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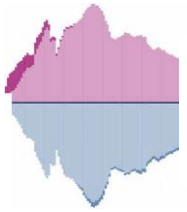

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Fertility Is Low When There Is No Societal Agreement on a Specific Gender Role Model

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Abstract:

Many authors argue that societal fertility levels are a function of changing gender relations, but the mechanism behind this association remains unclear and mainly untested. This paper argues that the variation in realized gender roles and gender role attitudes influences fertility: a great variation in attitudes among potential partners causes uncertainty and conflicts, which decreases people's propensity to choose to have a first or an additional child. How this idea is tested: macro-level regressions are run on 24 countries. A measure for the average gender role attitude as well as the dispersion in attitudes are regressed on the level of fertility. Attitudes are computed through factor analysis and capture opinions towards the gendered division of given tasks and privileges, such as childrearing or the uptake of parental leave. The measure includes attitudes towards different female and male roles. The dispersion in attitudes is the standard deviation of the factor variable in the given country. Attitudinal information are from the ISSP 2012. The analysis gives support to the hypothesis: the greater the variation in gender role attitudes, the lower is the fertility. The association is considerably strong, significant, and holds against various robustness checks.

1 Introduction

Many developed countries, like Germany, Italy or Poland experience fertility levels well below replacement level. These countries face huge structural challenges: less and less people in working age are to care for more and more elderly. When looking at some other countries it becomes obvious that very low fertility is no inevitable fate for advanced societies: In the United States, Norway or France recent cohorts have just above two children on average (Sobotka et al., 2015). While for some countries like Portugal or Poland fertility rates keep on declining, relevant recoveries are found for a number of developed countries, such as Denmark, the United States, Netherlands or Germany (Schmertmann, Zagheni, Goldstein, & Myrskylä, 2014; see also Myrskylä, Kohler, & Billari, 2009; Myrskylä, Goldstein, & Cheng, 2013; Luci-Greulich & Thévenon, 2014). How can it be explained that there are re-increases in fertility in some countries but not in others?

Many researchers interpret fertility patterns as a function of societal gender relations: once gender relations moved away from the male breadwinner model, fertility decreased. That is to say, more gender equality meant less fertility. Once a certain threshold is surpassed, the gender equity-fertility nexus changes its direction: more gender equality or gender equity means more fertility. (e.g. McDonald, 2000b, 2000a; Esping-Andersen, 2009; Esping-Andersen & Billari, 2015; Goldscheider, Bernhardt, & Lappegård, 2015).

While these authors provide important contributions to the formulation of broad theoretical frameworks that link changing gender roles with changes in demographic behaviour, there is little empirical evidence. The existing studies on that topic, e.g. Arpino, Esping-Andersen, and Pessin (2015) or Myrskylä, Kohler, and Billari (2011) are able to show that higher gender equality or more gender equitable attitudes are associated with rising fertility, but do not trace the mechanism that links the two.

Based on the theoretical work by Esping-Andersen and Billari (2015) this paper argues that the degree of societal *variation* in realized gender roles and gender role attitudes explains the link between gender relations and the level of fertility. A great variation in attitudes among potential partners causes uncertainty and conflicts, which decreases people's propensity to choose parenthood (again).

The hypothesis is tested using the Family and Changing Gender Roles IV-module from the ISSP 2012 (International Social Survey Programme) for 24 countries. Gender role attitudes are measured using factor analysis and describe the opinion, how given tasks or privileges, such as childcare or uptake of parental leave, should be distributed be-

tween the genders.

The paper is structured as follows: section 2 provides the background for this paper. Section 3 develops the hypothesis. Section 4 presents the data source and the applied methods; results are shown in section 5. Section 6 briefly presents some more elaborate models that try to distinguish between the variation in attitudes among potential partners and within the society as a whole. Further robustness checks are provided in section 7 and section 8 concludes.

2 Fertility and Gender Relations

Two major theories lay the foundation for most empirical research on fertility in the social sciences. The first is the New Home Economics, the micro-economic approach from Gary Becker (1960, 1981), who analyses fertility decisions as a trade-off between costs and benefits. The other is the Second Demographic Transition from Ron Lesthaege and others, who interpret changes in fertility behaviour as a consequence of a larger process of ideational change, related to the idea of post-modernism (Inglehart, 1990; Lesthaeghe, 1995; Van de Kaa, 2001; Lesthaeghe, 2014). Both theories predict that fertility decreases as countries experience social and economic development. As mentioned, the fertility patterns in a number of highly developed western countries (e.g. USA, Sweden, France or Netherlands) contradict these predictions. Different theories are proposed to explain these recent patterns: McDonald (2000b, 2000a), Esping-Andersen (2009), Esping-Andersen and Billari (2015), Goldscheider et al. (2015) and others explain changes in fertility with the transition from a gender-asymmetric towards a gender-symmetric society.[1] For a recent discussion of these arguments from an American perspective see Cherlin (2016).

McDonald (2000b, 2000a) theorizes that low fertility occurs when individual-level institutions, for example in the educational system and the labour market, do adapt to the 'new role of women' and provide similar or equal opportunities for women as for men while other family-related institutions, namely the family itself, are still organized in a 'traditional' way. Fertility will recover once all institutions adopt the new gender roles and become coherent again McDonald (2000a).

[1] To describe the male-breadwinner and the dual-earner gender roles various different terms are used: gender-asymmetric, traditional, old or unequal versus gender-symmetric, new, modern, gender-equal or gender-equitable. Especially the term 'gender-equitable' could be misleading though as different societies and societies at different times might regard different gender roles as equitable (compare McDonald, 2013).

Goldscheider et al. (2015) interpret changing gender relations as a gender revolution in two halves. The first part consists of a change in women's roles: they gain ground in the public sphere, such as the educational system and the labour market. As women continue to do most or even all of the unpaid work in the home, they face difficulties to reconcile work and family. The gender division in which women face the double burden of housework and work for pay is widely considered unequitable. The family as such is weakened during the first half of the gender revolution and fertility levels decrease. In the second half of the revolution men's roles change: they take an active role in the home. Men show growing engagement in childcare, uptake of parental leave and housework. These changes or adaptations help both parents reconcile work and family, which strengthens the family as such and translates into higher fertility.

Esping-Andersen and Billari (2015) present a theory which interprets a U-shaped evolution of fertility levels depending on the spreading of gender-symmetric norms and attitudes. They take a multiple equilibrium framework and state that "Societies [...] move from a stable equilibrium concerning gender roles (male breadwinner and female homemaker) through a prolonged period of uncertainty and normative confusion" towards a new and stable equilibrium which is centred on more gender-symmetric norms and the dual-career family model (Esping-Andersen & Billari, 2015, p.6). These stable equilibria are situations in which most members of the society share the same ideals about gender roles.

The arguments from McDonald (2000b, 2000a), Goldscheider et al. (2015) and Esping-Andersen and Billari (2015) share many common traits.[2] All state that Western post World War II societies are inevitably moving from a stable societal arrangement around the male breadwinner model towards the gender equity model. Nevertheless, as all three focus on different aspects (while also discussing and including the focus of the each other), they bring along different implicit or explicit conclusions. In order for fertility to recover, all emphasize the need of vast societal change. According to McDonald (2000b, 2000a) fertility will recover once all institutions, such as the tax system, childcare facilities or the family as such, adapt to women's new roles. Following Goldscheider et al. (2015) fertility will increase once men assume their new roles as equals in the household. According to Esping-Andersen and Billari (2015), fertility will begin to recover once the 'normative confusion' is decreasing, that is to say:

[2]Esping-Andersen and Billari (2015) refer to previous work by Peter McDonald several times and also stress the importance of policy. Goldscheider et al. (2015) name an argument that is very similar to (Esping-Andersen & Billari, 2015), namely that the first half of the gender revolution "created considerable confusion about what men and women expect from each other" (p.211), yet they only refer to Esping-Andersen and Billari (2015) in a subordinate clause and on a different argument.

once there is a new societal *agreement* on what constitutes proper gender- and family roles. A number of empirical studies deal with the different aspects of the relationship between gender equity or gender equality and fertility in advanced societies.

Evidence concerning the fertility effect of male involvement in childcare and housework is mixed (see for example Cooke, 2004; Mills, Mencarini, Tanturri, & Begall, 2008; Craig & Siminski, 2011; Schober, 2013; Miettinen, Lainiala, & Rotkirch, 2015). Studies on the effect of social policies that promote gender equality, such as the provision of childcare, often interpret a positive effect even though many of these studies face difficulties, for example concerning endogeneity, reversed causality, the isolation of different policy measures or the distinction between timing and quantum changes in fertility (see for example Neyer, 2003; McDonald, 2006; Gauthier, 2007; Rindfuss, Guilkey, Morgan, Kravdal, & Guzzo, 2007; Baizán, 2009; Klüsener, Neels, & Kreyenfeld, 2013; Luci-Greulich & Thévenon, 2013; Bauernschuster, Hener, & Rainer, 2015). For a general overview of determinants of fertility, see (Balbo, Billari, & Mills, 2013).

Myrskylä et al. (2011) argue that gender equality is a necessary condition for the development-fertility relationship to become positive. They operationalize gender equality by using the World Economic Forum's Global Gender Gap (GGG) index as a summary measure for countries and find support for their hypothesis.

The probably most relevant empirical point of reference for the here presented study is by Arpino et al. (2015), who analyse changes in fertility as societies move from traditional towards new gender roles. They show that at first TFR (total fertility rate) decreases as societies become more gender equitable, but once a certain threshold is reached, the relationship turns positive. They also state that this relationship is moderated by the differences in attitudes between men and women: the changes happen faster and more pronounced when the agreement between the genders is greater. As I argue, it is not (only) the gap between men and women that matters, but the level of agreement within the group of peers and especially within the group of *potential partners*. Building upon the work by Arpino et al. (2015), the here presented work offers three main innovations. First, Arpino et al. (2015) measure gender role attitudes as attitudes towards female employment alone. My analysis uses a measure that is more sophisticated and argued to capture people's gender ideology in a more integral and unambiguous fashion, namely as the attitudes towards the gendered division of different given tasks and privileges, such as childcare, uptake of parental leave and working for pay. Second, Arpino et al. (2015) apply TFR (total fertility rate) as a

measure for fertility. When it is the goal to compare fertility levels over space and time, this measure is problematic as it is highly influenced by changes in the timing of fertility (see for example Bongaarts & Sobotka, 2012). As their robustness checks show (shown in their online supplementary material), much of the discussed effect is due to tempo distortions.[3] Third, the here presented work specifies and tests, by which *mechanism* societal gender roles are linked to fertility levels.

3 The Variation in Gender Role Attitudes and Fertility: The Mechanism

In the above described model by Esping-Andersen and Billari (2015) the transition from one equilibrium to another is *not* expected to proceed in a 'uniform' way in which each successive cohort moves uniformly and step by step towards the new equilibrium. Rather it can be expected that the transition causes ruptures: some members of the society adhere to the new gender roles while others adhere to the old ones. It is an implication of this model that there is more *variation* in gender roles in the state between the equilibria than when one of the two equilibria is stable. This plurality of gender roles is said to produce normative confusion: there are no clear gender roles which have a strong normative pull and give members of the society (or a societal group) a guideline on what constitutes 'good', socially desired and simply *normal* gender roles. I argue that this normative confusion is a relevant explanation for very low fertility levels.

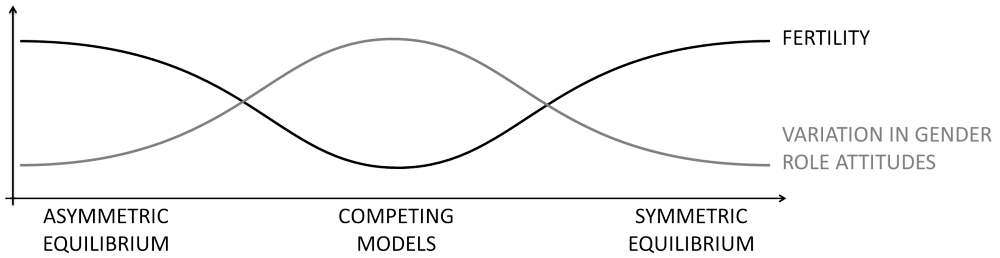

Figure 1: Schematic visualization of the association between changing gender roles, the variation in gender role attitudes and fertility. Own illustration.

[3]To capture the tempo-distortion at least roughly, they control for changes in mean age at birth. These control decrease effect sizes by roughly one third; results that were significant at the 0.1%-level are only so at the 5%-level then. Whether a more integral control for tempo-distortions would change the results further can only be guessed.

The following mechanism links normative confusion to couple formation and fertility decisions: most men and women are assumed to have a preference for living in a stable relationship and for having children. The utility they derive from couple and family formation is yet reduced when there are role conflicts. Such conflicts emerge when both partners have different opinions on the proper behaviour of a male and a female partner, of a mother and a father. Consider the two examples of couples with different gender ideologies: (I) the woman has a more symmetric gender-ideology than the man. The man expects his partner to do most of the housework and childcare while the woman wants her partner to contribute (close to) equally. (II) The man has a more symmetric gender-ideology than the woman. In this case the man expects his partner to contribute much to the family income, while the woman expects her partner to earn the lion's share of the money. The father wants to involve equally in parenting while the mother wants to be the main decision-maker in child-rearing. In both cases these attitudinal differences are a burden to the couple. The gap between different gender role models is expected to be especially salient when a couple has young children: who will – if at all – stop working for pay and for how long? There is much time of childcare and housework to share between the partners and the couple needs to agree on which partner stops working for pay for how long.

It could be assumed that someone's gender ideology is – just like any other character trait – something that is partly known a priori and will partly only show once certain situations arise (e.g. a woman does not have certainty on whether her partner will regularly engage in household maintenance or childcare until the couple cohabits and has a child). In fact the same might apply to one's own gender ideology: before ever experiencing cohabitation and having a child: can I be so certain about which tasks I will do and which tasks I eventually expect my partner to do? This implies that any succession to a new stage of the partnership (partnership formation as such, cohabitation, marriage, transition to parenthood, having additional children) brings along the risk of a 'bad surprise': the assumption that the partner has the same or a compatible idea on gender roles is disappointed and proves to be wrong. Whenever such a 'bad surprise' is experienced, be it in the stage of dating, cohabiting or after a first child, the chance of taking the next step is diminished. The risk of such a disappointment is argued to be the higher, the bigger the variation of gender role attitudes is within the group of *potential partners*. People anticipate the possibility that role conflicts might emerge after the birth of children, as many have experienced role conflicts in earlier steps of the relationships, in former relationships, or seen them among

peer couples. The greater the fear of important conflicts, the lower the propensity to take risk.
If the elaborated mechanism is in fact at work, societies in which people have a higher agreement on gender-roles should systematically have higher levels of fertility than societies in which people show very different attitudes towards gender-roles. This effect should persist independently of the exact content of the gender norm.

4 Data & Methods

To identify and measure gender role attitudes, factor analysis is run on a battery of items from the Family and Changing Gender Roles IV-module from the ISSP 2012 (International Social Survey Programme). The sample is confined to societies that match three criteria: (i) they are relatively highly developed in social and economic terms, (ii) partnership developments follow a process of step-by-step choices that typically stretch from meeting to dating to cohabitation/marriage to having a first child and mainly also to having additional children and (iii) all these decisions are the free choices of the two partners. Thus the sub-sample includes all countries for which attitudinal variables as well as a measure for cohort fertility are available, except for Turkey and the three East Asian countries, Taiwan, Japan and South Korea. No predictions are made for these countries as patterns of partnership formation and fertility seem crucially different from those in the other countries. As an example, the fertility-marriage nexus is much stronger in all four countries. In East-Asia fertility decisions are argued to be embedded in a choice for or against the "marriage package", mingling decisions concerning fertility, cohabitation, co-residence with parents-in-law and female labour force participation. In Turkey, even among younger cohorts, more than every third marriage is arranged (Nauck & Klaus, 2005; Araştırması, 2006). Also, Turkey has a lower level of social and economic development than all other analysed countries, as measured by the Human Development Index (UNdata, 2013). For a list of the countries in the analysis see table 7 in the appendix.
Fertility is measured as completed cohort fertility for women born around 1972, the latest cohort for which reliable data are available. Data for are drawn from Sobotka et al. (2015) for all countries except for Canada, Australia and the USA (Schmertmann et al., 2014) as well as Israel (Okun, 2013). Cohort fertility is used because working period fertility measures such as TFR (total fertility rate) are strongly driven by changes in birth timing. This makes cross-country comparisons problematic and might

leave to biased results and false conclusions (compare Bongaarts & Sobotka, 2012). The sub-sample of the attitudinal data from ISSP is restricted to men and women that correspond to the respective birth cohort. For the sample not to become too small to generate reliable estimates, women are analysed who are born up to twelve years before or after 1972 (birth year ranging from 1960 to 1984). Men are chosen to be three years older on average (birth year from 1957 to 1981), as in most societies the male partner tends to be older than the female partner (compare Klein, 1996). Using a smaller age range might produce more coherent results while it reduces the sample size per country, reducing the reliability of estimated values. In the applied compromise 8,616 observations are non-missing for all analysed items. Observations per country range from 129 (Canada) and 215 (United Kingdom) to 682 (Czech Republic).
This analysis remains cross-sectional for two reasons: (i) only very few countries are covered in all three ISSP-waves that include items on gender role attitudes, and (ii) older ISSP-waves do not feature two attitudinal items which are central to measure gender ideology in an unambiguous way, as argued below.

Measuring Gender Role Attitudes and the Variation in Gender Role Attitudes

Finding a measure for gender role attitudes that allows cross-country comparison is difficult (compare Beere, King, Beere, & King, 1984; Braun, 2008; Scott & Braun, 2009; Constantin & Voicu, 2014). A challenge is for example that a certain behaviour (or attitude towards such behaviour) might have different meanings in different cultural settings. For example Walby (1994) argues that the emancipatory power of female employment differs depending on the societal context. In some societies working might enable women to achieve a similar status as men, in others it might not be enough, and again in others women might have an equal status even if they do not work. Constantin and Voicu (2014) assess whether the ISSP 2002 and the World Value Survey 2005 are suitable to compute variables using factor analysis that allow comparative research regarding gender role attitudes. They conclude that this approach might generally be promising, but they criticize that both data sets lack questions in which people can specify how they believe that men and women should share tasks like childcare, elderly care or family-care (Constantin & Voicu, 2014). The ISSP 2012 contains two new questions concerning the division of two tasks and privileges, child caring and take-up of parental leave, which might fill this gap - see below.

To identify latent factors that capture distinguishable aspects of gender role attitudes

iterated principal factor analyses are run. The factors are then rotated using promax rotation.[4]

The following list of mainly Likert-scaled items is used:[5]

- *warm relation*: A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.
- *child suffers*: A pre-school child is likely to suffer if his or her mother works.
- *family suffers*: All in all, family life suffers when the woman has a full-time job.
- *want home*: A job is all right, but what most women really want is a home and children.
- *housewife*: Being a housewife is just as fulfilling as working for pay.
- *both contribute*: Both the man and woman should contribute to the household income.
- *men money*: A man's job is to earn money; a woman's job is to look after the home and family.
- *work school*: Do you think that women should work outside the home full-time, part-time or not at all under the following circumstances? After the youngest child starts school.
- *work U6*: Do you think that women should work outside the home full-time, part-time or not at all under the following circumstances? When there is a child under school age.
- *leave divide*: Consider a couple who both work full-time and now have a new born child. [...] if both are in a similar work situation and are eligible for paid leave, how should this paid leave period be divided between the mother and the father?
- *care best*: Consider a family with a child under school age. What, in your opinion, is the best way for them to organise their family and work life?

The variation in gender role attitudes in a country is defined as the standard deviation of the factor variable in the given country. Section 6 presents a more sophisticated approach to measure the variation in the group of potential partners.

Country-level Regressions

The main regression models to test the principal hypothesis are country-level OLS-regressions. Robust standard errors are applied (for a discussion see appendix).

[4]The goal is to find one convincing variable that captures gender role attitudes - and it is no problem if that variable is correlated with other measures and attitudes - so promax, which does not force the different factors to be uncorrelated, is chosen here.

[5]For more information in these items and their coding see the appendix.

5 Results

Table 1 shows the results from factor analysis. All variables are (re)coded in such a way that high values represent a more 'symmetric', 'modern' or 'egalitarian' attitude. Exploratory analysis shows that generating three factors offers a result that allows a clear interpretation. The first factor is labelled *female homemaker*, the second *gender division* and the third *mother as earner*. In each case a higher value on the factor represents a more 'modern' or 'gender-symmetric' attitude (women are *not* mainly regarded as homemakers, an equal gendered division of tasks and privileges is desired and mothers labour force participation is approved). All bivariate correlations between the three generated factors are positive and range between 0.69 and 0.73 on the micro-level and 0.76 and .92 on the macro-level.[6]

Three Different Aspects of Gender Role Attitudes

Table 1: Result from Factor Analysis

	female homemaker	*gender division*	*mother as earner*
warm relation	.44		
child suffers	.77		
family suffers	.75		
want home		.50	
housewife		.32	
both contribute			.36
men money		.65	
work school			.58
work U6			.74
leave divide		.59	
care best		.51	

Note: Displayed numbers are factor loadings. Blanks represent loadings $<.3$ in absolute values.

The first factor, *female homemaker*, loads strongest on the three items that capture opinions on possible adverse consequences of working women on the quality of relationships in the family: the family as a whole suffers when the mother works full-time, a pre-school child suffers and a working mother can have less of a warm relationship with a child (*family suffers*, *child suffers* and *warm relation*). This factor is almost unrelated to items regarding the question whether mothers should work or which parent

[6]Micro-level correlations are greatest in the Nordic countries (0.72-0.77) and smallest in the eastern countries (0.62-0.67)

should involve more in childcare (*work U6*, *work school* and *leave divide, care best*). People with a low value on this factor tend to believe that a mother who stays at home is better for the family and the kids.

The second factor, labelled *gender division* loads strongest on three items that specifically ask whether a certain task or privilege should be allocated to the male partner, the female partner or to both equally. These tasks and privileges include earning money, taking parental leave and caring for young children (*men-money*, *leave divide* and *care best*). This factor also loads moderately on the questions whether women prefer homemaking and whether being a housewife is as fulfilling as working for pay (*want home* and *housewife*). This factor is unrelated to all questions regarding maternal employment and its consequences (*warm relation, child suffers, family suffers, work U6, work school*) and thus clearly distinguishes attitudes towards the *gendered* division of tasks from questions concerning the conflict between the family and the labour market. People with a high value on this factor tend to disagree with asymmetric gender-roles in which the male role is mainly to earn money while the female role is to care of the home and of the children. They seem to prefer a model in which both partners share work for pay, uptake of parental leave and childcare (more) equally.

The third factor, called *mother as earner*, loads strongest on the question whether mothers should work and whether women should contribute to the household income (*work U6*, *work school* and *both contribute*). This factor is unrelated to most questions regarding non-monetary and emotional consequences of maternal employment for the mother, the child or the family as a whole (*child suffers, family suffers, want home, housewife*). This might be interpreted in the sense that people who score high on this factor regard maternal employment more as a monetary necessity or as normality than as an act of emancipation or an improvement of the well-being of the mother, the children and the family as whole. People with a high value in this factor believe that women in general and mothers of small children specifically should work and earn money.
It seems that the second factor, *gender division*, is the most promising to measure gender role attitudes for the here presented work. All further analyses apply this factor. The 'problem' about the first and third factor, *female homemaker* and *mother as earner*, is that they mainly load on questions that deal with the role of women alone - and not in contrast to the role of men. *Gender division* on the other hand captures the desired division of given tasks or privileges between the genders as it loads strongest

on items that specifically name the male and the female part (*men money, leave divide, care best*). *Female homemaker* and *mother as earner* might mix up gender role attitudes with general opinions on how time should be divided between the family and the public sphere. Probably some of those who believe it is best for a child and the family if a mother stays at home also believe that it would be best if the father was more involved in the home more as well.

Macro-Level Regressions

Table 2: Regression Models

	(1) CFR '72	(2) CFR '72	(3) CFR '72	(4) CFR '72	(5) CFR '72
gender division *mean value*	0.0978** (3.46)	0.100** (3.96)	0.0982** (3.55)	-0.0222 (-0.34)	
standard deviation *of gender division*	-0.0870* (-2.65)	-0.116* (-2.25)	-0.0869* (-2.68)	-0.0976* (-2.76)	-0.0977** (-2.89)
square value *of gender division*		-0.0723 (-1.18)			
sex-gap *in gender division*			-0.00199 (-0.04)		
HDI 2000 *Human Dev. Index*				0.160* (2.15)	0.144** (4.68)
Constant	1.882** (33.96)	1.951** (17.85)	1.882** (33.14)	1.882** (36.19)	1.882** (37.02)
R^2	0.183	0.238	0.183	0.315	0.312
Observations	24	24	24	24	24

t statistics in parentheses
$^{+}$ $p < .1$, * $p < .05$, ** $p < .01$

Table 2 shows the main country-level regressions to test the hypothesis that fertility is systematically lower, the less societal agreement on a specific gender role model there is. This effect should persist independently of the exact content of the gender norm. To make the coefficients of the different variables comparable, all variables independent are standardized. In all models the measure for the variation in gender role attitudes is significant and negative. The higher the variation in attitudes, the lower the fertility. The size of its coefficient is almost constant in all presented models. Models one to three also suggest that there is a positive and linear association between gender-symmetric gender role attitudes and fertility. Model three adds the variable *sex-gap*, which is the gap in attitudes between men and women in the respective

country. The coefficient of main interest stays untouched: the effect of the variation in gender role attitudes on fertility is consequently not a function of attitudinal differences between women and men. Model 4 introduces the Human Development Index (HDI) as an indicator for social and economic development of a country.[7] This variable is introduced as a control because - at least in this sample - it is rather strongly correlated with one of the independent variables, gender role attitudes (r=.76; p<.001), and with the dependent variable, fertility (r=.45 p<.05). Adding to this, the fertility-development nexus is a widely discussed and studied association, theoretically and empirically (see for example Becker, 1981; Furuoka, 2009; Myrskylä et al., 2009, 2011; Harttgen & Vollmer, 2014; Luci-Greulich & Thévenon, 2014). Consequently it is important to rule out the possibility that any association between gender role attitudes and fertility is in fact a spurious correlation, driven by effects of economic and social development. Model 4 shows: once the measure for development is introduced, there is no more association between symmetric gender role attitudes and fertility. In fact, the coefficient changes its sign. Model 5 drops the insignificant variable *gender division*. This model is the most 'efficient', in the sense that it explains a considerable share of the variation in fertility with a low number of independent variables. Development is significantly and positively associated with fertility. The coefficients of the measure for the variation in gender role attitudes and of development are comparable in size.

Two examples should give a more intuitive understanding of the magnitude of the presented association (based on model 5): if Austria had as little variation in gender role attitudes as Iceland, its fertility would be predicted to be 0.41 children higher (all else being equal) - which would push it at replacement level with a cohort fertility of 2.08 (an increase of 24%). If gender role attitudes in Germany were as uniform as in the United Kingdom, fertility would be predicted to be 0.24 children higher - an increase from 1.53 to 1.77 or 16%.

6 The Variation in Gender Role Attitudes: in the Whole Society vs. Among Potential Partners

Section three described how a lack of clear societal gender roles should translate into low fertility by increasing role uncertainty and conflicts within couples. Yet, at least a

[7]The HDI - as in the calculation method for the year 2000 - includes a measure for health (life expectancy), education (literacy rate and the enrolment rate into education) and standard of living (natural logarithm of the gross domestic product per capita at purchasing power parity). HDI drawn from the United Nations (UNdata, 2013) and is measured in the year 2000 when the female respondents were 28 years old on average.

second and third mechanisms might link societal disagreement on gender roles to fertility: second, negative sanctioning among peers who pursue different gender role models and third, a translation of unclear gender norms into incoherent family policy with the consequence that no family, whatever gender role model it follows, finds policies tailored to their needs. To test whether conflicts and role uncertainty among partners and potential partners is the key, one needs to isolate the attitudinal variation among *potential partners* from the variation in the whole society. In an example: for a woman aged 35, who is a college graduate, it might be of importance what kind of gender role attitudes men between 30 and 45 with a college degree have. The gender role attitudes of men aged 25 and without formal education would be less relevant. The variation among potential partners is the variation that can *not* be explained by character traits that typically shape dating behaviour. Among these variables are sex, age, education, religiosity, ethnicity or place of residence (see for example Schwartz, 2013; Blossfeld, 2009). In other, more technical, words: the variation among potential partners is the variation that cannot be explained by micro-level regressions that regress sex, age etc. on gender role attitudes. For more information on the calculation of this measure, see the appendix. Three different measures are proposed here: *unexplained variation I*, which applies micro-level regressions with the variables sex, age, education (with interaction effects and higher order terms), *unexplained variation II*, which adds religiosity, and *unexplained variation III*, which adds ethnicity. Especially the last measure suffers from missing data problems and different definitions of ethnicity in the different countries. Other information of relevance, like the place of residence, is not available in a well comparable way. Table 3 compares the standard deviation in gender role attitudes with the three additional measures. Again all variables are standardized. The hypothesis is that *standard deviation* has the lowest and *unexplained variation III* the greatest explanatory power. If, on the opposite, the policy- or peer-mechanism is at work, the *unexplained*-variables should be less significant. Results offer no clear picture.

7 Further Robustness Checks and Sensitivity Analyses

To check whether the results are robust I control for a number additional potential confounders, run sensitivity analyses by excluding an outlier and change the age range for the attitudinal information. The added variables in models 10 to 15 are four com-

Table 3: Regression Models: Robustness Checks

	(6) CFR '72	(7) CFR '72	(8) CFR '72	(9) CFR '72
HDI 2000	0.144**	0.133**	0.128**	0.123**
Human Dev. Index	(4.68)	(4.56)	(4.49)	(4.49)
standard deviation	-0.0977**			
of gender division	(-2.89)			
unexplained variation I		-0.0854*		
in gender division		(-2.55)		
unexplained variation II			-0.0915*	
in gender division			(-2.42)	
unexplained variation III				-0.0945*
in gender division				(-2.34)
Constant	1.882**	1.882**	1.882**	1.882**
	(37.02)	(36.37)	(36.71)	(36.88)
R^2	0.312	0.287	0.301	0.307
Observations	24	24	24	24

t statistics in parentheses
$^{+}$ $p < .1$, * $p < .05$, ** $p < .01$

Table 4: Robustness Checks: Macro-Level Gender Equity Indices

	(10) CFR '72	(11) CFR '72	(12) CFR '72	(13) CFR '72	(14) CFR '72	(15) CFR '72
standard deviation	-0.0977**	-0.120*	-0.0949**	-0.113*	-0.0986*	-0.182*
of gender division	(-2.89)	(-2.42)	(-2.90)	(-2.67)	(-2.56)	(-2.43)
HDI 2000	0.147**	0.186*	0.246	0.163**	0.236	0.249**
Human Development	(4.69)	(2.82)	(0.98)	(3.40)	(1.71)	(2.99)
GGG 2006		-0.0728				
Global Gender Gap		(-1.02)				
GDI 2000			-0.102			
Gender-related Dev.			(-0.43)			
GEI 2007				-0.0504		
Gender Equity				(-0.92)		
GEM 2000					-0.106	
Gender Empowerment					(-0.76)	
FLP 2000						-0.0237
Female Labour Force P.						(-1.52)
Constant	1.886**	1.886**	1.886**	1.886**	1.886**	3.452**
	(36.89)	(37.17)	(36.21)	(36.70)	(37.11)	(3.28)
R^2	0.318	0.360	0.326	0.343	0.358	0.494
Observations	24	24	24	24	24	24

t statistics in parentheses
$^{+}$ $p < .1$, * $p < .05$, ** $p < .01$

posed measures for gender equity and/or equality (for a discussion see Mills, 2010) and female labour force participation (sources are listed in the appendix). The coefficient *standard deviation* remains negative and significant in all models while all added variables are insignificant (all with negative coefficients). The other models are shown in the appendix. When running the models without Israel results are stable (standard deviation significant with $p<.05$) and the overall explained variance increases notably. Changing the age-range shows no relevant changes.

The proposed pattern, that fertility levels are a function of the variation in gender role attitudes, holds against all robustness checks. None of these tests decreases the significance or strength of the effect notably. Once the variation in gender role attitudes is controlled for, no other measure for gender relations, be it attitudinal, female labour force participation, or any of the composed measures, is associated with fertility.

8 Discussion

While there are several studies that deal with the interplay between gender relations and fertility in some way there is still insufficient knowledge of the mechanisms behind the observed patterns. This study contributes to filling this gap by specifying and testing a model that explains how the variation in gender role attitudes is associated with fertility. To do so, this study builds on the foundation set by Esping-Andersen and Billari (2015).

The here presented analyses show: fertility is higher when there is a greater societal agreement on a specific gender role model. The degree of variation in gender role attitudes explains a considerable share of cross-country differences in fertility. The presented results hold against a number of robustness checks. The study does not find any support for the hypothesis that it makes a difference for fertility levels which type of gender role model a society with a given level of socio-economic development agrees on. The conclusion by for example Myrskylä et al. (2011) that gender equality (as in social outcomes) is a necessary precondition for high fertility in advanced countries is not replicated in this (cross-sectional) study.

Furthermore this research shows how, in general, the variation in a variable - independently of its average value or content - matters for a social outcome.

The ISSP 2012 allows a much clearer and unambiguous way of analysing gender role attitudes than older waves of ISSP or comparable surveys do, as it is one of the few surveys that capture attitudes towards different female and male role models. In many surveys items are on female roles alone, asking for example whether women and

mothers should work, whether they prefer to work or whether their employment has negative effects on the family, but forget to ask what people think about men's roles in the family or the labour market (compare Constantin & Voicu, 2014). The ISSP 2012 (partly) closes this gap by asking how people think that take-up of parental leave and caring for young children should be distributed between the parents. This makes the ISSP 2012 the most suitable data set for this analysis.

The analysis suffers from two main shortcomings. The first is the data limitation: the sample consists of only 24 countries at one point in time. None of the older ISSP-waves featured two items (*leave divide* and *care best*) that were essential in measuring gender role attitudes, so no longitudinal design could be applied. Also there are very few countries that participated in all three relevant ISSP-waves. Also, the data on religiosity, ethnicity and place of residence etc., which might have been insightful, are partly incomparable or missing.
Second, as discussed in section 7, this analysis is unable to distinguish between the main explanation and (at least) two alternative explanations for the observed association.
Future research could go into the 'second stage' and test the here presented hypotheses on the micro-level (compare Billari, 2015). When two partners in a couple have very different and possibly incompatible (parental) gender role attitudes, they should be less likely to choose parenthood (again). Such a micro-level analysis might also be able to distinguish between the three above named explanations for the observed patterns.
All in all, this paper provides a substantive contribution to understand by which mechanisms gender relations and fertility are related in advanced societies. While in general a pluralistic society - with a variety of different gender role models and no strong normative pressure to follow a certain 'lead model' - would be desirable, this could come at the cost of low fertility. If higher levels of fertility are desired, it is upon the society and policy makers to agree a specific gender role model and to tailor policy measures around it - or to find a creative way of escaping this trade-off and reconciling a variety in gender role models with moderate fertility.

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10 Appendix

Scatterplots: Gender Role Attitudes, Variation in Gender Role Attitudes and Fertility

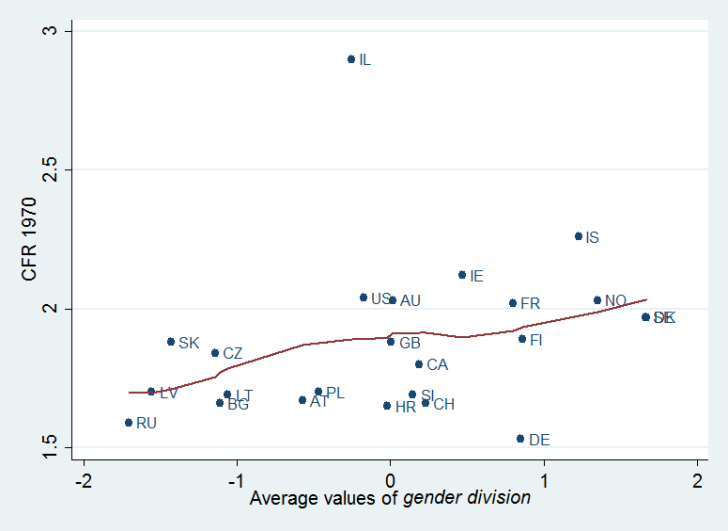

Figure 2: Fertility and mean value of the factor gender division. As neither a linear nor a quadratic fit is significant, lowess fit is displayed.

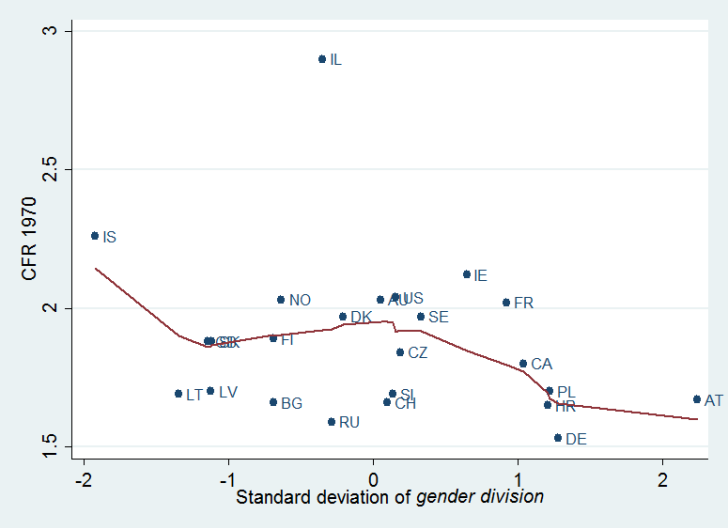

Figure 3: Cohort fertility and standard deviation of the factor gender division. As neither a linear nor a quadratic fit is significant, lowess fit is displayed.

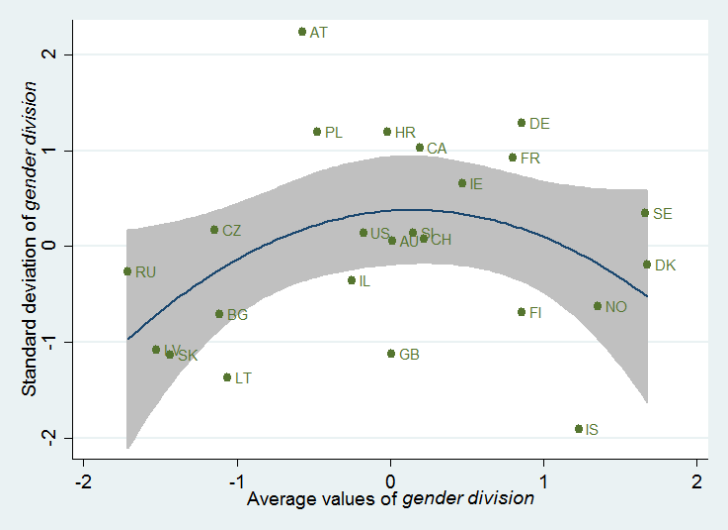

Figure 4: Standard deviation of the factor gender division. Quadratic fit is significant at the 10%-level.

Gender Role Attitudes - List of Items Used in Factor Analysis

The first seven questions allow the answers "strongly agree / agree / neither agree nor disagree / disagree / strongly disagree" which are assigned the values from 1 to 5, for the other items the choice of answers as well as its coding is indicated. All items are (re)coded in such a way that high values represent a more 'symmetric', 'modern' or 'egalitarian' attitude:

- *warm relation*: A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.
- *child suffers*: A pre-school child is likely to suffer if his or her mother works.
- *family suffers*: All in all, family life suffers when the woman has a full-time job.
- *want home*: A job is all right, but what most women really want is a home and children.
- *housewife*: Being a housewife is just as fulfilling as working for pay.
- *both contribute*: Both the man and woman should contribute to the household income.
- *men money*: A man's job is to earn money; a woman's job is to look after the home and family.
- *work U6*: Do you think that women should work outside the home full-time, part-time or not at all under the following circumstances? When there is a child under school age. [Work full-time (40) / Work part-time (20) / Stay at home (0)]
- *work school*: Do you think that women should work outside the home full-time, part-time or not at all under the following circumstances? After the youngest child starts school. [Work full-time (40) / Work part-time (20) / Stay at home (0)]

- *leave divide*: Still thinking about the same couple, if both are in a similar work situation and are eligible for paid leave, how should this paid leave period be divided between the mother and the father? [mother: entire leave (1) / mother: most of the leave; father: some (2) / both half (3) / father: most of the leave; mother: some (4) / father: entire leave (5)]

- *care best*: Consider a family with a child under school age. What, in your opinion, is the best way for them to organise their family and work life? [Mother home; father works full-time. (1) / Mother works part-time; father works full-time. (2) / Both work full-time *or* Both work part-time. (3)[8] / Father works part-time; mother works full-time. (4) / Father home; mother works full-time (5)]

Macro-Level Regressions: Choice of Standard Errors

In all regression models robust standard errors are applied. When Israel - a clear outlier in fertility - is included in the analysis regular standard errors are considerably bigger than robust ones. This is because Israel has a very high on the dependent variable (fertility) while the values for all central dependent variables are in the middle-range. This one case inflates the residuals at medium-high levels of the fitted values, which causes the regular standard errors to be overestimated (see figure 5). In models which exclude Israel, robust and regular standard errors are very similar. All models were also run using bootstrap standard errors, which yields similar results as robust standard errors. Table 5 shows the main model run with regular, robust and bootstrap (10,000 repetitions) standard errors. Robust and bootstrap standard errors are almost identical.

[8]In the original data set the two options "both work full-time" and "both work part-time" are separated. These two options are not different regarding gendered attitudes as both options indicate an equal split of paid work between the male and the female partner, but a choice of the trade-off labour market - family.

Figure 5: Residual-versus-fitted plot for main regression model, model 5.

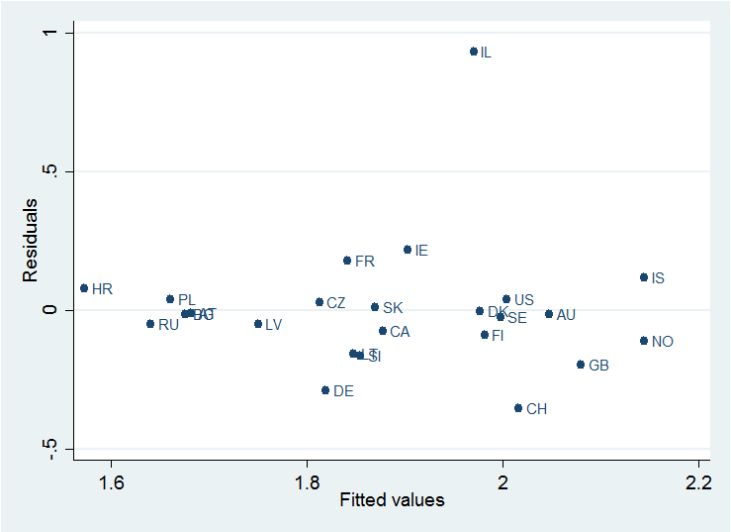

Table 5: Comparing different standard errors.

	(16) regular	17) robust	(18) bootstrap
standard deviation	-0.0977^{+}	-0.0977**	-0.0977**
of gender division	(0.0526)	(0.0338)	(0.0378)
HDI 2000	0.144*	0.144**	0.144**
Human Dev. Index	(0.0526)	(0.0307)	(0.0333)
Constant	1.882**	1.882**	1.882**
	(0.0508)	(0.0508)	(0.0511)
R^2	0.312	0.312	0.312
Observations	24	24	24

Standard errors in parentheses
$^{+}$ $p < .1$, * $p < .05$, ** $p < .01$

Control Variables and Their Sources

In the models 11 to 14 four macro-level indices for gender equity are introduced. For a discussion of these four measures in relation to fertility, see Mills (2010). For all macro-level variables data for the year 2000, when female respondents were 28 years on average, was chosen. If data for 2000 was not available, the year closest to 2000 was chosen. The Global Gender Gap Index (GGG) is drawn from (Hausmann et al., 2006) and refers to the year 2004, the first year that is available. Data for the Gender-related Development Index (GDI) and the Gender Empowerment Index (GEM) are drawn from UNDP (2002) and calculated using mainly data from 2000. Data for Bulgaria refers to the year 2003 and data for France refers to the year 2005. Female labour force Participation (FLP) is drawn from The World Bank (2016).

The Gender Equity Index (GEI) is drawn from Social Watch (2007) and refers to the

year 2007, the earliest year for which comprehensive data are available. Data for the Human Development Index (HDI) is from the United Nations (UNdata, 2013) and the GGG from Hausmann et al. (2006). GGG was published in 2006 but refers to the year 2004, the first year that is available.

Models for Further Robustness Checks

Table 6 shows the models for the further robustness checks. Models 21 to 24 show the macro-level regression models for different age-ranges on the micro-level. Models 25 and 26 are run excluding Israel. None of these models show any major changes.

Table 6: Further Robustness Checks: Different Age-Range and Excluding an Outlier

	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
	CFR '72	CFR '72	CFR '72	CFR '72	CFR '72	CFR '72	CFR '72	CFR '72
	± 12yrs	± 12yrs	± 10yrs	± 10yrs	± 14yrs	± 14yrs	Excl. Israel	Excl. Israel
standard deviation	-0.0997**	-0.0976*	-0.0892*	-0.0891*	-0.103*	-0.102*	-0.0808*	-0.0806*
of gender division	(-2.89)	(-2.73)	(-2.60)	(-2.43)	(-2.68)	(-2.61)	(-2.66)	(-2.73)
HDI 2000	0.147***	0.170*	0.153***	-0.176*	0.148***	0.168*	0.125***	0.101*
Human Dev. Index	(4.69)	(2.24)	(4.93)	(2.31)	(4.26)	(2.26)	(5.81)	(1.87)
gender division		-0.0304		-0.0312		-0.0261		0.0323
mean value		(-0.46)		(-0.46)		(-0.40)		(0.83)
constant	1.886***	1.886***	1.886***	1.886***	1.886**	1.886***	1.840***	1.839***
	(36.89)	(36.13)	(36.32)	(35.57)	(37.20)	(36.39)	(62.90)	(62.09)
R^2	0.318	0.322	0.296	0.301	0.329	0.332	0.523	0.535
N	24	24	24	24	24	24	23	23

t statistics in parentheses
$^{+}$ $p < .1$, * $p < .05$, ** $p < .01$

Model 19 & 20: replication. Number of micro-level observations: 8,616
Model 21 & 22: different age-range: +/- 10 years. Number of micro-level observations: 7,269.
Model 23 & 24: different age-range: +/- 14 years. Number of micro-level observations: 9,936.
Model 25 & 26: Excluding the outlier Israel.

Calculation of *unexplained variation I, II & III*

Unexplained variation I, II & III are attempts to capture the variation in the factor variable *gender division* that is *not* explained by individual characteristics, which typically shape partner markets. This measure is chosen for the following reason: as argued, what should mainly matter for fertility decisions is the variation in gender role attitudes among potential partners.

As mating behaviour is clearly structured by factors like age, education, religion, ethnicity or place of residence, the goal is to measure the variation in attitudes that persists, net of these factors. Take for example a society that consists of strongly

segregated sub-groups, be they segregation by education, religion, ethnicity, space or something else, and mating happens generally within these groups. If within both groups members have a strong agreement on gender roles but the content of these roles differs strongly between these two groups, there should not be much normative confusion: the potential partners (within the same group) all share similar opinions. In this case the first measure, the standard variation in the whole society, would be large, while the second measure, the variation controlling for factors that might segregate, would be small. Due to this it would be expected that the second measure is the better predictor of fertility. This measure is computed as follows: micro-level OLS-regressions are run for each country separately. The dependent variable is the factor that measures gender role attitudes, and the independent variables are the characteristics that should influence mating behaviour. The within-variation, the variation among potential partners, is the variation that is not explained by the country-level regressions: the mean squares (MS; calculated as the sum of squares (SS) divided by the respective degrees of freedom). Three sub-models were presented in section 7. The first, *unexplained variation I* includes the variables sex, age and education (plus higher order terms and interaction effects). The second measure, *unexplained variation II*, adds a measure for religiosity, the third measure *unexplained variation III* also adds a measure for ethnicity/race.

All micro-level regressions are run using stepwise-command with backward selection (significance level for removal of a variable from the model: .1). Why this method is chosen: some variables might be a relevant predictor for gender role attitudes in one country but not in another; in one country a linear fit might be best, in another country a square or cubic fit might work best. Including variables in the model that clearly have no explanatory power would be a 'waste' of degrees of freedom and would weaken the models. For this reason an algorithm is needed that allows the model specification to differ between the countries. The variable specifications that are allowed for inclusion in the regressions for the measure *unexplained variation I* are: sex, age and education (measured as years of schooling), the squared and cubic term of age and education as well as interaction terms between sex and all other variables, and an interaction between age and education. The second specification adds the level of religiosity as a dummy variable which is one if the respondent visits religious services at least once a month and zero otherwise. This variable is not available for Australia and Russia. The consequence of this is that the 'precision' of the country-level regressions is lower for these four countries than for the others, which might lead to distortions. Something similar might happen in the last model, which includes a measure for eth-

nicity, race or origin. While such a measure is clearly of theoretical importance here, the operationalization is problematic. The information on ethnicity varies strongly between the countries. Some countries provide information on the ethnic group of the respondent (e.g. Great Britain, Ireland, Russia), on whether the respondent or the respondents' parents were born in the country (e.g. France, Australia, Denmark), of which cultural group or country of origin the ancestors are (Canada, USA), whether or not the respondent belongs to a minority group (Iceland) or provide no information at all (Austria). Also in some countries (e.g. Canada) the rates of non-response in this question are close to 30%. A very simplified and dichotomous variable is generated to - at least roughly - capture ethnicity/nationality/origin: it is one if the respondent belongs to the biggest group in the country (be it people whose parents are born in the country in France or Australia, white Americans in the USA, non-minority members in Iceland, ethnic Russians in Russia or Jewish people in Israel) and zero otherwise. Figure 7 shows two examples of such micro-level regressions. Figure 6 compares how the countries 'rank' on the four different measures *standard deviation* with *unexplained variation I, II & III*. It shows that for example for Poland *standard deviation* and *unexplained variation I* differ a lot. That means that in Poland a large share of the variation in gender role attitudes are explained by sex, age and education. The opposite is the case for Czech Republic.

It would certainly be of interest to also control for the place of residence, to distinguish at least between broader regions in the country as well as rural and urban areas. The information on the place of residence differs so much between the countries that it seems impossible to compute a variable that offers a similar level of precision for all countries.

Figure 6: Comparing the measures *standard deviation* with *unexplained variation I, II & III*. All variables are standardized.

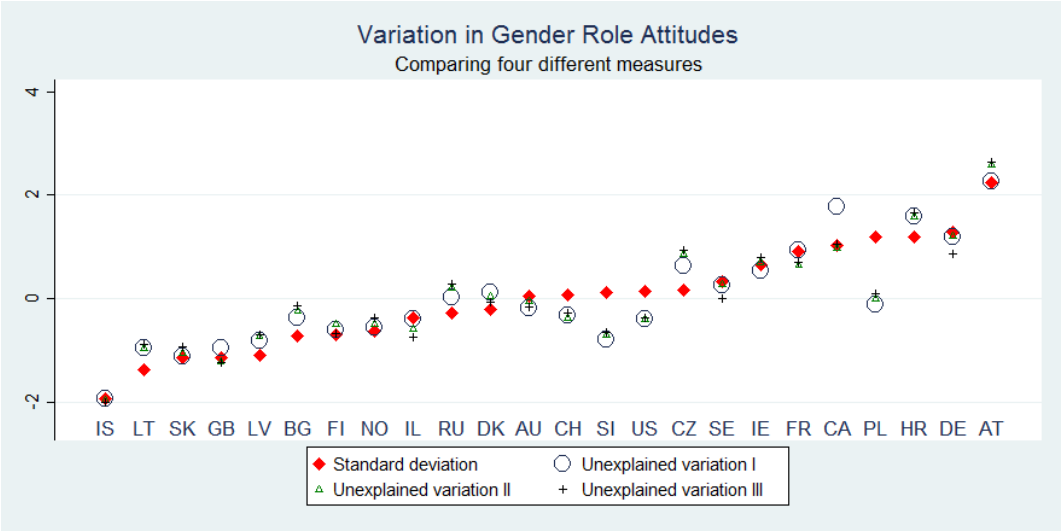

Figure 7: Micro-level regression: calculating *unexplained variation I* for Great Britain and *unexplained variation III* for Germany.; Depdent variable: factor *gender division*.

```
. * Unexplained I for GREAT BRITAIN
. xi: stepwise, pr(.1):  reg gender_division male age educyrs male_age male_educy
> rs age2 educyrs2 male_age2 male_educyrs2 age_edu  if cntry_string == "GB"
                    begin with full model
p = 0.7438 >= 0.1000  removing male
p = 0.7112 >= 0.1000  removing educyrs
p = 0.2697 >= 0.1000  removing age_edu
p = 0.2001 >= 0.1000  removing male_age2
p = 0.1772 >= 0.1000  removing age2
p = 0.1195 >= 0.1000  removing educyrs2
```

Source	SS	df	MS		
				Number of obs	= 214
				F(4, 209)	= 5.07
Model	7.97403984	4	1.99350996	Prob > F	= 0.0006
Residual	82.142086	209	.393024335	R-squared	= 0.0885
				Adj R-squared	= 0.0710
Total	90.1161259	213	.423080403	Root MSE	= .62692

Unexplained Variation I

gender_divi~n	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
male_educyrs	.1488432	.0599063	2.48	0.014	.0307451	.2669414
age	.0236234	.0083273	2.84	0.005	.0072071	.0400398
male_educyrs2	-.003836	.0022244	-1.72	0.086	-.0082211	.0005491
male_age	-.0355634	.0098966	-3.59	0.000	-.0550733	-.0160535
_cons	-.7909034	.3338851	-2.37	0.019	-1.449118	-.1326893

```
. * Unexplained III for GERMANY
. xi: stepwise, pr(.1):  reg gender_division male age educyrs male_age male_educy
> rs age2 educyrs2 male_age2 male_educyrs2 age_edu i.rel2  i.mainethn if cntry_st
> ring == "DE"
i.rel2            _Irel2_0-1          (naturally coded; _Irel2_0 omitted)
i.mainethn        _Imainethn_0-1      (naturally coded; _Imainethn_0 omitted)
                    begin with full model
p = 0.8003 >= 0.1000  removing age2
p = 0.7599 >= 0.1000  removing age_edu
p = 0.6404 >= 0.1000  removing male_educyrs2
p = 0.4025 >= 0.1000  removing male_age2
p = 0.5670 >= 0.1000  removing male
p = 0.1298 >= 0.1000  removing educyrs2
```

Source	SS	df	MS		
				Number of obs	= 427
				F(6, 420)	= 15.58
Model	49.4496087	6	8.24160144	Prob > F	= 0.0000
Residual	222.16094	420	.528954619	R-squared	= 0.1821
				Adj R-squared	= 0.1704
Total	271.610549	426	.637583448	Root MSE	= .72729

Unexplained Variation III

gender_div~n	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Irel2_1	-.3344625	.0959514	-3.49	0.001	-.5230673	-.1458578
age	.0116832	.0055496	2.11	0.036	.0007747	.0225917
educyrs	.0399576	.0133553	2.99	0.003	.0137059	.0662092
male_age	-.015113	.0049797	-3.03	0.003	-.0249013	-.0053247
male_educyrs	.0346875	.0164179	2.11	0.035	.0024161	.0669589
_Imainethn_1	.6757807	.1184515	5.71	0.000	.442949	.9086124
_cons	-.9596266	.2731369	-3.51	0.000	-1.496512	-.422741

Table 7: Overview of that data that are used in the macro-level regressions

	CFR 1972	gender division	female homemaker	mother as earner	standard deviation	gender gap	unexpl. var. I	unexpl. var. II	unexpl. var. III	HDI 2000	GGG 2006	GDI 2004	GEI 2000	GEM 2007	N
Austria	1.67	-0.57	-1.00	-1.54	2.25	0.22	2.26	2.59	2.63	0.84	0.70	0.92	0.72	0.75	377
Australia	2.03	0.01	-0.24	-1.20	0.06	0.37	-0.18	-0.04	-0.16	0.90	0.72	0.96	0.76	0.76	280
Bulgaria	1.66	-1.12	-1.17	-0.36	-0.71	0.09	-0.36	-0.23	-0.13	0.71	0.69	0.78	0.74	0.60	266
Canada	1.8	0.19	0.21	-0.50	1.03	0.04	1.77	0.98	1.06	0.87	0.72	0.94	0.75	0.78	124
Switzerland	1.66	0.22	-0.43	-0.61	0.08	0.09	-0.33	-0.37	-0.26	0.89	0.70	0.92	0.67	0.72	438
Czech Republic	1.84	-1.14	-0.26	-0.59	0.18	0.08	0.64	0.87	0.95	0.81	0.67	0.85	0.69	0.56	663
Germany	1.53	0.86	0.73	0.26	1.29	0.20	1.19	1.22	0.88	0.85	0.75	0.92	0.80	0.77	427
Denmark	1.97	1.68	2.04	1.96	-0.19	0.03	0.12	0.05	-0.06	0.86	0.75	0.93	0.79	0.82	349
Finland	1.89	0.86	1.43	1.05	-0.69	0.21	-0.60	-0.49	-0.66	0.84	0.80	0.93	0.84	0.80	259
France	2.02	0.80	0.37	0.21	0.92	0.15	0.95	0.65	0.71	0.85	0.65	0.93	0.64	0.72	597
United Kingdom	1.88	0.01	0.12	-0.68	-1.13	0.20	-0.95	-1.22	-1.23	0.86	0.74	0.93	0.74	0.68	214
Croatia	1.65	-0.02	-0.01	0.57	1.20	0.08	1.59	1.60	1.66	0.75	0.71	0.81	0.73	0.53	402
Ireland	2.12	0.47	0.22	-0.36	0.66	0.09	0.54	0.71	0.79	0.86	0.73	0.92	0.69	0.68	301
Israel	2.9	-0.25	-0.87	0.25	-0.36	0.07	-0.39	-0.58	-0.73	0.85	0.69	0.89	0.73	0.60	351
Iceland	2.26	1.23	1.38	1.52	-1.91	0.21	-1.92	-1.95	-1.99	0.86	0.78	0.93	0.79	0.83	356
Lithuania	1.69	-1.06	-1.13	-0.84	-1.37	0.10	-0.95	-0.96	-0.87	0.76	0.71	0.81	0.77	0.48	323
Latvia	1.7	-1.52	-1.64	-1.24	-1.09	-0.02	-0.80	-0.72	-0.69	0.73	0.71	0.80	0.76	0.54	389
Norway	2.03	1.36	1.11	1.36	-0.63	0.19	-0.54	-0.48	-0.37	0.91	0.80	0.94	0.83	0.84	390
Poland	1.7	-0.47	-0.33	-0.81	1.19	0.24	-0.11	-0.01	0.09	0.78	0.68	0.83	0.72	0.59	345
Russian Federation	1.59	-1.71	-1.58	-1.00	-0.27	0.17	0.04	0.20	0.29	0.72	0.68	0.78	0.71	0.45	480
Sweden	1.97	1.66	1.59	1.61	0.35	0.25	0.27	0.29	0.01	0.89	0.81	0.94	0.89	0.82	227
Slovenia	1.69	0.15	0.24	1.17	0.14	0.21	-0.77	-0.69	-0.65	0.82	0.67	0.88	0.72	0.58	283
Slovak Republic	1.88	-1.44	-0.44	-0.08	-1.13	0.21	-1.10	-1.05	-0.93	0.78	0.68	0.83	0.70	0.55	384
United States	2.13	-0.18	-0.33	-0.14	0.14	0.27	-0.39	-0.39	-0.35	0.88	0.70	0.94	0.74	0.76	302

Note: these figures apply for all models except model 17 to 20, which use a different sub-sample.
The variables gender division, female homemaker, mother as earner, standard deviation and unexplained variation I, II & III are standardized (mean = 0; variance = 1).