of the importance of education, offering students free meals for attending school, and incentive programs to improve the quality of

teaching in the hopes this will increase enrollment. Considering that low enrollment rates for women (and men) are more rampant in the developing world, the opportunity cost of allocating large amounts of resources to achieve higher enrollment rates can be quite high, as there are many competing demands on scarce. This paper has presented findings consistent with the view that economic freedom has both a direct and indirect impact on educational outcomes, and suggests that changes in economic institutions that increase economic freedom are a viable alternative to the standard response of the aid community. Not only are moves towards more economic freedom a relatively low cost and effective way of increasing enrollment rates and achieving gender parity, but institutions consistent with economic freedom also generate several other positive development outcomes for societies that have embraced them.

CHAPTER FIVE

CONCLUSION

The main objective of this dissertation was to examine whether economic freedom provides women with the set of tools necessary for them to become the individuals they choose to become. In the first chapter of this dissertation, several questions were raised. How does economic freedom influence gender norms? Can the measure of economic freedom be made more precise by adjusting for formal legal barriers that women face when it comes to the exercise of economic rights? Do these adjustments significantly alter the relative EFW rankings of countries once legal barriers and gender norms are taken into account? Are countries with greater economic freedom more or less likely to favor males over females in education, employment, and leadership opportunities? How does economic freedom influence a woman's incentive to acquire human capital beyond what is learned in primary school? Each of the core chapters in this dissertation address one or more of these questions.

Chapter two identifies a deficiency in existing measures of economic institutions- they do not currently account for the gender differences in the exercise of economic rights. This chapter uses data from the OECD, World Bank, and World Values Survey to provide a method of adjusting economic freedom measures for gender disparity in formal and informal institutions.

Table 2.17 summarizes the results of the formal economic rights and gender norms indexes. In general, the formal rules and gender norms are aligned with one another. Most countries with high scores on the index of formal economic rights also have high scores on the gender norms index. Most of these countries with high GDERI and norms index scores were members of the OECD in 1980. The reverse is also true; most of the countries with low GDERI scores also tend to be on the lower end of the spectrum of norms index scores. Nigeria, Iran, Bangladesh, Mali, Jordan, and Egypt are prime examples of nations in which neither the norms or the formal institutions are supportive of gender parity.

There are some countries that receive the highest possible score for the formal economic rights index, while at the same time they earn a Norms Index score that falls on the lower end of the spectrum. Japan, an outlier among OECD member countries, and many other Asian countries have diverging formal and informal gender rules. Several Eastern European nations also have

formal rules that support gender parity while possessing social norms that do not. These countries include Croatia, Latvia, Lithuania, Hungary, Ukraine, Czech Republic, Slovak Republic, and Estonia.

Still, other countries possess norms supportive of gender parity but have formal rules that favor men over women. South Africa, Rwanda, Tanzania, the Dominican Republic, Brazil, and Columbia are the only countries where this is the case. The countries in which the formal rules and gender norms greatly diverge are countries worthy of further investigation in order to better understand the interaction between formal and informal rules.

When these two indexes are used to adjust the EFW index scores, the results of the adjustment process are illuminating, but not entirely surprising. OECD member countries tend to have fewer differences in the economic rights that males and females are able to exercise. Thus, many countries in the Americas, Western Europe, and other former English colonies have adjusted EFW scores that are not very different from their original, unadjusted scores. However, this adjustment process also reveals that the EFW index overstates the amount of economic freedom present in many countries in the Middle East, Southeast Asia, and Africa. EFW scores for countries like Jordan, and Iran fell significantly when adjusted for both formal and informal gender-based barriers to economic rights. The order of the countries in the EFW score rankings is also altered significantly after making these adjustments. This suggests that our impression of the relative freedom of many countries is skewed and can be made more precise with the type of adjustment process presented in chapter two.

The vast majority of countries with few formal legal barriers to women's economic rights also have gender norms that do not favor men over women in education, employment, and leadership positions. A few countries, like Japan and Taiwan, have formal rules consistent with gender parity but social norms indicating substantial gender disparity. Case studies in these countries might provide insight into why a country may have formal rules that are supportive of gender parity, and at the same time possess social norms that favor males over females. Further, the analysis of this issue may offer insight into the interaction among cultural attitudes, formal institutions, and gender norms. This may provide information about the potential limitations of using formal rules to alter gender norms.

The method presented in chapter two can be used to adjust the economic freedom index to account for discriminatory barriers to economic rights that exist along lines other than gender.

As more comprehensive data becomes available, it will be possible to account for formal and informal legal differences according to racial, ethnic, and religious backgrounds as well as sexual identity. As a result, it will be possible for future researchers to account for many of these discrepancies between economic freedom as it is currently measured, and the actual economic rights minority groups are able to exercise.

Additionally, increasing interest in gender issues in both the academic and policy realms means that more resources are being allocated to more accurately measure formal and informal gender disparity. Data sources such as the World Bank's *Women, Business, and the Law Report*, have expanded in scope even since this project was initiated. There is now a 50 year panel dataset measuring gender-based legal barriers that can be used to adjust the entire time series of available EFW index data. This adjusted EFW measure can then be used in panel data analyses. One interesting line of research would be to test whether or not the relationships between economic freedom and various development outcomes that have been found in the literature are more or less pronounced after accounting for gender-based legal barriers. Adjusting the EFW index on a historical basis makes it possible for future studies to employ this new, more accurate, measure of economic freedom.

In chapter three, the Index of Norms towards Women's Role in Society derived in the previous chapter, becomes the outcome variable of interest. This chapter examines which micro and macro-level factors affect the prevailing gender norms regarding whether males should be favored over females in education, employment, and leadership opportunities. The main hypothesis is that economic institutions consistent with economic freedom will be associated with gender norms that treat men and women more equally. The results of OLS estimates at both the country and individual levels are supportive of this hypothesis.

An overview of the norms index data is consistent with the idea that gender norms have become more tolerant over time. This pattern holds when looking at country-level averages of the entire sample, when these averages are separated into male and female averages, and when the sample is separated according to age group. Females have much higher scores on the Index of Norms toward Women's Role in Society than men in all three of the periods examined. Finally, younger generations consistently have more tolerant norms than older generations across all three periods.

The results of the country-level regression analysis demonstrate that economic freedom, democratic political institutions, and per capita income all have a positive and significant relationship with the country-level average scores on the norms index. The relationship between gender norms index scores and the percentage of the population that practices Islam is negative and highly significant. These results are largely unchanged when the regressions are estimated on various subdivisions of the data. The analysis of the individual-level data corroborates the macro-level results. All four macro-level variables exhibit the same pattern of significance in both the country-level and individual-level analyses.

The micro-level factors that are positively related to the norms index scores include being female, attending college, having employment, belonging to a higher income level, and being a member of a higher social class. Individuals that have had marriage experience, and those for which religion plays a prominent role in their lives, are more likely to possess gender attitudes that favor males over females.

Interestingly, the individual-level Islam dummy variable is never significant. This stands in contrast to the fact that a negative relationship between the overall percentage of a country's population that practices Islam and the gender norms index is one of the most robust macro-level results. This finding is consistent with the idea that it is not an individual's personal belief in Islam that influences their attitude about favoring males over females. Instead, the dominating influence on gender attitudes flows from the cultural context in which one lives.

The Index of Norms towards Women's Role in Society is a variable that could meaningfully contribute to various discussions of gender-based disparity. First, further research needs to be conducted to determine the causal factors that alter gender norms. In addition, the norms index could be a useful independent variable included in empirical models examining the gender wage gap, the disparity between the percentage of male and female political leaders, the disparity between the percentage of male and female CEOs, as well as gender-base inequality of other forms.

Finally, chapter four investigates whether there is a relationship between economic freedom and educational outcomes for women, as well as whether there is any evidence to suggest that the relationship is a causal one. An initial analysis of the data highlights the fact that remarkable changes in women's secondary and tertiary educational outcomes have occurred worldwide between 1980 and 2010. Tables 4.3 through 4.10 depict the countries with the largest

and smallest percentage change in each of the four educational outcomes. Most of the countries with the highest increases in tertiary enrollment rates are located in the Middle East and Africa such as Oman, Rwanda, Mauritius, Cyprus, Tanzania, and Benin. Other nations that have seen dramatic increases in tertiary enrollment rates are China, Malta, and Turkey. Oman, for example, had virtually no women enrolled in tertiary education in 1980, but by 2010, this increased to nearly 30% of females. China experienced a similar increase in tertiary enrollment rates from under 1% of females in 1980 to 27% of females by the end of the period.

The countries experiencing the most dramatic increases in secondary enrollment rates for females are located in similar regions. Oman, Tanzania, Burundi, Zambia, Uganda, Mali, Niger, and Tunisia are all located in the Middle East and Africa. The remaining two countries, Nepal and Bangladesh, are located in South Asia. Oman saw a dramatic increase in secondary enrollment rates with only 4% of women enrolled in 1980 and 93% enrolled by 2010. Zambia and Tunisia both experienced changes of a similar magnitude for secondary enrollment rates. Zambia's secondary enrollment rate increased from 11% in 1980 to 94% in 2010, while Tunisia's increased from 18% to 92% during the same period.

Even the countries with the smallest changes in educational outcomes have largely seen increases and not decreases in the absolute enrollment rate of females in tertiary and secondary education. There are 79 countries with tertiary enrollment data in both 1980 and 2010. All 79 of these countries had a higher tertiary enrollment rate in 2010 than in 1980. Japan, Sweden, Israel, Russia, Panama, and the United States are all among the ten countries with the smallest increases in tertiary enrollment rates between 1980 and 2010. Yet, in each of these six nations, tertiary enrollment rates increased by 32 percentage points or more. Thus, the countries that have changed the least relative to others have still experienced drastic increases in the tertiary enrollment rates of females.

There were 86 countries with secondary enrollment rate data in both 1980 and 2010. During this period, three countries experienced a decrease in the secondary enrollment rate for females, but 83 countries experienced an increase. While Albania, Bulgaria, and the Czech Republic each experienced a decline in the secondary enrollment rate, the decreases were all less than five percentage points. Like the other countries that experienced small changes in the secondary enrollment rate for females, these countries had high enrollment rates at the beginning of the period (80% or higher). An area of future research would be to conduct a deeper analysis

of women's educational outcomes in Albania, Bulgaria, and the Czech Republic to better understand which factors may result in a decline in enrollment rates, and why.

The results of panel analysis with fixed effects are consistent with the hypothesis that economic freedom is a significant determinant of higher enrollment rates for women in both tertiary and secondary education. Economic freedom is also associated with reductions in the gender enrollment gap for tertiary education. Additionally, past changes in economic freedom are associated with higher current tertiary and secondary enrollment rates, as well as with tertiary enrollment ratios that are closer to parity. There is some evidence that the positive impact economic freedom exerts on tertiary enrollment rates is a causal one. Taken as a whole, this study is consistent with the idea that movements toward economic freedom may be a productive way to increase enrollment rates for women in both secondary .

If gender equality is a desirable goal, then it is important to understand which factors help achieve that goal. This dissertation provides evidence that the presence of market-oriented institutions and the act of engaging in market interactions, helps lead to a society that is less likely to favor males over females in education, employment, and leadership opportunities. Overall, the findings in this dissertation are consistent with the view that economic institutions play an important role in improving the lives of women through enhancing their economic opportunities and acting as a catalyst for positive social change.

The institutions of economic freedom allow women (and men) to choose to become the people they want to become. These institutions provide the incentive for women to acquire the additional human capital that contributes to the achievement of a higher socio-economic status. Laws that are often passed with the intent of achieving gender equality, such as mandatory maternity leave, reduce economic freedom by increasing the regulatory burden faced by entrepreneurs. While these types of laws have good intentions, they may have the effect of increasing gender disparity through the erosion of economic freedom. It is important to more fully understand the tradeoffs being made when adopting gender-equality laws. This dissertation is one step in that direction.

APPENDIX A

APPENDIX TO CHAPTER TWO

Table A.1: The Summary Score and Subcomponents of the Gender Disparity in Economic Rights Index, 2009

Country	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Freedom of movement	Summary Score
Albania	1.00	0.50	1.00	0.50	1.00	**0.80**
Algeria	0.50	0.50	1.00	1.00	0.50	**0.70**
Argentina	1.00	1.00	1.00	1.00	1.00	**1.00**
Australia	1.00	1.00	1.00	1.00	1.00	**1.00**
Austria	1.00	1.00	1.00	1.00	1.00	**1.00**
Bahrain	0.50	0.50	1.00	0.50	0.50	**0.60**
Bangladesh	0.50	0.50	0.50	0.50	0.50	**0.50**
Belgium	1.00	1.00	1.00	1.00	1.00	**1.00**
Benin	0.50	0.00	0.50	0.50	1.00	**0.50**
Bolivia	1.00	1.00	1.00	1.00	1.00	**1.00**
Botswana	0.50	0.50	0.50	0.50	1.00	**0.60**
Brazil	1.00	1.00	1.00	1.00	1.00	**1.00**
Bulgaria	1.00	1.00	1.00	1.00	1.00	**1.00**
Burundi	0.50	0.50	0.50	0.50	1.00	**0.60**
Cameroon	0.50	0.50	0.50	0.00	0.50	**0.40**
Canada	1.00	1.00	1.00	1.00	1.00	**1.00**
Central African Republic	0.50	0.50	0.50	0.50	1.00	**0.60**
Chad	0.00	0.00	0.00	0.50	1.00	**0.30**
Chile	1.00	0.50	1.00	0.50	1.00	**0.80**
China	1.00	1.00	1.00	1.00	1.00	**1.00**
Colombia	1.00	0.50	1.00	1.00	1.00	**0.90**
Congo, Democratic Republic	1.00	0.50	0.00	0.00	1.00	**0.50**
Congo, Republic	0.50	0.50	0.50	0.50	1.00	**0.60**
Costa Rica	1.00	1.00	1.00	1.00	1.00	**1.00**
Cote d'Ivoire	0.50	1.00	0.00	0.50	1.00	**0.60**
Croatia	1.00	1.00	1.00	1.00	1.00	**1.00**
Czech Republic	1.00	1.00	1.00	1.00	1.00	**1.00**
Denmark	1.00	1.00	1.00	1.00	1.00	**1.00**
Dominican Republic	1.00	0.50	0.50	1.00	1.00	**0.80**

Table A.1 - Continued

Country	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Freedom of movement	Summary Score
Ecuador	1.00	1.00	0.50	1.00	1.00	**0.90**
Egypt, Arab Republic	0.50	1.00	1.00	1.00	1.00	**0.90**
El Salvador	1.00	0.50	1.00	1.00	1.00	**0.90**
Estonia	1.00	1.00	1.00	1.00	1.00	**1.00**
Fiji	1.00	0.50	1.00	0.50	1.00	**0.80**
Finland	1.00	1.00	1.00	1.00	1.00	**1.00**
France	1.00	1.00	1.00	1.00	1.00	**1.00**
Gabon	0.00	0.50	0.50	0.50	0.50	**0.40**
Germany	1.00	1.00	1.00	1.00	1.00	**1.00**
Ghana	0.50	0.50	0.50	0.50	1.00	**0.60**
Greece	1.00	1.00	1.00	1.00	1.00	**1.00**
Guatemala	1.00	0.50	1.00	1.00	1.00	**0.90**
Guinea-Bissau	0.00	0.00	0.50	0.50		**0.25**
Haiti	0.50		0.50	1.00	1.00	**0.75**
Honduras	1.00	1.00	1.00	1.00	1.00	**1.00**
Hong Kong, China	1.00	1.00	1.00	1.00	1.00	**1.00**
Hungary	1.00	1.00	1.00	1.00	1.00	**1.00**
Iceland	1.00	1.00	1.00	1.00	1.00	**1.00**
India	0.50	0.50	0.50	0.50	0.50	**0.50**
Indonesia	0.50	1.00	1.00	1.00	0.50	**0.80**
Iran, Islamic Republic	0.50	0.50	0.50	0.50	0.50	**0.50**
Ireland	1.00	1.00	1.00	1.00	1.00	**1.00**
Israel	1.00	1.00	1.00	1.00	1.00	**1.00**
Italy	1.00	1.00	1.00	1.00	1.00	**1.00**
Jamaica	1.00	1.00	0.50	0.50	1.00	**0.80**
Japan	1.00	1.00	1.00	1.00	1.00	**1.00**
Jordan	0.50	0.50	0.50	0.50	0.50	**0.50**
Kenya	0.50	0.00	0.50	0.50	1.00	**0.50**
Korea, Republic	1.00	1.00	1.00	1.00	1.00	**1.00**

Table A.1 - Continued

Country	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Freedom of movement	Summary Score
Kuwait	0.50	1.00	1.00	1.00	0.50	**0.80**
Latvia	1.00	1.00	1.00	1.00	1.00	**1.00**
Lithuania	1.00	1.00	1.00	1.00	1.00	**1.00**
Madagascar	1.00	0.50	1.00	1.00	1.00	**0.90**
Malawi	0.50	0.50	0.50	0.50	0.50	**0.50**
Malaysia	0.50	1.00	1.00	1.00	0.50	**0.80**
Mali	0.00	0.50	0.50	1.00	1.00	**0.60**
Mauritius	1.00	1.00	1.00	1.00	1.00	**1.00**
Mexico	1.00	1.00	1.00	1.00	1.00	**1.00**
Morocco	0.50	0.50	0.50	1.00	1.00	**0.70**
Myanmar	1.00	1.00	1.00	1.00	1.00	**1.00**
Namibia	0.00	0.50	1.00	0.50	1.00	**0.60**
Nepal	0.50	0.50	0.50	0.50	0.50	**0.50**
Netherlands	1.00	1.00	1.00	1.00	1.00	**1.00**
New Zealand	1.00	1.00	1.00	1.00	1.00	**1.00**
Nicaragua	1.00	0.50	1.00	1.00	1.00	**0.90**
Niger	0.50	0.50	0.50	1.00	1.00	**0.70**
Nigeria	0.50	0.50	0.50	0.50	0.50	**0.50**
Norway	1.00	1.00	1.00	1.00	1.00	**1.00**
Oman	0.50	0.50	1.00	0.50	0.50	**0.60**
Pakistan	0.50	0.50	0.50	0.50	0.50	**0.50**
Panama		1.00	1.00	1.00	1.00	**1.00**
Papua New Guinea	1.00	0.50	1.00	0.00	1.00	**0.70**
Paraguay	1.00	1.00	1.00	1.00	1.00	**1.00**
Peru	1.00	1.00	1.00	1.00	1.00	**1.00**
Philippines	1.00	1.00	0.50	1.00	1.00	**0.90**
Portugal	1.00	1.00	1.00	1.00	1.00	**1.00**
Romania	1.00	1.00	1.00	1.00	1.00	**1.00**

Table A.1 - Continued

Country	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Freedom of movement	Summary Score
Russian Federation	1.00	1.00	1.00	1.00	1.00	**1.00**
Rwanda	0.50	0.00	0.50	0.50	1.00	**0.50**
Senegal	0.50	0.50	0.50	1.00	1.00	**0.70**
Sierra Leone	0.00	0.00	0.50	0.00	1.00	**0.30**
Singapore	1.00	1.00	1.00	1.00	1.00	**1.00**
Slovak Republic	1.00	1.00	1.00	1.00	1.00	**1.00**
Slovenia	1.00	1.00	1.00	1.00	1.00	**1.00**
South Africa	0.00	0.50	0.50	1.00	0.50	**0.50**
Spain	1.00	1.00	1.00	1.00	1.00	**1.00**
Sri Lanka	0.50	0.50	1.00	0.50	1.00	**0.70**
Sweden	1.00	1.00	1.00	1.00	1.00	**1.00**
Switzerland	1.00	1.00	1.00	1.00	1.00	**1.00**
Syrian Arab Republic	0.50	0.50	1.00	0.50	1.00	**0.70**
Taiwan	0.50	1.00	1.00	1.00	1.00	**0.90**
Tanzania	0.50	0.50	0.50	0.50	1.00	**0.60**
Thailand	1.00	1.00	1.00	1.00	1.00	**1.00**
Togo	0.00	0.00	0.50	0.50	1.00	**0.40**
Trinidad and Tobago	0.50	1.00	1.00	1.00	1.00	**0.90**
Tunisia	0.50	1.00	1.00	1.00	1.00	**0.90**
Turkey	1.00	1.00	1.00	1.00	1.00	**1.00**
Uganda	0.00	0.50	0.50	0.50	0.50	**0.40**
Ukraine	1.00	1.00	1.00	1.00	1.00	**1.00**
United Arab Emirates	0.50	0.50	1.00	0.50	0.50	**0.60**
United Kingdom	1.00	1.00	1.00	1.00	1.00	**1.00**
United States	1.00	1.00	1.00	1.00	1.00	**1.00**
Uruguay	1.00	1.00	1.00	1.00	1.00	**1.00**
Venezuela, RB	1.00	1.00	1.00	1.00	1.00	**1.00**
Zambia	0.00	0.00	0.50	0.50	1.00	**0.40**
Zimbabwe	0.50	0.00	0.50	0.50	0.50	**0.40**

Table A.2: The Summary Score and Subcomponents of the Gender Disparity in Economic Rights Index, 2012

Country	Inheritance Daughters	Inheritance Widows	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Access to Public Space	Summary Score
Albania	0.50	1.00	0.75	0.50	0.50	0.50	0.50	**0.55**
Algeria	0.50	0.50	0.50	1.00	1.00	1.00	0.00	**0.70**
Argentina	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Australia	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Austria	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Bahrain	0.00	0.00	0.00	1.00	1.00	1.00	0.50	**0.70**
Bangladesh	0.50	0.50	0.50	0.50	0.50	0.50	0.50	**0.50**
Belgium	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Benin	0.50	0.00	0.25	0.00	0.00	0.00	0.50	**0.15**
Bolivia	1.00	1.00	1.00	0.50	0.50	0.50	1.00	**0.70**
Botswana	0.50	0.50	0.50	0.50	0.50	0.50	0.50	**0.50**
Brazil	1.00	0.50	0.75	0.50	0.50	0.50	1.00	**0.65**
Bulgaria	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Burundi	0.00	0.00	0.00	0.00	1.00	0.00	0.50	**0.30**
Cameroon	0.50	0.50	0.50	0.00	0.50	0.00	0.50	**0.30**
Canada	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Central African Republic	0.50	0.50	0.50	1.00	0.50	1.00	0.00	**0.60**
Chad	0.00	0.00	0.00	0.50	0.50	0.50	0.50	**0.40**
Chile	1.00	1.00	1.00	1.00	1.00	1.00	0.50	**0.90**
China	0.50	0.50	0.50	0.50	0.50	0.50	1.00	**0.60**
Colombia	1.00	1.00	1.00	0.50	0.50	0.50	0.50	**0.60**
Congo, Democratic Republic	1.00	0.00	0.50	0.50	0.00	0.00	0.00	**0.20**
Congo, Republic	0.50	0.00	0.25	0.50	0.50	0.50	0.50	**0.45**
Costa Rica	1.00	1.00	1.00	1.00	0.50	1.00	1.00	**0.90**
Cote d'Ivoire	0.50	0.50	0.50	0.50	0.50	0.50	0.50	**0.50**
Croatia	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Czech Republic	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Denmark	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Dominican Republic	1.00	1.00	1.00	0.50	0.50	0.50	1.00	**0.70**
Ecuador	1.00	1.00	1.00	0.50	0.50	0.50	1.00	**0.70**

Table A.2 - Continued

Country	Inheritance Daughters	Inheritance Widows	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Access to Public Space	Summary Score
Egypt, Arab Republic	0.00	0.00	0.00	1.00	1.00	0.00	0.00	**0.40**
El Salvador	1.00	1.00	1.00	0.50	0.50	1.00	1.00	**0.80**
Estonia	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Fiji	0.50	0.50	0.50	0.50	0.50	1.00	1.00	**0.70**
Finland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
France	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Gabon	0.00	0.00	0.00	0.50	0.50	0.50	0.00	**0.30**
Germany	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Ghana	0.50	0.50	0.50	0.00	0.50	0.50	1.00	**0.50**
Greece	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Guatemala	1.00	1.00	1.00	0.50	0.50	1.00	1.00	**0.80**
Guinea-Bissau	0.00	0.50	0.25	0.50	0.50	1.00	1.00	**0.65**
Haiti	1.00	0.50	0.75	0.50	0.50	1.00	1.00	**0.75**
Honduras	1.00	0.50	0.75	0.50	0.50	1.00	0.50	**0.65**
Hong Kong, China	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Hungary	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Iceland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
India	0.50	0.50	0.50	0.50	0.50	0.50	1.00	**0.60**
Indonesia	0.50	0.50	0.50	1.00	0.50	1.00	0.50	**0.70**
Iran, Islamic Republic	0.00	0.50	0.25	0.50	0.50	0.50	0.00	**0.35**
Ireland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Israel	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Italy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Jamaica	1.00	1.00	1.00	0.50	0.50	1.00	0.50	**0.70**
Japan	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Jordan	0.00	0.00	0.00	0.50	0.50	0.50	1.00	**0.50**
Kenya	0.50	0.50	0.50	0.50	0.50	0.00	1.00	**0.50**
Korea, Republic	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Kuwait	0.00	0.50	0.25	1.00	1.00	1.00	0.00	**0.65**
Latvia	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**

Table A.2 - Continued

Country	Inheritance Daughters	Inheritance Widows	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Access to Public Space	Summary Score
Lithuania	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Madagascar	0.00	0.00	0.00	0.50	1.00	1.00	1.00	**0.70**
Malawi	1.00	1.00	1.00	0.50	0.50	0.50	0.50	**0.60**
Malaysia	0.50	0.50	0.50	1.00	1.00	1.00	0.50	**0.80**
Mali	0.00	0.00	0.00	0.50	1.00	1.00	0.00	**0.50**
Mauritius	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Mexico	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Morocco	0.00	1.00	0.50	0.50	0.50	1.00	1.00	**0.70**
Myanmar	1.00	0.50	0.75	0.50	0.50	1.00	0.50	**0.65**
Namibia	0.50	0.50	0.50	0.50	0.50	0.50	1.00	**0.60**
Nepal	1.00	1.00	1.00	0.50	0.50	1.00	0.50	**0.70**
Netherlands	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
New Zealand	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Nicaragua	0.50	0.50	0.50	0.50	1.00	1.00	0.50	**0.70**
Niger	0.00	0.00	0.00	0.50	0.50	0.50	0.00	**0.30**
Nigeria	0.00	0.50	0.25	0.50	0.00	0.50	0.00	**0.25**
Norway	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Oman	0.00	0.00	0.00	0.50	0.50	0.50	0.00	**0.30**
Pakistan	0.50	0.50	0.50	0.50	1.00	0.50	0.00	**0.50**
Panama	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Papua New Guinea	0.50	0.50	0.50	0.00	0.50	0.50	0.50	**0.40**
Paraguay	1.00	1.00	1.00	0.50	1.00	1.00	1.00	**0.90**
Peru	1.00	1.00	1.00	0.50	1.00	1.00	1.00	**0.90**
Philippines	1.00	1.00	1.00	0.50	0.50	1.00	1.00	**0.80**
Poland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Portugal	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Romania	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Russian Federation	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Rwanda	0.50	0.50	0.50	0.50	0.50	0.50	0.50	**0.50**
Senegal	0.50	0.50	0.50	1.00	0.50	1.00	0.00	**0.60**

Table A.2 - Continued

Country	Inheritance Daughters	Inheritance Widows	Inheritance	Access to Land	Access to Credit	Access to Property Other Than Land	Access to Public Space	Summary Score
Sierra Leone	0.50	0.50	0.50	0.00	0.50	0.50	0.50	**0.40**
Singapore	0.50	0.50	0.50	1.00	1.00	1.00	1.00	**0.90**
Slovak Republic	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Slovenia	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
South Africa	1.00	1.00	1.00	0.50	0.50	0.50	1.00	**0.70**
Spain	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Sri Lanka	0.50	0.50	0.50	0.00	1.00	0.50	0.50	**0.50**
Sweden	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Switzerland	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Syrian Arab Republic	0.50	0.50	0.50	0.50	0.50	0.50	0.50	**0.50**
Taiwan	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Tanzania	0.00	0.00	0.00	0.50	0.50	0.50	0.50	**0.40**
Thailand	1.00	1.00	1.00	0.50	0.50	1.00	1.00	**0.80**
Togo	0.50	0.50	0.50	0.50	0.50	0.50	0.00	**0.40**
Trinidad and Tobago	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Tunisia	0.00	0.00	0.00	0.50	1.00	1.00	0.50	**0.60**
Turkey	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Uganda	0.00	0.00	0.00	0.00	0.00	0.00	0.50	**0.10**
Ukraine	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
United Arab Emirates	0.00	0.00	0.00	0.50	0.50	0.00	0.00	**0.20**
United Kingdom	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
United States	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Uruguay	1.00	1.00	1.00	1.00	0.50	1.00	1.00	**0.90**
Venezuela, RB	1.00	1.00	1.00	1.00	1.00	1.00	1.00	**1.00**
Zambia	1.00	0.50	0.75	0.50	0.50	0.50	0.50	**0.55**
Zimbabwe	0.50	0.50	0.50	0.50	1.00	0.50	0.50	**0.60**

Table A.3: The Summary Score and Subcomponents of the Index of Social Norms towards Women's Role in Society

Country	WVS Year	C001	D059	D060	Norms Index
Albania	2002	0.4028	0.4900	0.7333	0.5421
Algeria	2002	0.2280	0.3215	0.6393	0.3963
Argentina	2006	0.7105	0.6099	0.7300	0.6835
Australia	2005	0.8345	0.6354	0.7687	0.7462
Bangladesh	2002	0.1952	0.3853	0.3977	0.3260
Brazil	2006	0.7479	0.5960	0.7155	0.6865
Bulgaria	2006	0.6965	0.5063	0.7478	0.6502
Canada	2006	0.8590	0.6945	0.7877	0.7804
Chile	2005	0.6425	0.5282	0.6305	0.6004
China	2007	0.4358	0.4646	0.6223	0.5076
Colombia	2005		0.5864	0.7034	0.6449
Croatia	1996	0.5611	0.4803	0.7209	0.5875
Cyprus	2006	0.5867	0.5700	0.7653	0.6407
Czech Republic	1998	0.5993	0.4764	0.5855	0.5537
Dominican Republic	1996	0.8156	0.5840	0.7744	0.7247
Egypt	2008	0.0512	0.1251	0.5763	0.2509
El Salvador	1999	0.1796	0.5514	0.7299	0.4870
Estonia	1996	0.6186	0.3610	0.6109	0.5301
Finland	2005	0.8862	0.6754	0.7646	0.7754
France	2006	0.7978	0.7328	0.8819	0.8042
Germany	2006	0.7743	0.7175	0.7635	0.7517
Ghana	2007	0.4111	0.3000	0.6865	0.4659
Guatemala	2005	0.7910	0.6202	0.6986	0.7033
Hong Kong	2005	0.6720	0.5518	0.6213	0.6151
Hungary	1998	0.4291	0.4695	0.7752	0.5579
India	2006	0.2850	0.4104	0.5087	0.4014
Indonesia	2006	0.3953	0.4185	0.6552	0.4897
Iran	2007	0.1922	0.3408	0.4829	0.3386
Italy	2005	0.7291	0.6526	0.7255	0.7024

Table A.3 - Continued

Country	WVS Year	C001	D059	D060	Norms Index
Japan	2005	0.3987	0.5213	0.6157	0.5119
Jordan	2007	0.0779	0.2360	0.6217	0.3119
Korea, Republic of	2005	0.4426	0.4803	0.6544	0.5258
Latvia	1996	0.6907	0.3796	0.5965	0.5556
Lithuania	1997	0.5987	0.4381	0.6291	0.5553
Malaysia	2006	0.2370	0.3729	0.4985	0.3695
Mali	2007	0.2672	0.2708	0.4370	0.3250
Mexico	2005	0.7274	0.5184	0.5912	0.6123
Morocco	2007	0.3952	0.4255	0.6364	0.4857
Netherlands	2006	0.8582	0.7058	0.8063	0.7901
New Zealand	2004	0.9004	0.6647	0.7753	0.7801
Nigeria	2000	0.3317	0.2373	0.5306	0.3665
Norway	2008	0.9320	0.8165	0.9402	0.8962
Pakistan	2001	0.2097	0.4686	0.6597	0.4460
Peru	2008	0.8023	0.6384	0.6680	0.7029
Philippines	2001	0.1944	0.3950	0.5540	0.3811
Poland	2005	0.6179	0.5120	0.6799	0.6033
Romania	2005	0.5380	0.4960	0.7529	0.5956
Russian Federation	2006	0.5543	0.3990	0.5973	0.5168
Rwanda	2007	0.7173	0.4729	0.5900	0.5934
Singapore	2002	0.5422	0.4959	0.6872	0.5751
Slovakia	1998	0.4538	0.3732	0.5724	0.4665
Slovenia	2005	0.8442	0.6061	0.7488	0.7330
South Africa	2007	0.5807	0.4984	0.7304	0.6031
Spain	2007	0.8102	0.7477	0.7996	0.7858
Sweden	2006	0.9781	0.7714	0.8469	0.8655
Switzerland	2007	0.7449	0.7336	0.8136	0.7640
Taiwan	2006	0.4903	0.5160	0.6667	0.5576
Tanzania	2001	0.6748	0.5311	0.7602	0.6554

Table A.3- Continued

Country	WVS Year	C001	D059	D060	Norms Index
Thailand	2007	0.5571	0.4925	0.6129	0.5541
Trinidad and Tobago	2006	0.7240	0.6423	0.7851	0.7171
Turkey	2007	0.3603	0.4420	0.7435	0.5153
Uganda	2001	0.5502	0.3913	0.7251	0.5555
Ukraine	2006	0.6107	0.4651	0.5893	0.5551
United Kingdom	2006	0.8223	0.6421	0.7402	0.7349
United States	2006	0.9082	0.6194	0.7449	0.7575
Uruguay	2006	0.7602	0.6489	0.7233	0.7108
Venezuela	2000	0.6264	0.5873	0.8159	0.6765
Zambia	2007	0.6053	0.4863	0.6749	0.5889
Zimbabwe	2001	0.5722	0.4738	0.7146	0.5869

Table A.4: Descriptive Statistics for Subcomponents of the Gender Disparity in Economic Rights Index, 2009 and 2012

Variable Name	Observations	Mean	Standard Deviation	Minimum	Maximum
Inheritance	231	0.7316	0.3433	0	1
Access to Land	231	0.7316	0.3153	0	1
Access to Credit	232	0.7888	0.2764	0	1
Access to Property other than Land	232	0.8017	0.2934	0	1
Freedom of Movement	231	0.8268	0.2991	0	1
Gender Disparity Index	232	0.7759	0.2440	0.1	1

Table A.5: Correlation Coefficients for Subcomponents of the Gender Disparity in Economic Rights Index, 2009 and 2012

	Inheritance	Access to Land	Access to Credit	Access to Property other than Land	Freedom of Movement	Gender Disparity Index
Inheritance	1.0000					
Access to Land	0.6128	1.0000				
Access to Credit	0.5089	0.6581	1.0000			
Access to Property other than Land	0.5677	0.7105	0.6183	1.0000		
Freedom of Movement	0.5974	0.3321	0.3630	0.4253	1.0000	
Gender Disparity Index	0.8402	0.8341	0.7801	0.8311	0.6865	1.0000

Table A.6: Correlation between the 2009 and 2012 Gender Disparity in Economic Rights Indexes

Observations = 116		
	GDERI 2009	**GDERI 2012**
GDERI 2009	1.0000	
GDERI 2012	0.8260	1.0000

Table A.7: Correlation between the 2009 and 2012 Women Business and the Law Index

Observations = 108		
	WB&L 2009	**WB&L 2012**
WB&L 2009	1.0000	
WB&L 2012	0.9512	1.0000

Table A.8: Correlation between the Gender Disparity in Economic Rights Index and the Women Business and the Law Index, 2009

Observations = 109

	WB&L 2009	GDERI 2009
WB&L 2009	1.0000	
GDERI 2009	0.4711	1.0000

Table A.9: Correlation between the Subcomponents of the Gender Disparity in Economic Rights Index and the Women, Business, and the Law Index, 2009

Observations = 107

	Freedom of Movement WBL	Bank Account WBL	Property Rights WBL	Inheritance WBL	WBL Index	Inheritance GDERI	Freedom of Movement GDERI	Access to Land GDERI	Access to Credit GDERI	Access to Property other than Land GDERI	GDERI Summary
Freedom of Movement WBL	1.0000										
Bank Account WBL	-0.0551	1.0000									
Property Rights WBL	0.1002	0.4554	1.0000								
Inheritance WBL	0.4913	0.1145	-0.0563	1.0000							
WBL Index	0.6258	0.3531	0.3302	0.9032	1.0000						
Inheritance GDERI	0.3736	0.0113	0.1049	0.4358	0.4595	1.0000					
Freedom of Movement GDERI	0.5374	-0.0641	0.0354	0.4813	0.4997	0.5232	1.0000				
Access to Land GDERI	0.2640	0.1171	0.0934	0.2455	0.2958	0.6765	0.3150	1.0000			
Access to Credit GDERI	0.2396	0.3038	0.4442	0.1819	0.3677	0.6133	0.0357	0.6263	1.0000		
Access to Property other than Land GDERI	0.4335	0.1699	0.3098	0.1496	0.3251	0.5138	0.3880	0.6950	0.6174	1.0000	
GDERI Summary	0.4452	0.1417	0.2487	0.3641	0.4774	0.8548	0.5904	0.8637	0.8093	0.8149	1.0000

Table A.10: Correlation between the Gender Disparity in Economic Rights Index and the Women Business and the Law Index, 2009

Observations = 110

	WB&L 2012	GDERI 2012
WB&L 2012	1.0000	
GDERI 2012	0.5365	1.0000

Table A.11: Correlation between the Subcomponents of the Gender Disparity in Economic Rights Index and the Women, Business, and the Law Index, 2012

Observations = 109

	Freedom of Movement WBL	Bank Account WBL	Property Rights WBL	Inheritance WBL	WBL Index	Inheritance GDERI	Freedom of Movement GDERI	Access to Land GDERI	Access to Credit GDERI	Access to Property other than Land GDERI	GDERI Summary
Freedom of Movement WBL	1.0000										
Bank Account WBL	-0.0377	1.0000									
Property Rights WBL	0.1104	0.3208	1.0000								
Inheritance WBL	0.5376	-0.0439	-0.1368	1.0000							
WBL Index	0.6961	0.1607	0.2524	0.9039	1.0000						
Inheritance GDERI	0.5288	0.0654	0.1071	0.5784	0.6373	1.0000					
Freedom of Movement GDERI	0.4231	0.2084	0.1729	0.5643	0.6381	0.6924	1.0000				
Access to Land GDERI	0.2565	0.0692	0.2158	0.1266	0.2353	0.5560	0.3932	1.0000			
Access to Credit GDERI	0.2717	0.2562	0.2711	0.1736	0.3148	0.4525	0.3979	0.7206	1.0000		
Access to Property other than Land GDERI	0.3715	0.2488	0.2295	0.2097	0.3530	0.6012	0.5085	0.6939	0.6779	1.0000	
GDERI Summary	0.4662	0.2065	0.2416	0.4268	0.5538	0.8315	0.7599	0.8183	0.7833	0.8521	1.0000

Table A.12: Correlation between the Gender Disparity in Economic Rights Index and the Women Business and the Law Index Summary Scores, 2009 and 2012 Combined

Observations = 219

	WB&L	GDERI
WB&L	1.0000	
GDERI	0.4930	1.0000

Table A.13: Correlation between the Subcomponents of the Gender Disparity in Economic Rights Index and the Women, Business, and the Law, 2009 and 2012 Combined

Observations = 216

	Freedom of Movement WBL	Bank Account WBL	Property Rights WBL	Inheritance WBL	WBL Index	Inheritance GDERI	Freedom of Movement GDERI	Access to Land GDERI	Access to Credit GDERI	Access to Property other than Land GDERI	GDERI Summary
Freedom of Movement WBL	1.0000										
Bank Account WBL	-0.0469	1.0000									
Property Rights WBL	0.1052	0.3936	1.0000								
Inheritance WBL	0.5139	0.0495	-0.0961	1.0000							
WBL Index	0.6593	0.2740	0.2923	0.9034	1.0000						
Inheritance GDERI	0.4512	0.0316	0.1055	0.5069	0.5457	1.0000					
Freedom of Movement GDERI	0.3284	-0.0081	0.1330	0.2341	0.3001	0.5224	1.0000				
Access to Land GDERI	0.2675	0.1705	0.1789	0.2110	0.3044	0.5604	0.5075	1.0000			
Access to Credit GDERI	0.3065	0.2667	0.3265	0.1942	0.3553	0.6081	0.5423	0.6478	1.0000		
Access to Property other than Land GDERI	0.4185	0.1739	0.2276	0.3756	0.4860	0.6193	0.4023	0.5202	0.5535	1.0000	
GDERI Summary	0.4473	0.1580	0.2408	0.3893	0.5052	0.8393	0.7310	0.8070	0.8338	0.7833	1.0000

APPENDIX B

APPENDIX TO CHAPTER THREE

Table B.1: List of Countries in the Study Sample

High Income		**Not High Income**	
Country	**Year(s) of Survey Data**	**Country**	**Year(s) of Survey Data**
Australia	1995, 2005	*Albania*	1998, 2002
Canada	2000, 2006	*Algeria*	2002
Chile	1996, 2000, 2005	*Argentina*	1995, 1999, 2006
Croatia	1996	*Bangladesh*	1996, 2002
Cyprus	2006	*Brazil*	1997, 2006
Czech Republic	1998	*Bulgaria*	1997, 2006
Estonia	1996	*China*	1995, 2001, 2007
Finland	1996, 2005	*Columbia*	1998, 2005
France	2006	*Dominican Republic*	1996
Germany	1997, 2006	*Egypt*	2000, 2008
Hong Kong	2005	*El Salvador*	1999
Italy	2005	*Ghana*	2007
Japan	1995, 2000, 2005	*Guatemala*	2005
Korea, Republic of	1996, 2001, 2005	*Hungary*	1998
Latvia	1996	*India*	1995, 2001, 2006
Lithuania	1997	*Indonesia*	2001, 2006
Netherlands	2006	*Iran*	2000, 2007
New Zealand	1998, 2004	*Jordan*	2001, 2007
Norway	1996, 2008	*Malaysia*	2006
Poland	1997, 2005	*Mali*	2007
Russian Federation	1995, 2006	*Mexico*	1996, 2000, 2005
Singapore	2002	*Morocco*	2001, 2007
Slovakia	1998	*Nigeria*	1995, 2000
Slovenia	1995, 2005	*Pakistan*	1997, 2001
Spain	1995, 2000, 2007	*Peru*	1996, 2001, 2008
Sweden	1996, 1999, 2006	*Philippines*	1996, 2001
Switzerland	2007	*Romania*	1998, 2005
Taiwan	1994, 2006	*Rwanda*	2007
Trinidad and Tobago	2006	*South Africa*	1996, 2001, 2007
United Kingdom	2006	*Tanzania*	2001
United States	1995, 1999, 2006	*Thailand*	2007
Uruguay	1996, 2006	*Turkey*	1996, 2001, 2007
		Uganda	2001
		Ukraine	1996, 2006
		Venezuela	1996, 2000
		Zambia	2007
		Zimbabwe	2001

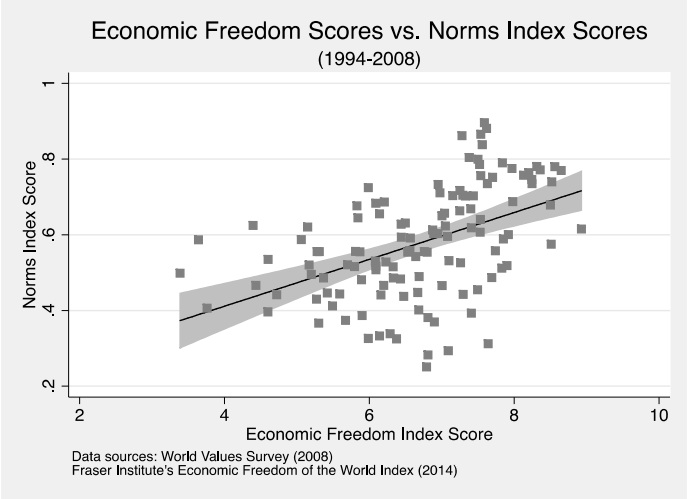

Figure B.1: Macro-Level Scatterplot with Trend Line

The scatterplot depicted in Figure B.1 indicates that the relationship between economic freedom scores and the macro-level norms index score is positive.

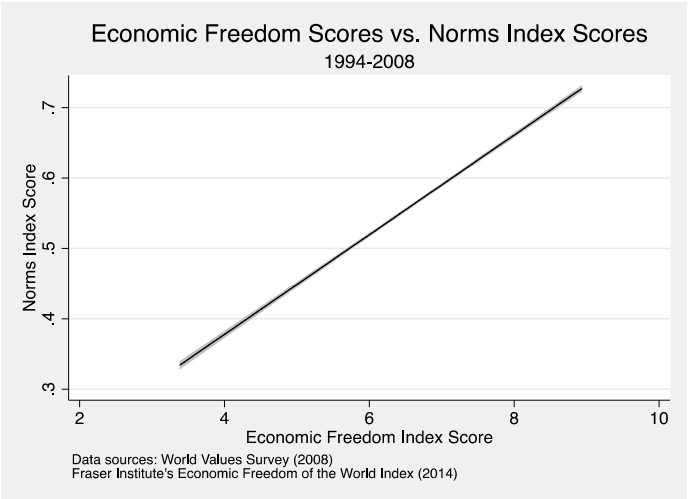

Figure B.2: Micro-Level Trend Line

Figure B.2 provides the trend line for the relationship between economic freedom scores. As with the macro-level norms index score, this relationship is positive.

APPENDIX C

APPENDIX TO CHAPTER FOUR

The following tables present Regression results from re-estimating all equations with lagged independent variables.

Table C.1: Results of Panel Analysis Stage-One Regression for (1) and (3) with Dependent Variables Lagged 10 Years

Fixed Effects with ln PC GDP as Dependent Variable	
STD_EFWt-10	0.1969***
	(0.0335)
STD_Polity2t-10	-0.0118
	(0.0307)
GESt-10	0.0494***
	(0.0156)
IsPctt-10	0.0186
	(0.0139)
Observations	452
Countries	111
Within R-Squared	0.2838
Random Effects with ln PC GDP as Dependent Variable	
STD_EFWt-10	0.2311***
	(0.0345)
STD_Polity2t-10	-0.0052
	(0.0307)
GESt-10	0.0582***
	(0.0171)
IsPctt-10	-0.0056
	(0.0035)
Observations	452
Countries	111
Within R-Squared	0.2625
Bootstrapped standard errors are reported in parentheses. p<0.01 ***, p<0.05 **, and p<0.10 *	

Table C.2: Results of Panel Analysis with Fixed Effects and with Dependent Variables Lagged 10 Years

Dependent Variable is Tertiary Enrollment Rate for Females						
	(1)		**(2)**		**(3)**	
STD_EFWt-10	13.6103***	5.8284***	3.4855*	-6.1192***	0.8237	-4.2942**
	(1.7475)	(1.7163)	(1.8064)	(1.7990)	(1.6795)	(1.7755)
STD_Polity2t-10	3.5852**	-0.0157	-0.6589	-5.3160***	-0.9174	-5.4255***
	(1.6434)	(1.8322)	(1.6619)	(1.6505)	(1.6744)	(1.6518)
Ln PC GDPt-10			21.8848***	9.2683**		
			(3.1365)	(3.6714)		
GESt-10	3.3930***	1.8314**	1.5816***	0.7735	2.6637***	1.2318**
	(0.9084)	(0.7638)	(0.6091)	(0.5122)	(0.6551)	(0.5398)
IsPctt-10	1.8664***	0.7465	0.9393**	0.2097	1.3471***	0.3824
	(0.5101)	(0.4567)	(0.4053)	(0.3291)	(0.4013)	(0.3287)
Ln PC GDP Residualst-10	27.2463***	12.7346***			21.8848***	9.2683**
	(4.0725)	(4.8484)			(3.1365)	(3.6714)
STD_EFWt-10 x Ln PC GDPt-10			7.1812***	6.2177***	7.1812***	6.2177***
			(0.9523)	(0.8152)	(0.9523)	(0.8152)
STD_EFWt-10 x STD_Polity 2t-10			-1.7016	-2.0788*	-1.7016	-2.0788*
			(1.2357)	(1.0904)	(1.2357)	(1.0904)
STD_Polity2t-10 x Ln PC GDPt-10			3.7698***	4.6542***	3.7698***	4.6542***
			(0.8058)	(0.6463)	(0.8058)	(0.6463)
1985		3.4737		4.1408***		4.1408***
		(2.5153)		(1.5836)		(1.5836)
1990		7.3437**		6.6353***		6.6353***
		(3.0519)		(2.1626)		(2.1626)
1995		14.2478***		13.2156***		13.2156***
		(3.2873)		(2.4113)		(2.4113)
2000		18.7616***		15.8963***		15.8963***
		(3.9031)		(2.9957)		(2.9957)
2005		24.5355***		21.4957***		21.4957***
		(4.3220)		(3.4916)		(3.4916)
2010		27.9963***		25.36697***		25.36697***
		(4.5553)		(3.6697)		(3.6697)
Observations	366	366	366	366	366	366
Countries	101	101	101	101	101	101
Within R-Squared	0.6231	0.7148	0.7579	0.8257	0.7579	0.8257

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.2- Continued

Dependent Variable is Tertiary Enrollment Ratio						
	(1)		**(2)**		**(3)**	
STD_EFWt-10	12.3536***	-0.4200	2.4300	-1.2394	7.7292*	-1.5461
	(2.3117)	(2.0312)	(4.0056)	(3.5315)	(4.1343)	(3.5327)
STD_Polity2t-10	4.8056**	-1.4933	6.6810*	-1.1592	6.3631*	-1.1408
	(2.3978)	(1.8463)	(3.8162)	(3.5832)	(3.8241)	(3.5902)
Ln PC GDPt-10			26.9127***	-1.5574		
			(6.3476)	(6.0853)		
GESt-10	0.8051	-1.9652	-0.5481	-1.7519	0.7827	-1.8289
	(1.3488)	(1.2742)	(1.2922)	(1.2613)	(1.3689)	(1.3563)
IsPctt-10	2.6278***	0.6379	2.0172**	0.6725	2.5186***	0.6435
	(0.8550)	(0.8794)	(0.8820)	(0.8733)	(0.8582)	(0.8823)
Ln PC GDP Residualst-10	27.0774***	-2.0657			26.9127***	-1.5574
	(6.4554)	(5.9831)			(6.3476)	(6.0853)
STD_EFWt-10 x Ln PC GDPt-10			2.8372	1.0472	2.8372	1.0472
			(2.0541)	(1.8591)	(2.0541)	(1.8591)
STD_EFWt-10 x STD_Polity 2t-10			-0.4216	-0.8431	-0.4216	-0.8431
			(2.7437)	(2.3683)	(2.7437)	(2.3683)
STD_Polity2t-10 x Ln PC GDPt-10			-1.3458	-0.6280	-1.3458	-0.6280
			(2.0845)	(1.5741)	(2.0845)	(1.5741)
1985		11.5390***		11.8349***		11.8349***
		(3.6560)		(3.8962)		(3.8962)
1990		23.5175***		23.7533***		23.7533***
		(4.2084)		(4.3437)		(4.3437)
1995		28.6012***		28.8173***		28.8173***
		(4.8776)		(5.0013)		(5.0013)
2000		41.8617***		41.9141***		41.9141***
		(4.8203)		(4.8581)		(4.8581)
2005		48.0736***		47.6491***		47.6491***
		(4.8802)		(4.9954)		(4.9954)
2010		53.5195***		53.1827***		53.1827***
		(5.1624)		(5.3264)		(5.3264)
Observations	366	366	366	366	366	366
Countries	101	101	101	101	101	101
Within R-Squared	0.4185	0.6195	0.4294	0.6208	0.4294	0.6208

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.2- Continued

Dependent Variable is Secondary Enrollment Rate for Females						
	(1)		**(2)**		**(3)**	
STD_EFWt-10	10.1630***	2.8706*	10.5688***	6.6245***	13.7149***	7.0524***
	(1.2529)	(1.4773)	(2.5534)	(2.3238)	(2.4926)	(2.3971)
STD_Polity2t-10	5.1786***	1.6328	5.6410**	2.3594	5.4523**	2.3338
	(1.7371)	(1.5533)	(2.3674)	(2.4648)	(2.3652)	(2.4545)
Ln PC GDPt-10			15.9783***	2.1734		
			(3.8743)	(4.2310)		
GESt-10	0.0402	-0.6657	-0.5837	-0.6033	0.2064	-0.4958
	(0.9255)	(0.8425)	(0.8897)	(0.7319)	(0.9356)	(0.7973)
IsPctt-10	0.4018	-0.5823	0.2142	-0.5109	0.5119	-0.4704
	(0.4100)	(0.4372)	(0.3950)	(0.3907)	(0.3995)	(0.4131)
Ln PC GDP Residualst-10	14.8353***	1.1446			15.9783***	2.1734
	(3.8986)	(4.5733)			(3.8743)	(4.2310)
STD_EFWt-10 x Ln PC GDPt-10			-2.1237*	-2.8950**	-2.1237*	-2.8950**
			(1.2202)	(1.2034)	(1.2202)	(1.2034)
STD_EFWt-10 x STD_Polity 2t-10			0.3375	0.8709	0.3375	0.8709
			(1.5978)	(1.4283)	(1.5978)	(1.4283)
STD_Polity2t-10 x Ln PC GDPt-10			-0.1710	-0.4323	-0.1710	-0.4323
			(1.2272)	(1.0249)	(1.2272)	(1.0249)
1985		6.8648***		6.0804***		6.0804***
		(1.7339)		(1.7408)		(1.7408)
1990		8.7790***		8.6768***		8.6768***
		(2.4078)		(2.3735)		(2.3735)
1995		17.7165***		17.4030***		17.4030***
		(2.8507)		(3.1201)		(3.1201)
2000		23.5976***		23.9856***		23.9856***
		(3.0824)		(3.1201)		(3.1201)
2005		23.7903***		24.6933***		24.6933***
		(3.5336)		(3.4298)		(3.4298)
2010		27.5393***		28.2827***		28.2827***
		(4.3080)		(4.1411)		(4.1411)
Observations	405	405	405	405	405	405
Countries	103	103	103	103	103	103
Within R-Squared	0.4129	0.5605	0.4260	0.5825	0.4260	0.5825

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.2- Continued

Dependent Variable is Secondary Enrollment Ratio						
	(1)		(2)		(3)	
STD_EFWt-10	2.5040**	-0.1546	7.9359***	6.3929***	9.3931***	6.7012***
	(1.0775)	(1.6184)	(2.0103)	(1.7935)	(2.0432)	(1.9684)
STD_Polity2t-10	1.6373	0.2518	4.0662**	2.6360	3.9788**	2.6175
	(1.2699)	(1.1881)	(1.9525)	(1.7952)	(1.9627)	(1.8031)
Ln PC GDPt-10			7.4006***	1.5654		
			(2.8227)	(3.5949)		
GESt-10	0.2741	0.0286	0.5198	0.5801	0.8857	0.6575
	(0.5665)	(0.5866)	(0.5290)	(0.5264)	(0.5611)	(0.5671)
IsPctt-10	0.2722	-0.1009	0.3845	0.0794	0.5224*	0.1085
	(0.4111)	(0.4009)	(0.3035)	(0.2266)	(0.3031)	(0.2453)
Ln PC GDP Residualst-10	3.7065	-1.5436			7.4006***	1.5654
	(3.1704)	(4.0309)			(2.8227)	(3.5949)
STD_EFWt-10 x Ln PC GDPt-10			-3.6378***	-4.0528***	-3.6378***	-4.0528***
			(0.9141)	(0.8602)	(0.9141)	(0.8602)
STD_EFWt-10 x STD_Polity 2t-10			-0.2727	-0.0145	-0.2727	-0.0145
			(0.9533)	(0.8497)	(0.9533)	(0.8497)
STD_Polity2t-10 x Ln PC GDPt-10			-2.3993**	-2.5144**	-2.3993**	-2.5144**
			(1.1057)	(1.0037)	(1.1057)	(1.0037)
1985		3.3579*		2.1105		2.1105
		(1.9110)		(1.7365)		(1.7365)
1990		3.6582		3.7947*		3.7947*
		(2.4322)		(2.0111)		(2.0111)
1995		7.0098**		6.6747***		6.6747***
		(2.7471)		(2.3960)		(2.3960)
2000		9.3353***		10.4668***		10.4668***
		(3.4364)		(3.0945)		(3.0945)
2005		9.8044**		10.9435***		10.9435***
		(3.8838)		(3.4686)		(3.4686)
2010		10.4818**		11.5335***		11.5335***
		(4.5379)		(4.0803)		(4.0803)
Observations	408	408	408	408	408	408
Countries	105	105	105	105	105	105
Within R-Squared	0.0937	0.1615	0.3016	0.3933	0.3016	0.3933

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.3: Results of Panel Analysis with Random Effects and with Dependent Variables Lagged 10 Years

Dependent Variable is Secondary Enrollment Ratio						
	(1)		(2)		(3)	
STD_EFWt-10	2.7653***	1.5745	8.1473***	7.0265***	9.7191***	8.4837***
	(0.9821)	(1.1336)	(1.9004)	(1.6713)	(1.8478)	(1.6076)
STD_Polity2t-10	2.1371*	1.4564	4.9118***	4.3207**	4.9472***	4.3535**
	(1.2379)	(1.2945)	(1.6553)	(1.7328)	(1.6548)	(1.7337)
Ln PC GDPt-10			6.8001***	6.3045***		
			(1.2170)	(1.1469)		
GESt-10	0.1837***	0.2434	0.3197	0.4438	0.7156	0.8108*
	(0.5082)	(0.5243)	(0.4754)	(0.4754)	(0.4700)	(0.4672)
IsPctt-10	-0.1385***	-0.1579***	-0.1284***	-0.1614***	-0.1667***	-0.1969***
	-0.0427	(0.0438)	(0.0382)	(0.0370)	(0.0393)	(0.0383)
Ln PC GDP Residualst-10	5.8275***	5.4327***			6.8001***	6.3045***
	(1.2298)	(1.2237)			(1.2170)	(1.1469)
STD_EFWt-10 x STD_Polity 2t-10			-3.6243***	-4.0146***	-3.6243***	-4.0146***
			(0.8132)	(0.7602)	(0.8132)	(0.7602)
STD_EFWt-10 x Ln PC GDPt-10			-0.0796	0.1331	-0.0796	0.1331
			(0.8432)	(0.7995)	(0.8432)	(0.7995)
STD_Polity2t-10 x Ln PC GDPt-10			-2.6970***	-2.9335***	-2.6970***	-2.9335***
			(0.8295)	(0.8134)	(0.8295)	(0.8134)
1985		1.4256		1.1339		1.1339
		(1.8429)		(1.5846)		(1.5846)
1990		1.0339		2.3394		2.3394
		(2.1030)		(1.7053)		(1.7053)
1995		3.9175*		4.8338***		4.8338***
		(2.1576)		(1.7235)		(1.7235)
2000		5.2993**		7.7964***		7.7964***
		(2.3778)		(2.0191)		(2.0191)
2005		5.0283*		7.2462***		7.2462***
		(2.6499)		(2.1651)		(2.1651)
2010		4.7568*		7.1102***		7.1102***
		(2.8488)		(2.3335)		(2.3335)
Observations	408	408	408	408	408	408
Countries	105	105	105	105	105	105
Within R-Squared	0.0887	0.1359	0.2909	0.3758	0.2909	0.3758

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.4: Results of Panel Analysis Stage-One Regression for (1) and (3) with Dependent Variables Lagged 15 Year

Fixed Effects with ln PC GDP as Dependent Variable	
STD_EFWt-15	0.2176***
	(0.0398)
STD_Polity2t-15	0.0039
	(0.0261)
GESt-15	0.0435***
	(0.0154)
IsPctt-15	0.01423
	(0.0169)
Observations	352
Countries	102
Within R-Squared	0.2604
Random Effects with ln PC GDP as Dependent Variable	
STD_EFWt-15	0.2666***
	(0.0437)
STD_Polity2t-15	0.0324
	(0.0291)
GESt-15	0.0581***
	(0.0167)
IsPctt-15	-0.0051
	(0.0034)
Observations	352
Countries	102
Within R-Squared	0.2456

Bootstrapped standard errors are reported in parentheses.

p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.5: Results of Panel Analysis with Fixed Effects and with Dependent Variables Lagged 15 Years

Dependent Variable is Tertiary Enrollment Rate for Females						
	(1)		**(2)**		**(3)**	
STD_EFWt-15	13.1190***	1.5880	-9.0604**	-11.1347***	-2.1885	8.5833***
	(2.9307)	(3.3311)	(3.7224)	(3.4957)	(3.0335)	(3.3450)
STD_Polity2t-15	6.0282***	0.7541	-4.4506*	-7.6877***	-4.3264*	-7.6416***
	(1.6888)	(1.8806)	(2.380)	(2.8341)	(2.3695)	(2.8318)
Ln PC GDPt-15			31.5784***	11.7243***		
			(4.8528)	(4.5588)		
GESt-15	2.6653**	0.8001	1.1694	0.0682	2.5417**	0.5777
	(1.1301)	(0.9228)	(0.9773)	(0.7788)	(1.0633)	(0.8162)
IsPctt-15	1.5558**	0.0159	0.5826	-0.4416	1.0331*	-0.2743
	(0.6891)	(0.5305)	(0.5794)	(0.3305)	(0.6019)	(0.3407)
Ln PC GDP Residualst-15	31.0390***	9.9916**			31.5784***	11.7243***
	(5.1471)	(5.0828			(4.8528)	(4.5588)
STD_EFWt-15 x Ln PC GDPt-15			8.4877***	5.7595***	8.4877***	5.7595***
			(1.4228)	(1.4101)	(1.4228)	(1.4101)
STD_EFWt-15 x STD_Polity 2t-15			-4.7248**	-2.7042*	-4.7248**	-2.7042*
			(1.8988)	(1.5941)	(1.8988)	(1.5941)
STD_Polity2t-15 x Ln PC GDPt-15			5.4453***	5.3213***	5.4453***	5.3213***
			(1.1374)	(1.1195)	(1.1374)	(1.1195)
1990		4.3860		4.0249		4.0249
		(3.0643)		(2.6315)		(2.6315)
1995		13.0277***		11.5853***		11.5853***
		(3.8641)		(3.0557)		(3.0557)
2000		20.0830***		17.7428***		17.7428***
		(4.0332)		(3.3683)		(3.3683)
2005		28.4092***		25.42202***		25.42202***
		(4.9755)		(4.2202)		(4.2202)
2015		35.0735***		32.4868***		32.4868***
		(6.0615)		(5.6263)		(5.6263)
Observations	288	288	288	288	288	288
Countries	91	91	91	91	91	91
Within R-Squared	0.5060	0.6870	0.6158	0.7576	0.6158	0.7576

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.5- Continued

Dependent Variable is Tertiary Enrollment Ratio						
	(1)		**(2)**		**(3)**	
STD_EFWt-15	11.7104***	-3.8779	3.7456	1.3217	9.3524	-0.2893
	(3.7860)	(2.6663)	(7.2040)	(4.8388)	(7.0034)	(4.6874)
STD_Polity2t-15	2.5150	-4.8941***	-3.1328	-6.5358*	-3.0314	-6.5649*
	(2.0923)	(1.8192)	(4.2864)	(3.8637)	(4.2765)	(3.8514)
Ln PC GDPt-15			25.7646***	-7.4033		
			(8.7312)	(7.8961)		
GESt-15	1.7722	-1.2835	1.1092	-0.8408	2.2288	-1.1625
	(1.5800)	(1.2569)	(1.6913)	(1.3810)	(1.7069)	(1.3987)
IsPctt-15	1.2592	-0.9731	0.9209	-1.8154	1.2884	-0.8469
	(0.8762)	(0.7955)	(0.8822)	(2.5961)	(0.9254)	(0.8588)
Ln PC GDP Residualst-15	24.5325***	-7.1158			25.7646***	-7.4033
	(8.5740)	(7.7696)			(8.7312)	(7.8961)
STD_EFWt-15 x Ln PC GDPt-15			2.3621	-1.8154	2.3621	-1.8154
			(3.1338)	(2.5961)	(3.1338)	(2.5961)
STD_EFWt-15 x STD_Polity 2t-15			-5.4223*	-1.4916	-5.4223*	-1.4916
			(3.2689)	(2.6789)	(3.2689)	(2.6789)
STD_Polity2t-15 x Ln PC GDPt-15			1.3528	0.3839	1.3528	0.3839
			(2.1603)	(1.7717)	(2.1603)	(1.7717)
1990		14.3975***		13.4378***		13.4378***
		(3.5712)		(4.1508)		(4.1508)
1995		20.6128***		20.2578***		20.2578***
		(4.3137)		(4.4943)		(4.4943)
2000		35.8800***		35.5607***		35.5607***
		(4.1773)		(4.4698)		(4.4698)
2005		43.8010***		43.7214***		43.7214***
		(4.1383)		(4.3519)		(4.3519)
2015		53.7737***		54.3210***		54.3210***
		(5.0589)		(5.2336)		(5.2336)
Observations	281	288	288	288	288	288
Countries	91	91	91	91	91	91
Within R-Squared	0.2486	0.5688	0.2626	0.5760	0.2626	0.5760

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.5- Continued

Dependent Variable is Secondary Enrollment Rate for Females						
	(1)		**(2)**		**(3)**	
STD_EFWt-15	6.6740***	0.4617	9.5991***	8.4124***	11.9171***	7.2507**
	(1.9641)	(2.1855)	(3.1141)	(3.1020)	(2.9118)	(3.0381)
STD_Polity2t-15	5.5650***	1.7805	6.1040	2.9645	6.1459	2.9435
	(2.0396)	(1.3318)	(4.1804)	(2.7721)	(4.17430	(2.7684)
Ln PC GDPt-15			10.65199**	-5.3384		
			(5.0317)	(5.6111)		
GESt-15	-0.2511	-1.6005	-0.8396	-1.5361	-0.3767	-1.7681
	(1.2836)	(1.1731)	(1.1979)	(1.0479)	(1.2458)	(1.1289)
IsPctt-15	0.5984	-0.4864	0.6534	-0.1529	0.8054	-0.2291
	(0.6544)	(0.6211)	(0.6902)	(0.7075)	(0.6870)	(0.7049)
Ln PC GDP Residualst-15	11.3684**	-3.9504			10.65199**	-5.3384
	(4.8712)	(5.7845)			(5.0317)	(5.6111)
STD_EFWt-15 x Ln PC GDPt-15			-2.9660*	-4.1272***	-2.9660*	-4.1272***
			(1.5984)	(1.4602)	(1.5984)	(1.4602)
STD_EFWt-15 x STD_Polity 2t-15			1.0130	1.3354	1.0130	1.3354
			(2.3997)	(1.5953)	(2.3997)	(1.5953)
STD_Polity2t-15 x Ln PC GDPt-15			1.0130	-0.3654	1.0130	-0.3654
			(2.4000)	(1.2041)	(2.4000)	(1.2041)
1990		3.3269		2.8802		2.8802
		(2.3535)		(2.3222)		(2.3222)
1995		14.6487***		14.6002***		14.6002***
		(3.4424)		(3.3680)		(3.3680)
2000		18.2443***		18.4617***		18.4617***
		(3.2390)		(3.2263)		(3.2263)
2005		21.1666***		21.6107***		21.6107***
		(3.5322)		(3.4711)		(3.4711)
2015		24.0044***		25.1978***		25.1978***
		(4.6313)		(4.4242)		(4.4242)
Observations	313	313	313	313	313	313
Countries	93	91	93	93	93	93
Within R-Squared	0.2494	0.4630	0.2654	0.4943	0.2654	0.4943

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.5- Continued

Dependent Variable is Secondary Enrollment Ratio						
	(1)		**(2)**		**(3)**	
STD_EFWt-15	1.1902	-0.8084	7.6256***	7.1060***	8.1021***	6.3529**
	(1.2017)	(2.1998)	(2.4373)	(2.3619)	(2.5203)	(2.5310)
STD_Polity2t-15	1.3872	0.1890	5.8173**	5.1449**	5.88259**	5.1313**
	(1.1742)	(1.0197)	(2.6473)	(2.1534)	(2.6453)	(2.1518)
Ln PC GDPt-15			2.1898	-3.4610		
			(2.3767)	(3.0185)		
GESt-15	0.5183	0.1219	0.5710	0.4186	0.6661	0.2682
	(0.6019)	(0.5849)	(0.4903)	(0.4737)	(0.5097)	(0.5040)
IsPctt-15	0.1643	-0.1794	0.4886	0.1877	0.5198	0.1383
	(0.4858)	(0.4374)	(0.4206)	(0.3120)	(0.4168)	(0.3181)
Ln PC GDP Residualst-15	2.4179	-2.4163			2.1898	-3.4610
	(2.7660)	(3.4061)			(2.3767)	(3.0185)
STD_EFWt-15 x Ln PC GDPt-15			-3.7224***	-4.1162***	-3.7224***	-4.1162***
			(1.2557)	(1.1589)	(1.2557)	(1.1589)
STD_EFWt-15 x STD_Polity 2t-15			1.2974	1.5094	1.2974	1.5094
			(1.3962)	(1.1754)	(1.3962)	(1.1754)
STD_Polity2t-15 x Ln PC GDPt-15			-2.5054**	-2.9194***	-2.5054**	-2.9194***
			(1.0647)	(0.9312)	(1.0647)	(0.9312)
1990		1.2612		1.2734		1.2734
		(1.3811)		(1.0507)		(1.0507)
1995		3.8840*		4.0751**		4.0751**
		(2.2778)		(1.9204)		(1.9204)
2000		6.0843**		6.9262***		6.9262***
		(2.6738)		(2.4534)		(2.4534)
2005		6.9347**		8.3414**		8.3414**
		(3.4349)		(3.2901)		(3.2901)
2015		7.4676*		8.6279**		8.6279**
		(4.2399)		(4.2361)		(4.2361)
Observations	314	314	314	314	314	314
Countries	93	93	93	93	93	93
Within R-Squared	0.0480	0.1356	0.2113	0.3360	0.2113	0.3360

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

Table C.6: Results of Panel Analysis with Random Effects and with Dependent Variables Lagged 15 Years

Dependent Variable is Secondary Enrollment Ratio						
	(1)		(2)		(3)	
STD_EFWt-15	1.5119	0.7387	7.5801***	7.2881***	8.5229***	8.0428***
	(0.9890)	(1.3996)	(2.0376)	(1.9391)	(1.9469)	(1.8431)
STD_Polity2t-15	1.7970	1.3156	6.9497***	7.0689***	7.0642***	7.1606***
	(1.1132)	(1.0746)	(1.9849)	(1.7956)	(1.9766)	(1.7914)
Ln PC GDPt-15			3.5362***	2.8304**		
			(1.2003)	(1.1940)		
GESt-15	0.3305	-0.2870	0.1858	0.2459	0.3913	0.4104
	(0.5456)	(0.5439)	(0.4716)	(0.4694)	(0.4674)	(0.4664)
IsPctt-15	-0.1234***	-0.1393***	-0.1051**	-0.1306***	-0.1231***	-0.1451***
	(0.0481)	(0.0492)	(0.0455)	(0.0455)	(0.0449)	(0.0450)
Ln PC GDP Residualst-15	4.8910***	4.4319***			3.5362***	2.8304**
	(1.2616)	(1.3275)			(1.2003)	(1.1940)
STD_EFWt-15 x STD_Polity 2t-15			-3.7663***	-4.0682***	-3.7663***	-4.0682***
			(1.0067)	(0.9697)	(1.0067)	(0.9697)
STD_EFWt-15 x Ln PC GDPt-15			1.6408	1.8276*	1.6408	1.8276*
			(1.2473)	(1.1047)	(1.2473)	(1.1047)
STD_Polity2t-15 x Ln PC GDPt-15			-3.0687***	-3.5203***	-3.0687***	-3.5203***
			(0.8336)	(0.8070)	(0.8336)	(0.8070)
1990		-0.0724		0.4668		0.4668
		(1.4503)		(1.0851)		(1.0851)
1995		1.5146		2.2360		2.2360
		(1.9581)		(1.5589)		(1.5589)
2000		3.6630*		5.1159***		5.1159***
		(2.1528)		(1.8405)		(1.8405)
2005		3.5282		5.7636***		5.7636***
		(2.5258)		(2.2064)		(2.2064)
2015		3.2616		4.6135*		4.6135*
		(2.7965)		(2.5360)		(2.5360)
Observations	314	314	314	314	314	314
Countries	93	93	93	93	93	93
Within R-Squared	0.0423	0.0981	0.1946	0.2948	0.1946	0.2948

Robust standard errors, clustered around each country, are reported in parentheses for specification (2). Bootstrapped standard errors are reported in parenthesis for the two-stage specifications (1) and (3). p<0.01 ***, p<0.05 **, and p<0.10 *

REFERENCES

Acemoglu, D. and S. Johnson. 2005. Unbundling Institutions. *Journal of Political Economy*, 113(5): 949-995.

Acemoglu, D., S. Johnson, and J. Robinson. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review*, 91(5): 1369-1401.

Acemoglu, D., S. Johnson, and J. Robinson. 2002. Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution. *Quarterly Journal of Economics*, 117(4): 1231-1294.

Alesina, A., P. Giuliano, and N. Nunn. 2013. On the Origins of Gender Roles: Women and the Plough. *Quarterly Journal of Economics*, 128(2): 469-530.

Ashenfelter, O. and T. Hannan. 1986. Sex Discrimination and Product Market Competition: The Case of the Banking Industry. *Quarterly Journal of Economics*, 101(1): 149–73

Bahrain Center for Human Rights. 2014. Family Law in Bahrain Report. Manama, Bahrain.

Barro, R. J. 2000. Inequality and Growth in a Panel of Countries. *Journal of Economic Growth*, 5(1): 5-32.

Barro, R. J. and R. M. McCleary. 2003. Religion and Economic Growth across Countries. *American Sociological Review*. 68(5): 760-781.

Baumol, W. 1990. Entrepreneurship: Productive, Unproductive and Destructive. *Journal of Political Economy*, 98(5): 893-921.

Becker, G. S. 1957/1971. *The Economics of Discrimination.* Reprinted. The University of Chicago Press. Chicago, IL.

Becker, G., T. J. Philipson, and R. R. Soares. 2005. The Quantity and Quality of Life and the Evolution of World Inequality. *American Economic Review,* 95(1): 277-291.

Berggren, N. 1999. Economic Freedom and Equality: Friends or Foes? *Public Choice*, 100(3-4): 203-223.

Berggren, N. 2003. The Benefits of Economic Freedom: A Survey. *The Independent Review*. 8:193–211.

Berggren, N. and H. Jordahl. 2006. Free to Trust: Economic Freedom and Social Capital. *Kyklos*, 59(2): 141-169.

Berggren, N., and T. Nilsson. 2013. Does economic freedom foster tolerance? *Kyklos,* 66(2): 177-207.

Berlin, I. 1958/1969. Two Concepts of Liberty. In Isaiah Berlin *Four Essays on Liberty.* Oxford: Oxford University Press.

Bjørnskov, C. 2007. Determinants of Generalized Trust: A Cross-Country Comparison. *Public Choice*, 130(1): 1-21.

Bjørnskov, C. and N. J. Foss. 2008. Economic Freedom and Entrepreneurial Activity: Some Cross-Country Evidence. *Public Choice.* 134(3-4): 307-328.

Bjørnskov, C., A. Dreher, and J. A. V. Fischer. 2010. *Formal Institutions and Subjective Well-Being: Revisiting the Cross-Country Evidence*. European Journal of Political Economy, 26(4): 419-430.

Black, S. E. and E. Brainerd. 2004. Importing Equality? The Effects of Increased Competition on the Gender-Wage Gap. *IRL Review, Cornell University,* 57(4): 540-559.

Boudreaux, K. 2007. State Power, Entrepreneurship, and Coffee: The Rwandan Experience. Mercatus Policy Series: Policy Comment # 15. Arlington, VA.

Branisa, B., S. Klasen, and M. Ziegler. 2009. The Construction of the Social Institutions and Gender Index (SIGI), Discussion papers, Ibero America Institute for Economic Research, No. 184.

Buchanan, J. M. 1979. Natural and Artifactual Man. In *What Should Economists Do?* Indianapolis, IN: Liberty Fund, Inc.

Caplan, B. 2007. *The Myth of the Rational Voter: Why Democracies Choose Bad Policies*. Princeton, NJ: Princeton University Press.

Congleton, R. D., A. L. Hillman, and K.A. Konrad. 2008. *40 Years of Research on Rent Seeking 2: Applications: Rent Seeking in Practice*. Berlin Heidelberg: Springer-Verlag.

Coyne, C. J. 2007. *After War: The Political Economy of Exporting Democracy*. Stanford, CA:Stanford University Press.

Coyne, C. J. and P. T. Leeson. 2004. Read All About It! Understanding the Role of Media in Economic Development. *Kyklos*, 57(1): 21-44.

Coyne, C. J. and P. T. Leeson. 2009. Media as a Mechanism of Institutional Change and Reinforcement. *Kyklos*, 62(1): 1-14.

Dawson, J. W. 1998. Institutions, Investment, and Growth: New Cross-Country and Panel Data Evidence. *Economic Inquiry.* 36: 603–19.

Dawson, J. W. 2003. Causality in the Freedom-Growth Relationship. *European Journal of Political Economy.* 19:479–95.

Dawson, J. W. 2006. Regulation, Investment, and Growth across Countries. *Cato Journa*l, 26(3): 489-509.

de Haan, J. 2003. Economic Freedom: Editor's Introduction. *European Journal of Political Economy*. 19: 395–403.

de Haan, J., and J. -E. Sturm. 2000. On the Relationship between Economic Freedom and Economic Growth. *European Journal of Political Economy* 16: 215–41.

de Haan, J., and J. -E. Sturm. 2003. Does More Democracy Lead to Greater Economic Freedom? New Evidence for Developing Countries. *European Journal of Political Economy*, 19, 547-563.

de Haan, J., S. Lundstrom, and J. -E. Sturm. 2006. Market-Oriented Institutions and Policies and Economic Growth: A Critical Survey. *Journal of Economic Surveys*, 20(2): 157-181.

de Tocqueville, A. 1835/2012. Democracy in America, edited by E. Nolla and translated by J. T. Schleifer. Indianapolis, IN: Liberty Fund, Inc.

Doepke, M. and M. Tertilt. 2009. Women's Liberation: What's in It for Men? *Quarterly Journal of Economics*, 124(4): 1541-1591.

Doepke, M., M. Tertilt, M., and A. Voena. 2012. The Economics and Politics of Women's Rights. *Annual Review of Economics,* 4(1): 339-372.

Dufflo, E. 2012. Women's Empowerment and Economic Development. *Journal of Economic Literature,* 50(4): 1051-1079.

Easterly, W. 2006. *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*. New York: The Penguin Press.

Easterly, W., R. Levine, and D. Roodman. 2004. Aid, Policies and Growth: Comment. *American Economic Review*, 94(3): 774-780.

Feldmann, H. 2007. Economic Freedom and Unemployment around the World. *Southern Economic Journal*, 74(1): 158-176.

Feldmann, H. 2010. Government Size and Unemployment in Developing Countries. *Applied Economics Letters*, 17(3): 289-292.
Fernandez, R., A. Fogli, and C. Olivetti. 2002. Marrying Your Mom: Preference Transmission and Women's Labor and Educational Choices. *NBER Working Paper No. 9234*,

Fernandez, R. 2007. Women, Work, and Culture. *Journal of the European Economic Association*, 5 (2-3): 305-332.

Fernandez, R. 2009. Women's Rights and Development. *NBER Working Paper No. 15355*

Gallup, J., J. Sachs, and A. Mellinger. 1999. Geography and Economic Development. *NBER Working Paper No. 6849*.

Glaeser, E. and A. Shleifer. 2002. Legal Origins. *Quarterly Journal of Economics*, 117(4): 1193-1229.

Geddes, R. and D. Lueck. 2002. The Gains from Self-Ownership and the Expansion of Women's Rights. *The American Economic Review,* 92(4): 1079-1092.

Gropper, D. M., R. A. Lawson, and J. T. Thorne Jr. 2011. Economic Freedom and Happiness. *Cato Journal,* 31(2): 237- 255.

Gwartney, J. D., R. G. Holcombe, and R.A. Lawson. 2004. Economic Freedom, Institutional Quality, and Cross-Country Differences in Income and Growth. *Cato Journal,* 24(3): 205-233.

Gwartney, J. D., R. G. Holcombe, and R.A. Lawson. 2006. Institutions and the Impact of Investment on Growth. *Kyklos,* 59(2): 255-273.

Gwartney, J. D. and R.A. Lawson. 2003. The Concept and Measurement of Economic Freedom. *European Journal of Political Economy*, 19(3): 405-430.

Gwartney, J. D. and R.A. Lawson. 2014. *Economic Freedom of the World, Annual Report*. Vancouver, B.C.: Fraser Institute.

Gwartney, J. D., R. A. Lawson, and W. Block. 1996. *Economic Freedom of the World: 1975–1995*. Vancouver, BC: The Fraser Institute.

Gwartney, J. D., R.A. Lawson, and R. G. Holcombe. 1999. Economic Freedom and the Environment for Economic Growth. *Journal of Institutional and Theoretical Economics* .155 (4): 1–21.

Hall, J. C., and R. A. Lawson. 2013. Economic Freedom of the World: An Accounting of the Literature. O'Neil Center for Global Markets and Freedom. Working Paper Series. 2013-02.
Hall, J., R. S. Sobel, and G. R. Crowley. 2010. Institutions, Capital, and Growth. *Southern Economic Journal*, 77(2): 385-405.

Hanson, J. R. 2003. Proxies in the New Political Economy: Caveat Emptor. *Economic Inquiry.* 41(4): 639-646.

Heckelman, J. C. 2005. Proxies for Economic Freedom: A Critique of the Hanson Critique. *Southern Economic Journal*. 72(2): 492-501.

Heckelman, J.C. and M.D. Stroup. 2000. Which Economic Freedoms Contribute to Growth? *Kyklos* .53(4): 527–544.

Hellerstein, J. K., D. Neumark, and K. R. Troske. 2002. Market Forces and Sex Discrimination. *The Journal of Human Resources*, 37(2): 353-380.

Heston, A., R. Summers, and B. Aten. 2011. Penn World Table Version 7.0. Philadelphia: Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania.

Hirsch, B., M. Oberfichtner, and C. Schnabel. 2014. The Levelling Effect of Product Market Competition on Gender Wage Discrimination. *IZA Journal of Labor Economics*. 19(3): 1-14.

Holcombe, R. G. 1998. Entrepreneurship and Economic Growth. *Quarterly Journal of Austrian Economics,* 1(2): 45-62.

Human Rights Watch. 2010. Human Rights Watch World Report, 2010. New York, New York: Human Rights Watch.

Jolliffe, D. and N. F. Campos. 2005. Does Market Liberalisation Reduce Gender Discrimination? Econometric Evidence from Hungary, 1986-1998. *Labour Economics,* 12(1): 1-22.

Jones, R.W. and A. C. Stockman. 1992. On the Concept of Economic Freedom. In *Rating Global Economic Freedom, edited by* S. T. Easton and M. A. Walker. Vancouver, BC: The Fraser Institute.

Jutting, J. P., C. Morrisson, J. Dayton-Johnson, and D. Drechsler. 2008. Measuring Gender (In)Equality: The OECD Gender, Institutions, and Development Data Base. *Journal of Human Development*, 9(1): 65-86.

Knack, S. and P. Keefer. 1999. Institutions and Economic Performance: Cross-country Tests using Alternative Institutional Measures. *Economics and Politics*, 7(3): 202-227.

Lang. J. 1998. Enquête sur la Situation des Femmes dans le Monde, *Assemblée Nationale, Paris*. 161-181.

La Porta, R., F. Lopez de Silanes, A. Shleifer, and R.W. Vishny. 1999. The Quality of Government. *Journal of Law, Economics and Organization*, 37 (2): 222-279.

LaPorta, Rafael, F. Lopez-de-Silanes, and A. Shleifer. 2008. The Economic Consequences of Legal Origins. *Journal of Economic Literature*, 46(2): 285-332.

Leeson, P. T. 2008. Media Freedom, Political Knowledge, and Participation. Journal of Economic Perspectives, 22(2): 155-169.

Levine, R., A. Levkov, and Y. Rubinstein. 2008. Racial Discrimination and Competition. NBER Working Paper Series 14273.

Levy, D.M. 2001. H*ow the Dismal Science Got Its Name: Classical Economics & the Ur-Text of Racial Politics*, University of Michigan Press.

Maoz, Z. and E.A. Henderson. 2013. The World Religion Dataset, 1945-2010: Logic, Estimates, and Trends. *International Interactions*, 39(3).

Marshall, M. G., T. R. Gurr, and K. Jaggers. 2013. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2012.* Center for Systematic Peace.

Mill, J. S. 1869/1989. The Subjection of Women. In, *J.S. Mill: On Liberty and Other Writings,* edited by S. Collini. Cambridge, UK: Cambridge University Press.

Mixon Jr., J. W. and G. H. Roseman. 2003. Male-Female Life Expectancy and Economic Freedom. *The Journal of Private Enterprise*, 19(1) Fall: 1-20.

Nikolaev, B. 2014. Economic Freedom and Subjective Well-Being: Revisiting the Relationship. MIMEO.

North, D. C., and R. P. Thomas. 1973. *The Rise of the Western World: A New Economic History*. New York: Cambridge University Press.

North, D. C. 1991. Institutions. *The Journal of Economic Perspectives*, 5(1): 97-112.

Nunley, J. M., M. F. Owens, and R. S. Howard. 2011. The Effects of Information and Competition on Racial Discrimination: Evidence from a Field Experiment. *Journal of Economic Behavior and Organization*, 80(3): 670-679.

Nussbaum, M. C. 1999. *Sex and Social Justice.* Oxford University Press, Inc. New York, NY.

Nussbaum, M. C. 2000. *Women and Human Development: The Capabilities Approach.* Cambridge University Press. Cambridge, UK.

Nussbaum, M. C. 2011. *Creating Capabilities: The Human Development Approach.* The Belknap Press of Harvard University Press. Cambridge, Massachusetts.

Organisation for Economic Co-Operation and Development. 2009. *Gender, Institutions, and Development Data Base.* Paris, France: Organisation for Economic Co-Operation and Development.

Organisation for Economic Co-Operation and Development. 2012. *Gender, Institutions, and Development Data Base.* Paris, France: Organisation for Economic Co-Operation and Development.

Organisation for Economic Co-Operation and Development. 2014. *Gender, Institutions, and Development Data Base.* Paris, France: Organisation for Economic Co-Operation and Development.

Ovaska, T. and R. Takashima. 2006. Economic Policy and the Level of Self-Perceived Well-Being: An International Comparison. Journal of Socio-Economics, 35(2): 308-325.

Paldam, M. 2003. The Economic Freedom of Asian Tigers: An Essay on Controversy. *European Journal of Political Economy*, 19(3): 453-77.

Pitlik, H. and M. Rode. 2014. Free to Choose? Economic Freedom, Relative Income, and Life Control Perceptions. *WIFO Working Papers, No. 482*.

Rabushka, A. 1991. Preliminary Definition of Economic Freedom. In *Economic Freedom: Toward a Theory of Measurement*, edited by W. Block. Vancouver, BC: The Fraser Institute.

Rabushka, A. 1991. Philosophical Aspects of Economic Freedom. In *Economic Freedom: Toward a Theory of Measurement*, edited by W. Block. Vancouver, BC: The Fraser Institute.

Scully, G. W. 2002. Economic Freedom, Government Policy and the Trade-Off between Equity and Economic Growth. *Public Choice*, 113: 77-96.

Sen, A. 1990. More than 100 Million Women are Missing. *New York Review of Books* 37 (20).

Sen, A. 1987/1999. *Commodities and Capabilities.* Reprinted by Oxford University Press. New Delhi, India.

Sen. A. 1999. *Development as Freedom.* Alfred A. Knopf, Inc. New York, NY.

Schuck, P. H. 2014. *Why Government Fails So Often: And How It Can Do Better*. Princeton, NJ: Princeton University Press.

Simmons, R. T. 2011. *Beyond Politics: The Roots of Government Failure*. Oakland, CA: The Independent Institute.

Smith, A. 1776/1976. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Chicago: University of Chicago Press.

Sobel, R. S., J.R. Clark, and D. R. Lee. 2007. Freedom, Barriers to Entry, Entrepreneurship and Economic Progress. *The Review of Austrian Economics*, 20(4): 221-236.

Stroup, M. D. 2008. Separating the Influence of Capitalism and Democracy on Women's Well-Being. *Journal of Economic Behavior and Organization*, 67 (3-4).

Stroup, M. D. 2011. Does Economic Freedom Promote Women's Well-Being. In J. D. Gwartney, and R. A. Lawson*, Economic Freedom of the World: 2011 Annual Report*, Fraser Institute: Canada.

U.S. State Department. 2010. *2009 Country Report on Human Rights Practices*. U.S. State Department, Washington, D.C.

U.S. State Department. 2013. *2012 Country Report on Human Rights Pra*ctices. U.S. State Department, Washington, D.C.

U.S. State Department. 2010. *2009 Human Rights Report*. U.S. State Department, Washington, D.C.

U.S. State Department. 2013. *2012 Human Rights Report*. U.S. State Department, Washington, D.C.

Vedder, R. 2015. Universities in Islamic Nations Make the Same Mistakes We Do- But Worse. *Commentaries.* The John William Pope Center for Higher Education Policy.

Veenhoven, R. 2000. Freedom and Happiness: A Comparative Study in 44 Nations in the Early 1990s. In *Culture and Subjective Well-Being*, edited by E. Diener and E. M. Suh Cambridge, MS: MIT Press.

Walker, M. A. 1996. Introduction: The Historical Development of the Economic Freedom Index. In *Economic Freedom of the World: 1975-1995*, edited by J. D. Gwartney, R. A. Lawson, and W. Block. Vancouver, BC: The Fraser Institute.

Weichselbaumer, D. and R. Winter-Ebmer. 2007. The Effects of Competition and Equal Treatment Laws on the Gender Wage Differential. *Economic Policy,* 22(4): 235-287.

Winston, C. 2006. *Government Failure versus Market Failure: Microeconomics Policy Research and Government Performance*. Washington, D.C.: Brookings Institution Press.

Wooldridge, J. M. 2002. *Econometric Analysis of Cross Section and Panel Data.* MIT Press: Cambridge, MA.

World Bank and the International Finance Corporation. 2010. *Women, Business and the Law 2010: Measuring Leal Gender Parity for Entrepreneurs and Workers in 128 Economies.* Washington D.C.: International Bank for Reconstruction and Development/The World Bank Group: Washington, D.C.

World Bank and the International Finance Corporation. 2012. *Women, Business and the Law 2012: Removing Barriers to Economic Inclusion, Measuring Gender Parity in 141 Economies*. International Bank for Reconstruction and Development/The World Bank Group: Washington, D.C.

World Bank and the International Finance Corporation. 2014. *Women, Business, and the Law 2014: Removing Restrictions to Enhance Gender Equality*. International Bank for Reconstruction and Development/The World Bank Group: Washington, D.C.

World Value Survey, 208. European and World Value Surveys six-wave Integrated Data File, 1981-2008. The European Values Study Foundation and World Value Survey Association. www.worldvaluesurvey.org.

BIOGRAPHICAL SKETCH

ROSEMARIE FIKE
Department of Economics
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EDUCATION

Ph.D., Economics — Florida State University — Summer 2015
Dissertation: The Impact of Economic Freedom on the Lives of Women.

M.A., Economics — George Mason University — August 2009
Thesis: The Knowledge and Incentive Problems of Bureaucracy: A Case Study of the Millennium Challenge Corporation.

B.S., Business Administration: Economics, Finance and Investment Management — Duquesne University — May 2007, Magna Cum Laude

AREAS OF RESEARCH

Primary: Economic Development, New Institutional Economics, and Public Choice
Secondary: Applied Econometrics, Austrian Economics

My research interest is to understand how different sets of formal and informal institutions shape the opportunities available to individuals and influence development outcomes.

PROFESSIONAL EXPERIENCE

PhD Fellow/Research Assistant	Florida State University, Economics Dept.	2009- Present
Contract Research Assistant	Mercatus Center, George Mason University	2011 - 2013
MA Fellow/ Research Assistant	Mercatus Center, George Mason University	2007 – 2009

TEACHING EXPERIENCE

Instructor:	Principle of Microeconomics	Summer 2011, Summer 2012
	Principles of Macroeconomics	Spring 2015
	Introduction to Economics	Summer 2014
Co-Instructor:	Political Economy Reading Group	Fall 2014
Co-Lecturer:	Principles of Microeconomics	Fall 2013, Fall 2014
	Principles of Macroeconomics	Spring 2014
	Institutions and Economic Development (Graduate)	Spring 2015
Teaching Assistant:	Economics of Asia	Summer 2014

JOURNAL ARTICLES

Public Choice, Government Failure, and Market Failure in Principles Textbooks. Coauthored with James D. Gwartney. Forthcoming, *Journal of Economic Education,* Spring 2015.

OTHER REFEREED PUBLICATIONS

Regulatory Process, Regulatory Reform, and the Quality of Regulatory Impact Analysis. Coauthored with Jerry Ellig. *Mercatus Working Paper*, No. 13-13, July 2013.

BOOK CHAPTERS

A Biography of James Buchanan. In *The American Middle Class: An Economic Encyclopedia of Progress and Poverty*, edited by, Robert Rycroft. Forthcoming. Coauthored with James D. Gwartney.

BOOK REVIEWS

The Power of Freedom: Uniting Human Rights and Development. A Review of Jean-Pierre Chauffour. *The Freeman*. February (2011): 46.

Does Foreign Aid Really Work? A Review of Roger C. Riddell. *Economic Affairs*. March (2009): 114-115.

Picture This: A Review of Thomas Neff's Holding out and Hanging On. Coauthored with Erin Agemy. in *Local Knowledge: Is the Gulf Coast Open for Business?* Mercatus Center: June 2008: 109-110.

UNDER REVIEW

Regulatory Process, Regulatory Reform, and the Quality of Regulatory Impact Analysis. Coauthored with Jerry Ellig. Revise and Resubmit, *Journal of Empirical Legal Studies*.

WORKING PAPERS

Economic Freedom and Educational Outcomes for Women: An Empirical Analysis. (Job market paper).

Is Anarchy without Coercion Possible? Lessons from the Old Order Amish and their Interactions with the Federal Government.

Incentive and Knowledge Problems at the Millennium Challenge Corporation.

OTHER POPULAR MEDIA

Congress Must Hold Expert Agencies Accountable. (with Jerry Ellig), *Roll Call*, (online) March 21, 2014 and (in print) March 24, 2014.

Regulation Should Be Smarter, Not Necessarily Faster. (with Jerry Ellig), *The Hill*, (online) February 28, 2014.

More Resources for Regulatory Review would Benefit Consumers. (with Jerry Ellig), *Roll Call*, September 6, 2013.

On the Least Pleasant Jobs. Essay discussed by Russ Roberts in his April 21, 2008 EconTalk Podcast.

CONFERENCE PRESENTATIONS

Association of Private Enterprise Education

2014 Las Vegas	Constructing Indexes of Economic Freedom that Account for Gender Differences in Access to Economic Rights.
2012 Las Vegas	Economic Freedom and Educational Outcomes for Women: An Empirical Analysis.
2009 Guatemala	The Knowledge and Incentive Problems of Bureaucracy: A Case Study of the Millennium Challenge Corporation.

Public Choice Society

2015 San Antonio	Economic Freedom and Educational Outcomes for Women: An Empirical Analysis.
2014 Charleston	Economic Freedom and Educational Outcomes for Women: An Empirical Analysis.

Southern Economics Association

2014 Atlanta	The Impact of Economic Freedom on Women's Educational Outcomes: An Empirical Analysis.
2012 Washington, D.C.	Economic Freedom and the Status of Women.

OTHER PRESENTATIONS

Institute for Humane Studies Scholarship and a Free Society Symposia

2012 Towson, MD	Economic Freedom and Women's Educational Outcomes: An Empirical Analysis.

Mercatus Center's Graduate Student Paper Workshop

2011 Arlington, VA	Is Anarchy without Coercion Possible? Lessons from the Old Order Amish and their Interactions with the Federal Government.

AWARDS AND FELLOWSHIPS

Dewey F. Bartlett Fellowship for Graduate Student Teaching Excellence 2014
Southern Economic Association Graduate Student Award Sessions 2014
Humane Studies Fellowship, Institute for Humane Studies 2009- 2010; 2013-2014; 2014-2015
Charles G. Koch Graduate Fellowship, Florida State University 2009-2013
Adam Smith Fellowship, Mercatus Center, 2012-2013
Visiting PhD Student Fellowship, Mercatus Center, Fall 2011
Graduate Student Fellowship, Mercatus Center, 2007-2009
- Richard Bacas Fellowship, 2008-2009
- Arthur Ciocca Fellowship, 2007-2008

Chancellor's Scholarship (full tuition), Duquesne University, 2002-2006

ADDITIONAL TEACHING-RELATED TRAINING

Creative Ideas for Teaching Economics, Gus. A. Stavros Center, February 2015
Common Sense Economics Course Development Workshop, Gus A. Stavros Center, May 2014

Creative Ideas for Teaching Economics, Gus A. Stavros Center, February 2014
Common Sense Economics Course Development, Workshop Gus A. Stavros Center, May 2013
Program for Instructional Excellence, Florida State University Graduate School, August 2012
Creative Ideas for Teaching Economics, Gus A. Stavros Center, February 2012
Economics Teaching Workshop, Florida State University, Department of Economics, Spring 2011
Creative Ideas for Teaching Economics, Gus A. Stavros Center, February 2010

INVITED COLLOQUIA

The Philosophical Foundations of Liberalism, Mercatus Center, September 2013
The Philosophy, Politics, and Economics of Liberty, Mercatus Center, June 2013
Liberty, Self-Governance, and Polycentrism, Mercatus Center, April 2013
Liberty and the Economics of Politics, Mercatus Center, February 2013
Colloquium in Honor of Israel Kirzner, Mercatus Center, February 2013
Liberty and the Market Process, Mercatus Center, October 2012
Liberty, Legitimacy, and Property in Robert Nozick's Anarchy, State, and Utopia, Institute for Humane Studies/Liberty Fund, November 2011
Colloquium on Economic Development, Koch/Liberty Fund, October 2011

OTHER PROFESSIONAL TRAINING

Index of Human Freedom Development Workshop, Gus A. Stavros Center, June 2013
Fragmentation to Focus, Productivity Seminar, Institute for Humane Studies, August 2013
Index of Human Freedom Development Workshop, Cato Institute, June 2011
Workshop on Qualitative Research Methods for Social Sciences, Mercatus Center, May 2008

PROFESSIONAL SERVICE

Referee, Public Choice 2015
Referee, Journal of Economics and Finance Education 2015
Referee, Journal of Regional Analysis and Policy 2012
Referee, Studies in Emergent Order 2011

PROFESSIONAL ASSOCIATIONS

Member: American Economic Association, Southern Economic Association; Public Choice Society; Association for Private Enterprise Education; Society for the Development of Austrian Economics