PAA 2013 submission - Extended Abstract

The Diffusion of Gender-Egalitarian Values and Fertility

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Abstract

In this paper, we assess whether the diffusion patterns of gender egalitarian values within countries are associated with fertility levels in developed countries. The argument builds around the idea that to be positively associated with fertility, gender equality must not only be high but also diffused among different sub-groups of the population - in particular, between men and women but also across education groups. Our empirical analysis is based on a sample of twenty countries - observed in 1990, 2000 and 2009 - using data from the World Values Surveys and European Values Studies. Our preliminary empirical results show that the gender equality level is positively associated to TFR in the wave 2000 and 2009. Also, our analysis provides evidence that differences in gender equality levels between men and women or among education groups is negatively associated to fertility levels.

1 Introduction

The second half of the twenty-first century is characterized by great changes in demographic behaviours. All developed countries have experienced a decline in marriage accompanied by a rise in divorce and cohabitation. Of greater consequence on the overall population structure, fertility rates have dropped to historically low-levels. Nordic and Anglo-Saxon countries have experienced a smoother transition reaching fertility levels around replacement levels, whereas Eastern European and Mediteranean countries have reached the so-called "lowest-low" fertility rates - below 1.3 children per woman (Kohler et al. 2002; Billari and Kohler 2004).

Explanations of cross-national differences in fertility trends fall into three categories: structural factors, institutions and value changes (See for a full review Balbo et al. 2012).

A first strand of the literature uses economic explanations for the dynamics of country-level fertiliy trends. The literature on the association between variations in GDP and Total Fertily Rate (TFR) is ambiguous (Balbo et al. 2012), while the effect of unemployment rate is consistently found to be negative (See for example Orsal and Goldstein 2010). Other scholars have focussed on female labour force particpacion. For example, Luci and Thevenon (2010) find a U-shaped relationship between female employment and fertility. Looking at a more general indicator of socio-economic development, (Myrskylä et al. 2009) show that, for the great majority of countries, there is a reversal in the relationship between Human Development Index (HDI) and TFR as countries achieve very high HDI levels.

The importance of institutional differences and policy regimes has also been widely studied. The differences in the welfare regimes, evident in Esping-Andersen's typology (Esping-Andersen 1999, 2009), go hand-in-hand with differences in the strength of the family institution and reflects on how different societies are organized with regards to who provides family care. Generally speaking the Southern and Eastern countries show the lowest levels of de-familialization (highest coverage of public provision), and Denmark the highest (Saraceno 2010).

Our paper relates to the third set of explanations of fertility changes, namely value changes, related in particular to gender equity. Esping-Andersen et al. (2010) expect fertility to be lowest in the transition from a traditional to an egalitarian family model but once completed and a new equilibrium is achieved, higher fertility levels are expected. McDonald (2004) theory of gender equity posits that both equity at the institutional level (i.e. formal education and the labour market) and within the family are necessary for fertility to rise. McDonald argues that, in a context where only the former prevails, fertility is likely to remain low. Myrskylä et al. (2011) show that gender equality is a necessary condition for the reversal in the relationship between fertility and high-development. This is also consistent with the idea that some countries are heading towards a new equilibrium thanks to the gradual breaking free from constraints to fertility imposed by female labour force participation.

The aim of this article is to focus on the later explanation, namely value changes. While previous research concentrates on the relationship between gender equality and fertility at either the country or the individual level, we are interested in understanding whether the diffusion of gender egalitarian values within countries is related to aggregate fertility. The idea

is that not only the level of gender equality values is important but also its distribution across gender and education groups. Similar average levels of gender equality values might have a different meaning (and impact on fertility) according to their dispersion across groups. If, for example, the average value of gender equality is mainly driven by women's values, this might create tension among sexes and thus not foster higher fertility levels. Differences in gender values between education groups are also relevant for fertility trends. Our hypothesis is that in societies where the gender and education gaps in gender egalitarian values is lower the TFR tends to be higher, especially if also the average level of gender egalitarian values is high.

The objectives of this article are two-fold. First, we intend to explore whether values towards gender roles are converging over time and to what extent there are differences between gender and educational groups regarding these values. Second, we would like to assess whether convergence(divergence) in gender egualitarian values within countries is related to higher(lower) fertility levels.

2 Data

To perform our empirical analysis we use data from the World Values Survey and the European Values Study. The datasets consists of repeated individual level surveys, which are conducted every five years. The first wave was sampled in 1981 while the last wave took place in 2008/2009. The countries and part of the questionaires have changed over the years. In order to obtain a balanced dataset, we use information on twenty countries for the following three waves: 1990-1993, 1999-2000 and 2006-2009. Our measure of values towards gender roles is based on a single question[1]:"When jobs are scarce, men should have more right to a job than women? Do you agree or disagree with the following statements?" The question offers three possible answers: 1 'agree', 2 'disagree' and 3 'neither'. We recode the variable into a binary response: 0 is 'agree' or 'neither' and 1 is 'disagree'. This way, we consider that individuals who respond '1' are gender egalitarian.[2]

As a first step towards our empirical analysis, we construct a variable which measures the percentage of gender egalitarian respondents by country and by wave. Being our variable binary, the percentage is also a measure of dispersion/concentration: the closer is the percentage to 1 or 0 the more similar are the values within a country in a given point in time. To better analyse the diffusion of values we also calculate the percentage of egalitarian persons by gender and educational groups. Figure 1 shows the average value of the percentage of egalitarian persons by country. As expected, Nordic and Anglo-Saxon countries are the more gender egalitarian areas, while Eastern European and Mediteranean countries have the lowest average percentage of egalitarian respondents.

[1]The question corresponds to variable c001 in the dataset.

[2]We focus on one question, instead of a summary index using more items, because we believe that it captures cleary attitudes towards egalitarian vs. traditional gender roles. Other questions are more ambiguous. Moreover, when we tried to combine them in a summary index, we got very low reliability values.

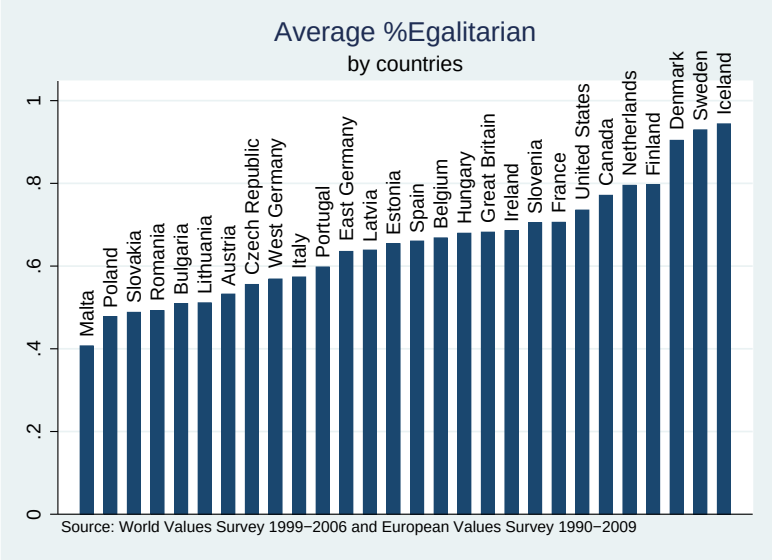

Figure 1: Average percentage of egalitarian respondents by country and wave

3 Preliminary results

In the first part, we focus on exploring within-country differences, first, between men and women, and then, between education groups [3]. For each country, we run two simple probit models taking as a dependent variable the gender value variable previously discussed, where 0 stands for traditional gender values and 1 for egalitarian gender values. In the first model, we include the following independent variables: gender, wave, the interaction between wave and gender, birth cohort and education. Figure 2 shows the predicted probabilities by gender over time for three selected countries: Canada, Denmark and Italy. As expected, we find large differences in terms of overall levels of gender egalitarian values between countries. Surprisingly, while in Denmark and Italy, we observe a diffusion of gender egalitarian values, in Canada the level stagnates over time once we control for cohort and educational composition. Furthermore, in Denmark there is not gender gap in the last survey wave, whereas in Canada we observe a small gender gap of about 5% but it is not statistically significant. In Italy, the gender gap is significant across the three waves and while women are leading the value change, men are slowly catching up.

In the second model, we include include an interaction between education and wave and control for changes in birth cohort and gender. As for the first model, figure 3 shows the predicted probabilities for the same selected countries - Canada, Denmark and Italy - but highlighting differences between education groups over time. We observe that, differently from the gender gap, the educational gap persists over time for all three countries. However, each country experiences a singular pattern of convergence between the three educational levels. In Canada, there is a 10% difference between each educational group, which remains fairly stable over time. Nevertheless, only the highly-educated are statistically different from the other two

[3]The education variable is measured as age at which the respondent completes his or her full education (x023). The variable is left-truncated at age 12 and right-truncated at age 21. We recode the variable as a categorical variable: 12-16 'low', 17-20 'medium', 21 'high'.

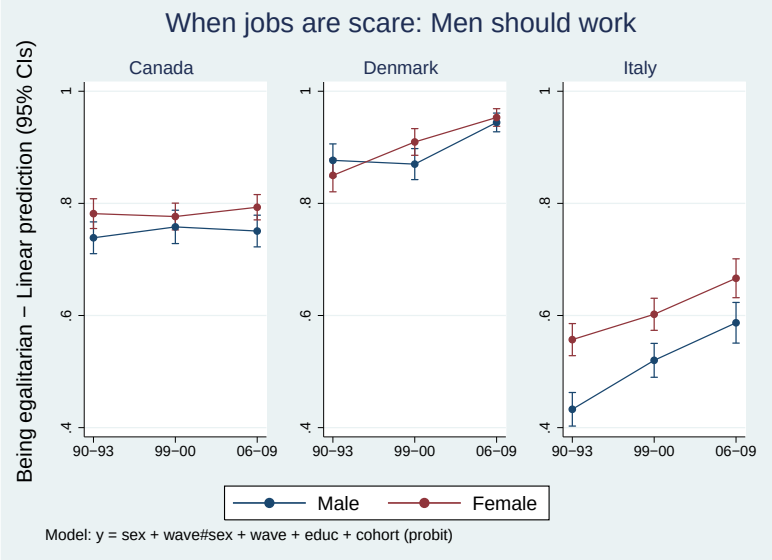

Figure 2: Predicted probabilities of being egalitarian by gender

groups. In Denmark, the educational gap is much smaller than in the other two countries. The three educational groups are converging but while the top and intermediate groups have reached the same level of diffusion in the last wave, the low-educated are still 5% below. As for gender gap, Italy has the largest differences between groups and across waves. Interestingly, we can observe that gender-egalitarian values are diffusing at a faster pace among the lower-educated.

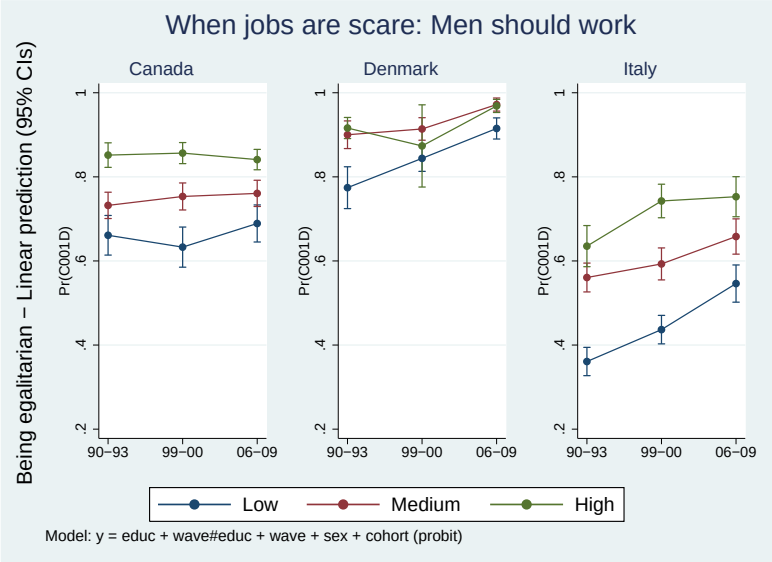

Figure 3: Predicted probabilities of being egalitarian by education

In a second step, we take our empirical analysis to the country level. First, we want to verify whether gender equality - measured as the percentage of gender egalitarian respondents - is positively correlated to fertility. In figure 4, we simply show the cross-country correlation between the % of egalitarian respondents and the country's tfr, separately for the three different waves. We find that in the early nineties, there is no correlation between gender equality and fertility, whereas in the early- and late-2000 we find a positive and significant correlation between the two variables, more precisely, of 0.51 in the second wave and 0.66 in the third

wave. The lack of correlation between the gender equality and fertility in the first wave is mainly driven by ex-Soviet countries, which hadn't fully experience fertility decline yet. In a way, it shows that gender equality matters for fertility only work and motherhood reconciliation becomes an issue for women. Also, by comparing the three cross-sections, we can make two observations. First, we can identify the different fertility trends: as found by Myrskylä et al. (2009) Anglo-Saxon and Nordic countries experience an increase in fertility between the years 2000 and 2010, the Mediteranean and continental countries with the exception of France remains at fairly low-levels of TFR, while starting from the nineties the ex-Soviet countries experience a sudden drop in their fertility rates. Second, we observe that all countries shift to the right on the x-scale, meaning that there is a general shift in values towards gender equality.

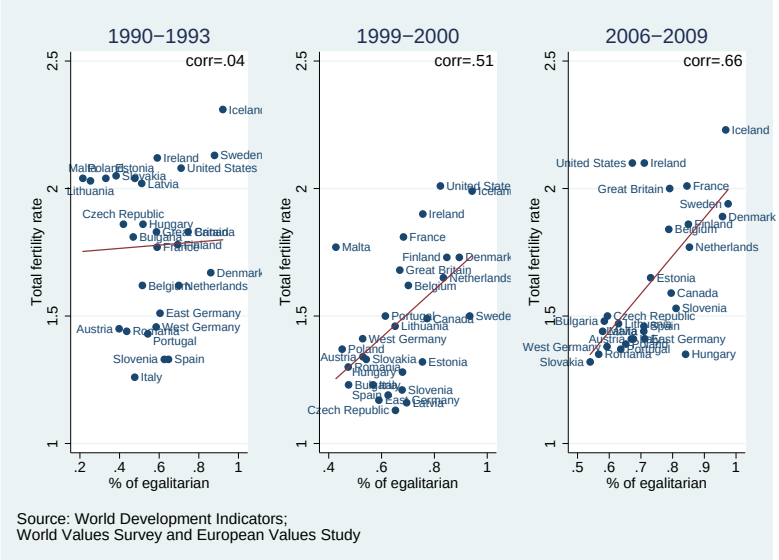

Figure 4: TFR vs. % of egalitarian respondents by wave

Now that we have established that there is a significant and positive relationship between gender equality and fertility in the last two waves of survey, we would like to explore whether differences within countries are also related to fertility. The average level of gender equality may hide different underlying distributions of gender equality within the population, for instance, between men and women but also between education groups. As a preliminary step towards answering this question, we construct for each country and each wave a relative gender gap and a relative educational gap, in the following way:

$$\text{Relative gender gap}_{c,w} = \frac{\%\text{ egalitarian women} - \%\text{ egalitarian men}}{\%\text{ egalitarian men}}$$

$$\text{Relative education gap}_{c,w} = \frac{\%\text{ egalitarian - high education} - \%\text{ egalitarian - low education}}{\%\text{ - low education}}$$

$$\text{where } c = country \text{ and } w = wave$$

In figures 5-6-7, we plot the cross-country correlation between, on the left, relative gender gap and TFR, and on the right, relative education gap and TFR. The three different cross-sections are plotted separately: figure 5 represents the first wave of 1990-1993, figure 6 for the second wave of 1999-2000 and figure 7 for the last wave of 2006-2009. As for the level of gender equality, we do not find any strong relationship between the gender or education gap and TFR in the first wave of the sample. In the second wave, we observe a strong negative correlation of -0.43 between the gender gap and TFR whereas the negative relationship between the education gap and TFR is much weaker with a coefficient of -0.18. In the last wave, both the gender and the education gaps are negatively correlated with TFR. These preliminary and descriptive results suggest that when the diffusion process of gender equality is not shared among sub-groups of the population, it is negatively associated with fertility.

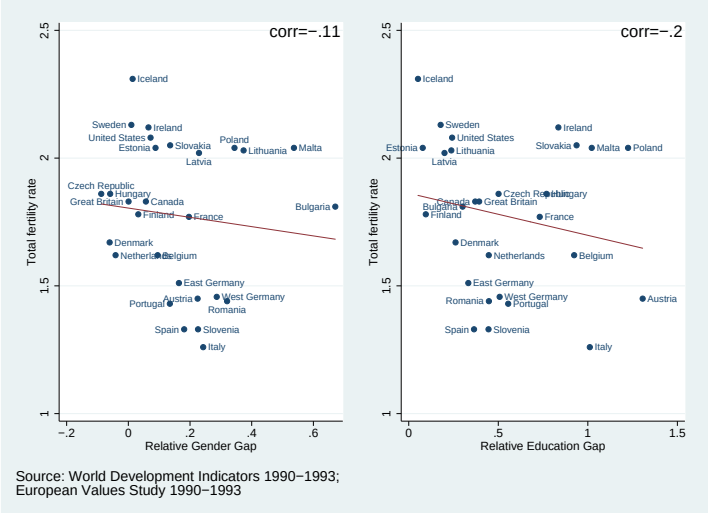

Figure 5: TFR vs. the gender and education gaps for wave 1990-1993

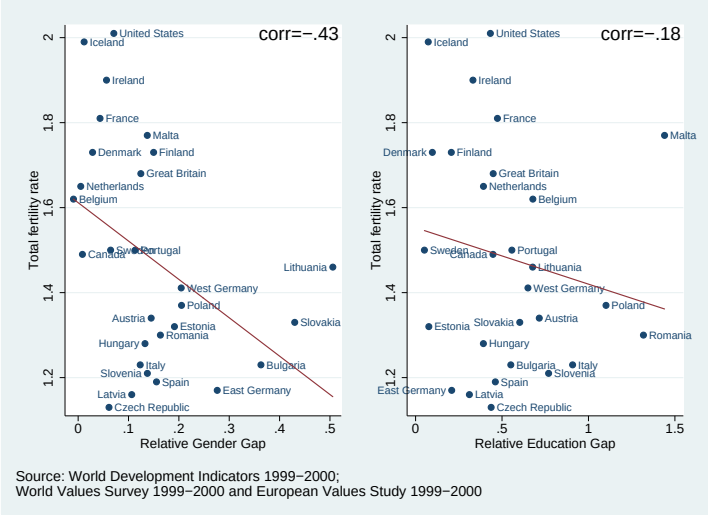

Figure 6: TFR vs. the gender and education gaps for wave 1999-2000

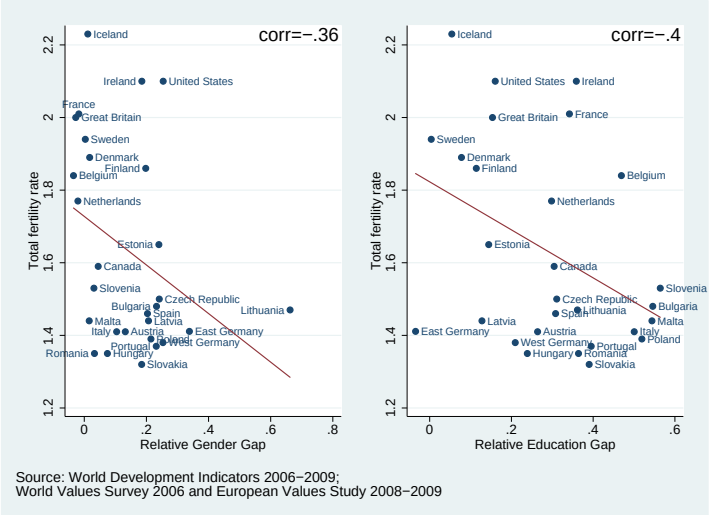

Figure 7: TFR vs. the gender and education gaps for wave 2006-2009

4 Next steps

Our results are highly preliminary. However, we do find empirical support for our hypotheses - namely, that both the level of gender equality and its diffusion within society matters for fertility. Our empirical analysis needs to be further developed and our current results clearly present some shortcomings. In order to improve our analysis, we intend to use the predicted values presented in the first part of the empirical analysis to calculate the relative gender and education gaps. Doing so, we will be able to obtain a "cleaner" measure of the gender gap because we can control for cohort and educational effects. The same will be applied to the education gap for which we can control for cohort and gender effects. A second step would be took look at the interaction of the gender and the educational gaps. We are also interested in understanding whether within the same gender, the diffusion process of gender egalitarian values is converging or diverging and how this relates to fertility.

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