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Economic Freedom for Women and Fertility

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Abstract

Numerous studies in the development economics literature examine the connection between fertility and economic development. The consensus in the research is that as a nation develops and incomes rise, fertility rates decline. However, economic freedom and policies aimed at generating economic opportunities for women may also affect fertility rates. This article utilizes the Economic Freedom of the World Index (EFW), and the associated Gender Disparity Index (GDI) to discuss how economic freedom and, specifically, economic freedom for women is related to fertility, and other fertility-related outcomes.

1 Introduction

There are many factors that contribute to the decision to have a child. At its core, the decision comes down to the costs and benefits (Folbre, 1994). Numerous studies have analyzed how factors like policy, economic conditions, income, employment, and education impact birth rates. In general, it seems that higher income and educational attainment have a negative relationship with fertility. In recent years, as more remote work options become available, this relationship is not as strong as it used to be. And, there is still debate on the degree to which these factors influence fertility and their relative importance.

Fertility rates and population growth are at the forefront of heated debates in economic development research. Some warn of the consequences of fertility decline (Bloom and Sousa-Poza, 2010; D'Addio and d'Ercole, 2005; Weston and Parker, 2002), while others argue that population growth has consequences as well (Enke, 1971; Kelley, 1988).[1] These two concepts are seemingly at odds with one another. Declining fertility rates tend to be a greater concern in higher income or "developed" countries, and rapid population growth or high birth rates are more prevalent in developing nations. Increasing *and* decreasing fertility

[1]In this article, I make no normative statements about declining fertility rates or increasing population growth. This article is aimed at understanding the manner and degree to which certain policies, those who enable economic freedom for men and women alike, affect fertility.

rates can be of concern, depending on the context. This is why governments have tried to introduce policies specifically aimed at influencing fertility, and it appears that they make a difference (de Silva and Tenreyro, 2017, 2020).

There are also policies that may impact fertility indirectly. Policies that affect education, income, or other factors that are related to fertility should be considered. I argue that policies that affect economic freedom will also impact fertility rates. This article provides a novel contribution by examining this relationship using a variety of methods and measures to examine this relationship. Using a variety of methods and measures of both fertility and economic freedom, I find a consistent, significant, and negative relationship between economic freedom and fertility. For a measure of economic freedom, I use data from the Fraser Institute's Economic Freedom of the World Index (EFW). The EFW Index gives countries a score on a scale of 0 to 10, where the higher scores correspond with more economic freedom. There are five sub-components, or areas, of the EFW score: size of government, legal system and property rights, sound monetary policy, regulation, and freedom to trade internationally. Within the second area, legal system and property rights, there is an adjustment for the equal treatment of men and women under the law, this is called the Gender Disparity Index (GDI). The GDI score can be thought of as the equality of economic freedom between men and women in the country, but does not refer to the level of economic freedom in the country. I use both the EFW and GDI measures to examine how economic freedom overall, and the equality of economic freedom between men and women affect fertility. Even while controlling for income, human capital, other population policies, it appears that policies that promote economic freedom, and equal economic freedom for women, are associated with lower fertility rates. Further, I use matching methods to examine how large and sustained increased in EFW and GDI scores affect fertility. When countries experience increases in their gender disparity score, it leads to a decrease in fertility rates. In cases when countries experience increases in their economic freedom score, the results are mixed and largely insignificant.

I also examine other fertility-related outcomes to better understand how economic freedom is related to fertility. I find that the sex-ratio, male to female births, is also negatively associated with economic freedom and economic freedom for women. I also show that infant mortality is lower after increases in economic freedom and gender disparity scores. I also find evidence that measures of economic freedom are negatively correlated with the average age of mothers at the birth of their first child.

Later in this paper, I investigate some possible explanations and contributing factors to these results. Increases income, which then in turn increase the opportunity cost of having a child seems to be one a very likely channel that economic freedom impacts fertility. However, I see that even when I control for income,

economic freedom influences fertility rates.

2 Related Literature

The relationship between income and fertility has puzzled economists for some time (Sanderson, 1976). The overwhelming consensus in the research finds a negative relationship between income and fertility as well, most often offering the opportunity cost of the mother's time as an explanation (Becker, 1960). However, others find that there is a positive relationship between income and fertility when they consider the husband's income only (Freedman and Thornton, 1982), control for the net price of a child (Borg, 1989), social characteristics and marital status (Kunz, 1965). Perhaps, income increases allow people to afford fertility treatments, which could result in a positive relationship between income and fertility (Imrie et al., 2023).

Some studies introduced other characteristics that are known to be highly correlated with income as explanatory variables, such as education and human capital (Axinn, 2001; Basu, 2002), social status (Bollen et al., 2007), overall economic conditions (Sobotka et al., 2011), and find these all to be important determinants in the decision to have children.

Decades of research later, the discussion on the elusive relationship between income and fertility continues. Doepke et al. (2022) argue that in high income countries, the relationship between income and fertility is less pronounced, possibly reversed, and the relationship between women's labor force participation and fertility is now positive. Some possible explanations include: family policy, the father's participation in child rearing, social norms, and flexible labor markets. And thus, the relationship between income and fertility is murkier than ever. There are so many factors that can influence fertility decisions, and many of those factors are correlated with income. For example, employment status and employment type of both the mother and father seem to affect fertility rates (Barbieri et al., 2015; Caceres-Delpiano, 2012). Also, there is some evidence that having children affects a woman's decision to be an entrepreneur (Ajefu, 2019; Dutta and Mallick, 2018).

The motivation for understanding the relationship between income and fertility is ultimately about stability. The more income a family has, the more stable they are and able to maintain their current lifestyle while adding children to their family. Even so, there are other factors that can affect one's stability. However freedom, access to contraceptive methods, or bodily autonomy for women and girls, arguably supersede the importance of overall education and wealth in fertility decline (Campbell et al., 2013). Additionally, instances like war (Abu-Musa et al., 2008), pandemics (Dench et al., 2023), freedom from slavery (Allen, 2015), and political or economic instability (Alderotti et al., 2021) can affect fertility rates.

Fertility is a difficult topic to discuss, because while it is a deeply personal decision, fertility rates overall can have significant economic and societal impact (Feng et al., 2000). The discussion among demographers, economists and other social scientists grapples with two concepts: rapid population growth and fertility decline (Weston and Parker, 2002; D'Addio and d'Ercole, 2005). Numerous studies show there are consequences associated with both population growth and fertility decline (Bloom and Sousa-Poza, 2010). Therefore, some governments intervene via policy in attempts to either increase or decrease fertility rates. There are policies that directly target population growth, like China's One-Child Policy, for instance (McElroy and Yang, 2000; Rosenzweig and Zhang, 2009). Additionally, funding for family planning (Bailey, 2012), expanding access to contraceptives (Goldin and Katz, 2000, 2002) and abortion restrictions (Levine and Staiger, 2004) are other types of policies that affect fertility.

But there may be other government policies that impact fertility indirectly, like policies that affect the freedom to trade, property rights, and regulatory policies that prevent women from participating in economic activities in the same manner as men. It is known that economic freedom in general is associated with higher income, economic growth, resiliency during recessions, higher quality of life, education, and entrepreneurship (Hall and Lawson, 2014). Additionally, economic freedom is associated with many positive outcomes for women specifically, like education (Dills, 2023; Grier, 2023) and entrepreneurship (Sheehan and O'Reilly, 2023). Many of the things that the literature has established are connected to fertility are also connected to economic freedom. Piano and Stone (2023) examine economic freedom and the fertility gap across US States. The fertility gap is the difference between the number of desired children and actual fertility rate. They find a negative and significant relationship between economic freedom and the fertility gap. However, there are no studies that examine how or if the level of economic freedom influences fertility around the world. This article contributes to the existing literature by examining the relationship between economic freedom for women and fertility in a cross-country study.

Some countries do not grant the same economic freedoms to women as they do men, so it is also important to distinguish between economic freedom overall and economic freedom *for women*. In countries where women and men are able to participate in economic activities in the same manner, we might expect lower fertility rates because the opportunity cost for women having children has increased, resulting in lower fertility rates. Or, perhaps, following the argument made in Doepke et al. (2022), women could have more flexibility in labor markets, or men would be more likely to participate in parenting duties, reducing the cost of having a child and resulting in higher fertility rates. And, the same logic would apply when thinking about economic freedom overall.

3 Data and Methods

This article uses data from several sources. The Economic Freedom of the World Index (EFW) and the Gender Disparity Index (GDI) from the Fraser Institute as measures of economic freedom and the equality of economic freedom between men and women. EFW scores are on a scale of 1 to 10, and constructed with 42 variables that are categorized into five areas: size of government, legal system and property rights, sound money, freedom to trade internationally, and regulation. GDI scores are on a scale of 0 to 1, the GDI is included in the legal system and property rights area of the overall EFW score. The GDI score is based on 17 yes or no questions, where countries are given a 0 if the answer is no and 1 if the answer is yes and then all of those are added up and divided by 17. The higher GDI score, then the more equal women and men are, at least in terms of those questions.

The outcome variables in the analysis are the fertility rate, sex ratio, infant mortality, and average age at first birth. These data come from the United Nations Population Division and World Bank World Development Indicators. The fertility rate is the estimated number of children that would be born to a woman in that country. The sex-ratio is the ratio of male to female births in a country that year. The infant mortality rate is number of infant deaths per 1,000 births. The final outcome variable is the average age of mothers at the birth of their first child. This data only covers OECD countries from 2005-2009, I only conduct a simple fixed effects model and consider the results supplementary.

I match the treatment and control countries on GDP per capita, population, and a measure of human capital, and employment information provided by the Penn World Tables. As it was discussed in literature review, there is a known relationship between income, education, population, and employment with fertility outcomes. The Penn World Tables provides the human capital index, which is based on the average years of schooling from Barro and Lee (2013) and the assumed rate of return to education from (Psacharopoulos, 1994). The variable, "employment" also comes from the Penn World Tables which is the number of persons employed, or engaged, (in millions). This variable is calculated from numerous sources to include all persons aged 15 years and over, who performed work during the reference week, even just for one hour a week, or were not at work but had a job or business from which they were temporarily absent.

Lastly, I also include policies related to population and fertility in the matching process. I selected three variables from the United Nations World Population Policies Database: the official policy on the fertility rate, grounds on which abortion is permitted, and the degree to which the government supports family planning. The official policy on the fertility rate can be to maintain, raise, lower, or have no official policy. The grounds on which abortion is permitted is a count variable of the number of circumstances in which

abortion is permitted. The government support for family planning can be indirect, direct, or no support. It is important to control for policies that are targeting the fertility rate or fertility-related outcomes, as it was established in de Silva and Tenreyro (2017, 2020), because these policies have an impact on fertility rates.

I use matching methods to attempt to get a causal estimate of the relationship between the economic freedom and gender disparity indexes on the aforementioned fertility related outcomes. My methodology relies on previous work, which has looked at the impact of large increases in economic freedom. I also extend the analysis to include increases in economic freedom *for women* using the Gender Disparity Index. This article follows Grier and Grier (2021) and Callais and Young (2023), which use matching methods to capture causal estimates of large changes in EFW scores on income, and income distribution, respectively. These papers use increases greater than 1 point in the EFW score that are sustained for at least 5 years.[2] This article uses data from 1979-2019. Also, this article is focusing on economic freedom specifically for women, so I look at sustained increases in the Gender Disparity Index of 0.23 or greater. There are 48 countries that experience a sustained EFW score increase of 1 or greater, and 23 countries that experience a GDI score increase of 0.23 or greater over the period of study. In scenarios where a country experiences an increase more than once, the treatment period begins when the first increase occurs. These jump sizes were selected because they are roughly a one standard deviation increase in a country's score.

Tables 2 and 3 display all of the countries with EFW and GDI jumps, respectively, the 5 year increments over which the jumps occurred, and the size of the jump. Interestingly, there is very little overlap between the two groups of countries.[3] There are also some regional and income differences across the groups of countries with EFW and GDI jumps. According to Table 2, a majority of the EFW jump countries occurred in Sub-Saharan Africa, Latin America and the Caribbean, and Eastern Europe, and a majority of the jumps occurred in the 1980s and 1990s. For the GDI jump countries in Table 3, the story is very similar. Nearly all of the countries are located in Sub-Saharan Africa or Latin America and the Caribbean. Switzerland, however, stands out on the list as the only European country on the list. Despite the regional patterns in EFW and GDI jumps, there is no shortage of potential control units for these countries. By controlling for factors like income, population, human capital, employment, and population policy, the control units are selected to most closely match with the treated units.

I use matching techniques estimate the effect of a large increase in the Gender Disparity Index on these

[2]I am following the methodology used in Grier and Grier (2021). There are a couple reasons for choosing 5 years of more of a sustained increase. First, the EFW index scores are only available every 5 years prior to 2000. Second, the sustained increase means they did not immediately back slide in terms of economic freedom. If they did backslide right away it would not make sense to look at their future outcomes since they did not truly receive the treatment.

[3]Brazil, Peru, and the Philippines are the only countries that appear on both lists and overlap on the timing of the jumps. Chile appears on both lists, but the jumps did not occur over the same period.

same outcome variables. Propensity score matching (PSM) is the first matching technique, which constructs a control group by matching each treated country with a non-treated country using propensity scores. The scores are calculated using income, human capital, and economic freedom score lagged one year. The treated countries are matched to the nearest control country, the two nearest, and then the three nearest by propensity score. This process is repeated using Mahalanobis matching, which is similar to PSM, except that the pairs are matched based on the Mahalanobis distance. There is some evidence that PSM can yield non-robust results, so using other methods, like Mahalanobis matching along side PSM can help address these concerns (King and Nielsen, 2019; Ripollone et al., 2018). I also conduct a Chi-Squared covariate balance test to detect any meaningful differences in the covariate values between the matched controls and the treated units. The null hypothesis is that the two groups do not differ.

Table 1 displays the summary statistics and descriptions for all data used in this article. All observations are country by year, for the years 1979-2019.

4 Results

4.1 Fertility Rates

I use the countries identified in Grier and Grier (2021) that experienced a sustained increase in their Economic Freedom score of 1 point or greater, and countries I identified as having sustained increased in their Gender Disparity scores of 0.23 or greater. Using matching methods, I examine how changes in the Economic Freedom Index and Gender Disparity Index affect fertility rates. There are two matching methods used, propensity score matching and Mahalanobis distance matching.

Tables 4 and 5 display the results for the propensity score matching and Mahalanobis matching specifications. While the coefficients are mostly positive, there does not appear to be a consistently statistically significant relationship between increases in economic freedom and fertility rates. Looking at the χ^2 covariate balance test statistics, the PSM with one nearest neighbor matched is the only specification that we fail to reject the null hypothesis that that the matched controls and treated do not differ in the values of their covariates. Therefore, it is the preferred specification of the PSM specifications.

However, when there are large and sustained increased in the Gender Disparity Index, all of the specifications yield negative and significant coefficients for fertility rates 2 and 5 years in the future. The results are very consistent, suggesting that countries with increases in the GDI scores experience very large short run decreases in their fertility rates. There are several possible mechanisms that could explain these results, as

I've discussed in the previous sections of this article. Increases in economic freedom for women specifically should increase the opportunity cost of having a child due to higher incomes and increased educational and employment opportunities. Changes in the GDI could reflect changes in societal norms as well and changing attitudes towards women's role in society.

In an effort to provide a more complete picture about the relationship between economic freedom, gender disparity in economic freedom and fertility, I examine other fertility related outcomes in the following sections. Perhaps, looking at factors like the sex ratio, infant mortality, and the average age of mother's at the birth of their first child can shed light on the possibles mechanisms at play to explain the results in Table 5.

4.2 Sex Ratio

The sex-ratio is the ratio of male to female births in a country in a year. In Table 1, the summary statistics for the sex-ratio show that there is a preference for males around the world. Studies have shown that changes in the sex-ratio towards a preference for sons has a positive effect on fertility (Aksan, 2022; Chipman and Morrison, 2013). Financial incentives for having daughters may help mitigate this when countries, like India, attempt to lower fertility rates and sex-ratios simultaneously, but son-preference still seems to be a strong influence in fertility rates (Anukriti, 2018). Therefore, I look at how changes in economic freedom overall and economic freedom for women may affect the sex-ratio. First, increased economic opportunity for women may make having daughters more attractive, resulting in a lower sex-ratio. Second, increased economic opportunity may have an affect negative effect on fertility overall, which is known to be associated with the sex-ratio. I repeat the econometric techniques used in the previous section and the results are presented in Tables 6 - 7.

I find evidence that increases in EFW and GDI scores are associated with declines in the sex-ratio, or in other words, a increase in the bias towards females. This could be a reflection of increased preference for daughters or because of changes in fertility rates, or both. The direction of this relationship is unclear from this analysis, however these results can provide additional context and support for the main results.

4.3 Infant Mortality

Next, I look at the relationship between changes in EFW and GDI and infant mortality rates. Across several studies using a variety of specifications, there is an established positive relationship between infant mortality and fertility (Handa, 2000; Palloni and Rafalimanana, 1999; Siah and Lee, 2015). These positive effects of infant mortality on fertility can be seen as a replacement effect, where the lower likelihood of survival

informs fertility decisions (van Soest and Saha, 2018). Further, Yamada (1985) argues that an increase in real per capita income is what results in lower infant mortality and fertility rates. Therefore, I believe it is worthwhile to look at infant mortality rates, as yet another possible explanation or mechanism for the negative relationship between economic freedom and fertility rates.

In Tables 8 - 9, I estimate the impact of large increases in EFW and GDI scores on infant mortality rates. I find that there is a consistent, negative, and significant relationship between both economic freedom and gender disparity index scores and the infant mortality rate. This is likely due to increased economic prosperity, which is associated with economic freedom, resulting in lower mortality. In addition, these results provide further evidence and explanation for the previous results that show a negative impact on fertility rates after economic liberalizations.

4.4 Childbearing Age

Finally, I look at the average age of women at birth of first child by country by year. The data only comes from OECD countries from 2005-2019 for this variable, so there are fewer observations than in the previous specifications. Also, I am unable to conduct the two-way fixed effect and matching models with this data because of lack of observations and instances of jumps over this period, so these results are merely descriptive. I find that the relationship between EFW and GDI with the average age of a mother at the birth of their first child is positive and significant, which suggests that in more economically free environments, women are waiting longer to have their first child. I also find a negative and significant associated with income and a positive and significant association with human capital, which is consistent with the literature. This is one possible mechanism by which the main results could be explained.

5 Conclusion

In this article, I examine the relationship between Economic Freedom and Gender Disparity Index scores, as measured by the Fraser Index, and three outcomes related to fertility: the fertility rate, the male to female births ratio, and the infant mortality rate.

While accounting for factors like income, human capital, employment, population, and policy, all of which have been found to affect fertility rates, I find a consistent, significant, and negative relationship between measures of economic freedom and fertility and the aforementioned fertility-related outcomes. Therefore, I identify economic freedom, and gender dispartity in economic freedom as factors that affect fertility, which

has not yet been explored in previous work. The magnitude of these results vary across the specifications. For the fertility rate, I find a weakly positively relationship with economic freedom, and strongly negatively relationship with gender disparity in economic freedom. Countries that experienced large increases in their economic freedom saw small increases in their fertility rates, about 1 more child per woman of a child bearing age. This could be explained by the increased economic growth due to the liberalization (Grier and Grier, 2021), and a baby boom that could follow. However, when the economic freedom increases just for women, or the equality of economic freedom is increased, we could expect this to increase the opportunity cost of having a child for women. That increased opportunity cost is reflected in a dramatic decline in the fertility rate, around 4 children per woman.

Then, I look at the impact of large increases in EFW and GDI scores on the male to female sex-ratio and infant mortality. For the sex-ratio results, I find a weakly negative results with economic freedom and a statistically significant and negative results with equality of economic freedom. The negative coefficient on the sex-ratio means that the male preference declined. This could be explained by changing in norms surrounding women, and less of a negative stigma surrounding having a daughter, or a change in fertility rates overall. And for the infant mortality results, I find a consistently negative and statistically significant relationship with both economic freedom and gender disparity score increases. My estimates suggest about 30-50 fewer infant deaths per 1,000 live births. This is roughly a 1 standard deviation decrease in the infant mortality rate. Considering the positive relationship between infant mortality and fertility, this could be a possible mechanism by which we could explain the fertility rate results. If countries liberalize and experience large increases in income and growth and in turn experience a significant decline in infant mortality due to improvements in maternal health and healthcare, then we could expect a decline in fertility rates.

Finally, I look at the average age of mother's at the birth of their first child. I find that economic freedom scores and gender disparity scores are associated with women having their first child later in life. This is another possible explanation for the fertility rate results via the opportunity cost hypothesis. With an expansion of economic freedom for all, or an increase in the economic freedom for women specifically, the opportunity cost of a having a child has increased and women may wait longer to have a child because they are pursuing an education or working more than before.

With concerns about declining fertility rates developed countries and rapid population growth in developing countries at the forefront of scholarly debates, it is important to understand all of the factors that may affect fertility. My results suggest that even in countries that are actively trying to increase their fertility rates through policy, those effects at least partially offset by economic freedom and economic freedom for

women, specifically. Much like those who find a negative relationship between income and fertility do not suggest that countries try to decrease incomes to raise fertility rates, I do not suggest that way to raise fertility rates is to stifle economic freedom. According Table 1, nearly 41 percent of the countries have an official policy trying to lower fertility rates and 23 percent have a policy to raise during the period of study. For countries trying to lower their fertility rates, perhaps introducing policies that expand economic freedom, as well as equality of economic freedom between men and women, is worth considering. This relationship can be explained through several mechanisms, that increasing the opportunity cost of having a child, such as income, education, and employment status for parents. On the other hand, countries that are trying to raise their fertility rate should focus on what is known to have a positive effect on fertility like access to childcare, social norms around fathers participating in child rearing, and flexible work options that may mitigate economic freedom's effect on fertility.

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Table 1: Summary Statistics

Variable	Mean	St Dev	Min	Max	Description
Fertility Rate	3.420	1.843	1.078	8.230	The number of children that would be born to a woman in accordance with age-specific fertility rates. (UN Population Division)
Sex-Ratio	1.050	0.020	1.003	1.178	Male to female births ratio (World Development Indicators)
Infant Mortality Rate	39.420	37.269	1.800	189.900	Number of infant deaths per 1,000 births (World Development Indicators)
Mother's Average Age at First Birth	28.820	1.449	20.000	32.190	Average age of mothers at birth of first child - OECD only (UNECE Statistical Division Database)
Economic Freedom	6.719	0.760	2.349	8.832	Measurement of economic freedom (Fraser Institute)
Gender Disparity Index	0.801	0.198	0.294	1.000	Measurement of the economic freedom for women based on 17 questions about economic equality between men and women (Fraser Institute)
Employment	17.834	75.589	0.036	797.335	Number of employed people (millions) (Penn World Tables)
Population	39.076	138.615	0.063	1,402.760	Country's population (in millions)
GDP per Capita	11,560.100	16,160.780	165.900	114,047.900	Gross domestic product per capita (Penn World Tables)
Human Capital	2.293	0.668	1.014	4.352	Based on the average years of schooling and an assumed rate of return on education (Penn World Tables)
Policy on fertility = raise	0.229	0.420	0	1	Dummy variable indicating if there is an official policy attempting to affect fertility rates. (UN World Population Policies)
Policy on fertility = maintain	0.131	0.337	0	1	
Policy on fertility = lower	0.406	0.491	0	1	
Policy on fertility = no intervention	0.225	0.418	0	1	

Number of observations: 1,134.
Policy variables transformed into dummy variables in this table only for ease of interpretation.
More discussion on summary statistics available in Section 3.

Table 2: Treated Countries - EFW Jumps

Country	Years	EFW Jump
Chile	1975-1980	1.77
Portugal	1975-1980	1.82
Indonesia	1980-1985	1.04
Jamaica	1980-1985	1.11
Kuwait	1980-1985	1.92
Mauritius	1980-1985	1.48
Togo	1980-1985	1.28
Turkey	1980-1985	1.06
Bolivia	1985-1990	2.11
Brazil	1985-1990	1.01
Costa Rica	1985-1990	1.65
France	1985-1990	1.01
Ghana	1985-1990	1.79
Nicaragua	1990-1995	3.13
El Salvador	1990-1995	2.73
Uganda	1990-1995	2.37
Jordan	1995-2000	1.01
Mexico	1985-1990	1.59
New Zealand	1985-1990	1.57
Peru	1985-1990	1.40
Dominican Rep.	1990-1995	1.62
Egypt	1990-1995	1.41
Hungary	1990-1995	1.28
Ireland	1990-1995	1.19
Israel	1990-1995	1.43
Philippines	1990-1995	1.25
Poland	1990-1995	1.76
Portugal	1990-1995	1.20
Russia	1990-1995	1.20
Sri Lanka	1990-1995	1.21
Tanzania	1990-1995	1.45
T. & Tobago	1990-1995	1.67
Zambia	1990-1995	1.66
Albania	1995-2000	1.31
Croatia	1995-2000	1.40
Estonia	1995-2000	1.57
Iran	1995-2000	1.70
Latvia	1995-2000	1.42
Lithuania	1995-2000	1.25
Mali	1995-2000	1.28
Madagascar	1995-2000	1.35
Nigeria	1995-2000	1.49
Romania	1995-2000	1.64
Rwanda	1995-2000	1.65
Senegal	1995-2000	1.38
Ukraine	1995-2000	1.53
Bulgaria	2001-2005	1.44

Table 3: Treated Countries - GDI Jumps

Country	Years	GDI Jump
Cabo Verde	1980-1985	0.35
Haiti	1980-1985	0.35
Suriname	1980-1985	0.47
Switzerland	1981-1986	0.29
Peru	1981-1986	0.29
Angola	1984-1989	0.41
Philippines	1984-1989	0.29
Brazil	1986-1991	0.24
Burkina Faso	1986-1991	0.29
Eritrea	1988-1993	0.29
Argentina	1989-1984	0.29
Paraguay	1989-1994	0.23
Chile	1991-1986	0.35
Namibia	1992-1997	0.47
Central African Rep.	1994-1999	0.23
Ethiopia	1997-2002	0.29
Benin	2001-2006	0.41
Botswana	2001-2006	0.41
Mozambique	2001-2006	0.35
Lesotho	2002-2007	0.25
Sierra Leone	2005-2010	0.47
Timor-Leste	2008-2013	0.41
Dem. Rep. of Congo	2013-2018	0.41

Table 4: Economic Freedom Index Increase of 1 or Greater and Fertility Rates

	Fertility Rate (2 years)	χ^2 Covariate Balance	Fertility Rate (5 years)	χ^2 Covariate Balance
Propensity Score: Nearest Neighbor	0.692 (0.542)	18 [0.588]	0.750 (0.564)	18.7 [0.474]
Propensity Score: Nearest 2 Neighbors	1.142* (0.514)	170 [0.000]	1.679** (0.533)	175 [0.000]
Propensity Score: Nearest 3 Neighbors	1.647** (0.505)	190 [0.000]	1.737** (0.528)	187 [0.000]
Mahalanobis Distance: Nearest Neighbor	0.371 (0.545)	NA	0.578 (0.573)	NA
Mahalanobis Distance: Nearest 2 Neighbors	0.980 (0.508)	NA	1.127* (0.530)	NA
Mahalanobis Distance: Nearest 3 Neighbors	1.517** (0.503)	NA	1.612** (0.526)	NA

Note: Significance denoted as * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 5: Gender Disparity Index Increase of 0.23 or Greater and Fertility Rates

	Fertility Rate (2 years)	χ^2 Covariate Balance	Fertility Rate (5 years)	χ^2 Covariate Balance
Propensity Score: Nearest Neighbor	-4.420***	13.400	-3.838***	11.700
	(0.928)	[0.861]	(1.023)	[0.897]
Propensity Score: Nearest 2 Neighbors	-4.597***	9.410	-4.199***	8.460
	(0.926)	[0.978]	(1.009)	[0.981]
Propensity Score: Nearest 3 Neighbors	-4.327***	32.500	-3.946***	30
	(0.897)	[0.038]	(0.977)	[0.052]
Mahalanobis Distance: Nearest Neighbor	-4.601***	NA	-4.428***	NA
	(0.926)		(0.981)	
Mahalanobis Distance: Nearest 2 Neighbors	-4.141***	NA	-3.729***	NA
	(0.871)		(0.953)	
Mahalanobis Distance: Nearest 3 Neighbors	-4.015***	NA	-3.773***	NA
	(0.860)		(0.940)	

Note: Significance denoted as * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 6: Economic Freedom Index Increase of 1 or Greater and Sex Ratio

	Sex Ratio (2 yrs)	χ^2 Covariate Balance	Sex Ratio (5 yrs)	χ^2 Covariate Balance
Propensity Score: Nearest Neighbor	-0.039***	49.8	-0.044***	46
	(0.009)	[0.000]	(0.010)	[0.000]
Propensity Score: Nearest 2 Neighbors	-0.026***	172	-0.031***	171
	(0.009)	[0.000]	(0.009)	[0.000]
Propensity Score: Nearest 3 Neighbors	-0.008	187	-0.011	187
	(0.009)	[0.000]	(0.010)	[0.000]
Mahalanobis Distance: Nearest Neighbor	0.000	NA	-0.003	NA
	(0.010)		(0.011)	
Mahalanobis Distance: Nearest 2 Neighbors	-0.002	NA	-0.006	NA
	(0.010)		(0.010)	
Mahalanobis Distance: Nearest 3 Neighbors	-0.001	NA	-0.005	NA
	(0.009)		(0.010)	

Note: Significance denoted as * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 7: Gender Disparity Index Increase of 0.23 or Greater and Sex Ratio

	Sex Ratio (2 yrs)	χ^2 Covariate Balance	Sex Ratio (5 yrs)	χ^2 Covariate Balance
Propensity Score: Nearest Neighbor	0.011	142	0.012	143
	(0.011)	[0.000]	(0.012)	[0.000]
Propensity Score: Nearest 2 Neighbors	0.002	163	0.000	153
	(0.010)	[0.000]	(0.011)	[0.000]
Propensity Score: Nearest 3 Neighbors	-0.037***	149	-0.040***	150
	(0.010)	[0.000]	(0.010)	[0.000]
Mahalanobis Distance: Nearest Neighbor	-0.027**	NA	-0.031***	NA
	(0.011)		(0.012)	
Mahalanobis Distance: Nearest 2 Neighbors	-0.035***	NA	-0.037***	NA
	(0.010)		(0.011)	
Mahalanobis Distance: Nearest 3 Neighbors	-0.035***	NA	-0.038***	NA
	(0.010)		(0.011)	

Note: Significance denoted as * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 8: Economic Freedom Index Increase of 1 or Greater & Infant Mortality

	Infant Mortality Rate (2 yrs)	χ^2 Covariate Balance	Infant Mortality Rate (5 yrs)	χ^2 Covariate Balance
Propensity Score: Nearest Neighbor	-30.028***	49.8	-26.156**	46
	(10.622)	[0.000]	(10.972)	[0.000]
Propensity Score: Nearest 2 Neighbors	-50.181***	172	-48.712***	171
	(10.926)	[0.000]	(11.405)	[0.000]
Propensity Score: Nearest 3 Neighbors	-53.876***	187	-52.809***	187
	(10.855)	[0.000]	(11.341)	[0.000]
Mahalanobis Distance: Nearest Neighbor	-74.653***	NA	-69.507***	NA
	(10.601)		(11.048)	
Mahalanobis Distance: Nearest 2 Neighbors	-53.850***	NA	-50.315***	NA
	(10.747)		(11.144)	
Mahalanobis Distance: Nearest 3 Neighbors	-55.519***	NA	-53.390***	NA
	(10.795)		(11.233)	

Note: Significance denoted as * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 9: Gender Disparity Index Increase of 0.23 or Greater and Infant Mortality

	Infant Mortality Rate (2 yrs)	χ^2 Covariate Balance	Infant Mortality Rate (5 yrs)	χ^2 Covariate Balance
Propensity Score: Nearest Neighbor	-53.597***	142	-52.461***	143
	(12.095)	[0.000]	(12.715)	[0.000]
Propensity Score: Nearest 2 Neighbors	-48.190***	163	-48.286***	153
	(11.984)	[0.000]	(12.654)	[0.000]
Propensity Score: Nearest 3 Neighbors	0.944	149	0.535	150
	(11.125)	[0.000]	(11.765)	[0.000]
Mahalanobis Distance: Nearest Neighbor	-43.926***	NA	-45.384***	NA
	(12.282)		(12.898)	
Mahalanobis Distance: Nearest 2 Neighbors	-20.124*	NA	-20.409*	NA
	(11.482)		(12.141)	
Mahalanobis Distance: Nearest 3 Neighbors	0.406	NA	0.378	NA
	(11.208)		(11.861)	

Note: Significance denoted as * p < 0.05; ** p < 0.01; *** p < 0.001.

Table 10: Economic Freedom, Gender Disparity and Mother's Average Age at Birth of First Child

	(1)	(2)	(3)	(4)
Economic Freedom	0.623***	–	0.383***	–
	(0.081)		(0.071)	
Gender Disparity Index	–	1.474**	–	1.649***
		(0.0581)		(0.552)
GDP per capita	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Human Capital	0.075	0.526*	0.446**	0.523***
	(0.031)	(0.283)	(0.180)	(0.182)
Lagged 1 year	No	No	Yes	Yes
Adjusted R-squared	0.959	0.959	0.955	0.954
Observations	677	706	822	822

Note: Significance denoted as * p < 0.05; ** p < 0.01; *** p < 0.001.
All specifications include country and year fixed effects.