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Divorce Trends and Changing Gender Norms in the United States: A Micro-Macro Approach

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Abstract: This article studies the relationship between changes in gender norms and divorce risk. The main argument builds on the idea that shifts towards gender-egalitarian norms create competing incentives for how spouses invest in home-specific and market capital. I test this theoretical argument with evidence from the United States in the period between 1968 and 2011. I combine marital histories from the Panel Survey of Income Dynamics with a regional and time-varying measure of gender norms from the General Social Survey. The empirical results suggest that the shift from traditional to egalitarian norms predicts two diverging partnership outcomes. First, when a large share of society has embraced egalitarian norms, advances towards gender normative equality are associated to a decreasing risk of divorce. Second, the selectivity of marriage increases as gender norms become more egalitarian.

Taking as a benchmark the 1950s, demographic trends across industrialized countries until the end of the nineties increasingly suggested the end of the family as we traditionally know it. As predicted by Becker, women's redefined gender roles came along with a withdrawal from marriage, a decline in fertility and an increase in marital instability. Unexpectedly so, fertility trends in the late 2000s in almost all industrialized countries have stopped declining and may even be climbing again (Goldstein et al. 2009, Myrskylä, Kohler and Billari 2009). To the surprise of most demographers, in several European countries divorce rates have reached a plateau (Härkönen 2014). In the United States, the forerunner country in marital instability, divorce rates not only stabilized in the late seventies but they also appear to have declined since then (Goldstein 1999, Raley and Bumpass 2003, Cherlin 2010). Adding to the empirical puzzle, this "return of the family", as labeled by Esping-Andersen and Billari (2015), started in the vanguard countries in terms of women's emancipation.

Several studies have pointed to the importance of gender norms in explaining changes in recent demographic behaviors (Esping-Andersen 2009, Esping-Andersen and Billari 2015). According to this line of research, lowest-low fertility rates and heightened marital instability are the consequences of the discrepancy between women's empowerment in higher education and the labor market and social expectations about gender roles. For instance, Sevilla-Sanz (2010) finds a positive effect of egalitarian gender norms on household formation. Also, Aassve, Billari and Pessin (2012) show that as female tertiary education increases, high contextual levels of generalized trust moderate fertility decline. Arpino, Esping-Andersen and Pessin (2015) find a U-shape relationship between the changes in the prevalence of egalitarian gender roles towards female employment and fertility trends across industrialized countries.

One underlying hypothesis behind the relationship between gender norms and fertility trends is that it is also supported by changes in marital stability. However, the mechanisms that link changes in social expectations about gender roles to couples' marital stability are yet to be developed. Building upon on Akerlof and Kranton's identity model (2000), and its application to household formation behavior by Sevilla-Sanz (2010), I argue that gender norms affect marital stability by changing the gendered social expectations regarding spouses' investment in household and market capital. More specifically, I expect that changes in gender norms will have direct and indirect effects on divorce. First, the shift from traditional to egalitarian contexts modifies the social costs and incentives of labor market and home production investments for men

and women within household. Second, gender norms also indirectly affects marital stability by changing how individuals select themselves into marriage, and thus also transforms the composition of the married population.

The objective of this article is to provide a better understanding of the role played by changes in contextual gender norms and divorce risk at the couple level. The empirical approach focuses on a single country, the United States, but spans a much longer time period than previous studies, 1970s-2010s. Marital histories from the years 1968-2011 of the Panel Survey of Income Dynamics (PSID) are combined with a time-varying regional gender index derived from the 1972-2012 General Social Surveys. The empirical analysis is made of two parts. First, I test the relationship between the prevalence of gender-egalitarian norms and divorce risk at the couple-level. Second, I explore how the selectivity of marriage changes as gender norms become more egalitarian.

This research makes several important contributions to the existing literature on changing demographic behaviors by (1) combining fifty years of gender attitudes with longitudinal marital data rather than making cross-country comparisons over a short period of time, (2) testing competing theoretical hypotheses on the link between the gender normative context and demographic trends by focusing on a less developed aspect, namely, marital stability, (3) and disentangling to what extent the relationship between gender norms and divorce can be attributed to direct and indirect factors.

BACKGROUND

Direct effects of gender-norms on divorce

Following Sevilla-Sanz (2010), I argue that gender-egalitarian norms create competing incentives for how spouses invest in home-specific and market capital. First, egalitarian gender-norms should spur married women's participation in the labor market. In egalitarian societies, the social costs of being, for instance, a working mother with young children should diminish. Also, in parallel, the labor market should offer equal and better career opportunities for women. According to Becker's marriage model (1981), however, reduced specialization within marriages decreases the gains of marriage and thus increases the probability of divorce. Thus, egalitarian gender norms,

by fostering women's labor market participation, could have a negative impact on marital stability. Oppenheimer (1988), however, argues that as society becomes egalitarian, both spouses' ability to contribute to the household's financial stability should decrease marital instability.

Second, while egalitarian gender norms incentivize women's investments outside the household, egalitarian contexts foster men's participation in home production. In a traditional setting, men's contribution to childrearing activities or housework may be frowned upon (Cherlin 2014, pp.30-34). In an egalitarian setting, however, the social costs for men of performing what are considered to be women's tasks should decline. Several studies show that objective indicators of gender equality positively correlate with couples' equal division of housework (Batalova and Cohen, 2002; Fuwa, 2004; Knudsen and Wærness, 2008) and men's participation in housework (Hook, 2006). Furthermore, Ruppanner (2010) finds that in countries where female labor force participation is high, the Gender Empowerment Measure (GEM) is associated with lower levels of couples' conflict about housework. Stevenson and Wolfers (2008) argue that in egalitarian contexts, marriage is redefined as a "hedonic marriage" where utility is derived from "consumption complementarities". Echoing Oppenheimer's thesis (1988), as society embraces equality, the gains of marriage increase when both partners jointly invest in labor market and home production.

McDonald's gender equity theory (2000a, 2000b, 2013) and Esping-Andersen multiple-equilibria approach (2009) contribute to reconciling the competing hypotheses of gender norms in predicting divorce risk. Focusing on fertility transitions, McDonald (2000) posits that fertility levels will continue to decline as long gender equity is limited to individual institutions, i.e. tertiary education and the labor market, but does not extend to "family-oriented social institutions". Extending this argument to family dynamics as a whole, Esping-Andersen (2009) and Esping-Andersen and Billari (2015) take a multiple-equilibria approach and argue for the "return of the family", i.e. higher fertility levels and declining marital instability, when a "critical mass" has adopted gender-egalitarian attitudes. Once a wide majority has been reached, the diffusion of egalitarian gender norms should, thus, push public and private institutions to adapt to women's redefined roles. In parallel, within the family, the equal participation of men and women in the household and labor market is expected to become normative. More precisely, as gender-egalitarian attitudes come into dominance, work-family conflicts

should diminish because of greater gender-symmetry within the household but also greater support for women in the labor market.

Specialization hypothesis: As society adopts gender-egalitarian norms, marriages become less stable. In an egalitarian context, the incentives for wives' to invest in market production are higher, which fosters deviation from any specialization couple arrangement.

"Hedonic marriage" hypothesis: As society adopts gender-egalitarian norms, marriages become more stable. In an egalitarian context, the marriage paradigm favors an egalitarian dual-earner arrangement by reducing the social costs of men's participation in the household and increasing the social benefits of women's investment in the labor market.

Multiple-equilibria hypothesis: Once egalitarian gender norms have gained acceptance, marriages become increasingly more stable as society moves towards an egalitarian equilibrium. Because the dominant gender norms are aligned to women's redefined roles as both wives and workers, work-family conflicts within couples should diminish and therefore couples are expected to become more stable.

Indirect effects of gender-norms on divorce

Changing social expectations about gender roles also indirectly affect spousal selection as well as the decision to marry. Both have indirect consequences on marital instability by changing the quality of marital matches and the married population's composition. In line with this argument, recent demographic trends in the United States suggest that overall Americans are marrying later and in fewer numbers (Cherlin 2004). While the prevalence of cohabitation is increasing, it remains quite unstable and does not offer a substitute to marriage as in Scandinavian countries (Heuveline and Timberlake 2004).

As predicted by Oppenheimer (1994), in the 'adaptive family strategy' marriage model, where both partners' ability to contribute to the household's financial situation matters for marriage formation and stability, men and women tend to postpone marriage for two reasons: to invest in themselves and to search for a better match. Furthermore, Cherlin (2004) argues that the value of marriage has shifted from conformism to

prestige, and, as a consequence, marriage is highly valued among low-income individuals as a sign of social achievement. The marriage bar is set very high regarding both the actual ceremony and the financial prerequisites to consider the possibility of marriage, such as a mortgage, a car and the ability to "make ends meet" (Edin et al. 2004). Edin and Kefalas (2005) in their ethnographic work on low-income single mothers in Philadelphia show that low-income women postpone or even forgo marriage as a consequence of the high value they place on marriage. Conflicting with women's expectations, men's relative socio-economic position has declined in the last decades, leaving low-educated women with fewer marriageable men (McLanahan 2004).

Taken these trends together, I argue that an unexpected consequence of the shift towards egalitarian norms is that it has set an ideal for marriage, which is not accessible to everyone. The "hedonic marriage", where husbands and wives both participate in the household and the labor market, may only be achievable for couples with good economic prospects. Financial resources also facilitate equality within the household by providing access to outsourcing, such as having a house cleaner or paying for private childcare. Therefore, the decline in marital instability at higher levels of gender equality may also be attributed to two indirect factors. First, as gender norms become more egalitarian, individual spend more time searching for a partner in the marriage market and this could result in better matches. Second, the marriage bar has become such that individuals or couples with low resources may decide not to marry because they cannot reach the ideal standards for an egalitarian marriage. Therefore, marital instability may be declining the divorce-prone population selects itself out of marriage.

Selection hypothesis: The shift towards an egalitarian equilibrium will also affect how individuals select themselves into marriage. As society embraces egalitarian attitudes, the partner search is expected to be longer and fewer will end up marrying. Because the egalitarian marriage also sets the marriage bar higher, individuals will spend more time searching for the ideal partner but also may decide to opt out of marriage if they cannot find a suitable match.

DATA AND METHOD

Data

I match individual-level data from the Panel Study of Income Dynamics to an aggregated regional index of gender norms constructed from the General Social Surveys. I also include time-varying contextual variables, which are based on the March Current Population Surveys (CPS) data from the Integrated Public Use Microdata Series (IPUMS) (King et al. 2010).

The individual divorce data are constructed using marital histories from the Panel Study of Income Dynamics, a survey that started in 1968 with a nationally representative sample of over 18,000 individuals residing in 5,000 family units. The survey includes information on employment, earnings, and demographic behavior. Interviews were collected annually from 1968 until 1997 and biennially thereafter until the most recent wave in 2011.

The prevalence of gender-egalitarian attitudes is measured at the region-level and for every year between 1968 and 2011. The gender values data are based on gender-items questions from the General Social Surveys. They consist of repeated cross-sectional individual-level surveys on attitudes, behaviors and demographic information of the American adult population. The surveys have been conducted every year, between 1972 and 1994[1], and every two years onwards. The unit of focus is the region rather the state for two main reasons: (1) The public version of the GSS data only provides the region at interview; (2) The target sample is of about 1,500 respondents, which is excessively small to derive reliable state-level indicators. The region of residence variable is defined according to the 9 following categories: New England; Middle Atlantic; East North Central; West North Central; South Atlantic; East South Central; West South Central; Mountain; Pacific (See Appendix 1 for a detailed description of the region classification).

Method

Marital separation is estimated using a discrete event-history model with random effects where the couple is the unit of analysis. First, I estimate the following hazard model for the risk of marital separation:

$$h_{irt} = \beta_1 X_{irt} + \beta_2 GI_{rt} + \beta_3 I_r + \beta_4 I_m + \beta_4 L_r + u_i \quad (1)$$

[1] The GSS was exceptionally not conducted in 1979, 1981, and 1992.

where the subscripts i, r and t refer, respectively, to the couple-unit, the region and the year. X_{irt} is a vector of couple- and individual-level observable characteristics. The gender normative context in region r and year t is represented by GI_{rt}. In order to test the different hypotheses, I first test for the linear effects of gender norms on divorce risk and then for non-linearity by including the square term of the gender index variable.

In the first model, I include dummy variables for each marriage year I_m and region I_r. The fixed effects account for unobservable and time-invariant differences in divorce propensities of each marriage cohort and region. The equation also has one explicit error term u_i, which represents a couple-specific random effect and captures unobserved time-invariant characteristics.

Second, I consider a second specification to account for unobservable trends within marriage cohort and region, which could be correlated with changes in gender-norms. For example, I could expect that religiosity and the acceptance of divorce follow similar trends to gender norms for each marriage cohort and within the different regions in our sample. In order to capture these changing differences, I include a region-specific linear trend $L_r$in our model as follows:

$$h_{irt} = \beta_1 X_{irt} + \beta_2 GI_{rt} + \beta_3 I_r + \beta_4 I_m + \beta_5 L_r + u_i \quad (2)$$

Finally, I introduce region-year variables in our model to test whether the effects of gender norms on individual divorce risk is not spurious. Other factors may be changing together with gender norms and also affect individual divorce propensities. If I fail to control for such variables, I cannot disentangle whether the coefficient for gender norms captures the effect of gender norms or of other confounding variables, which also affect divorce risk. In our third model, I include region-year variables Z_{rt} as follows:

$$h_{irt} = \beta_1 X_{irt} + \beta_2 GI_{rt} + \beta_3 I_r + \beta_4 I_m + \beta_5 L_r + \beta_6 Z_{rt} + u_i \quad (3)$$

Measures

Divorce Event – The dependent variable in the individual is defined as a binary variable that takes the value of 1 in the year in which the couple either separates or divorces. First and higher-order marriages are included. Whenever both the separation and divorce dates are reported, the separation data is considered as the marriage end date. The marital histories are defined from the woman's perspective and are restricted

to marriages that occur between 1968 and 2009. Marriage histories are right-censored at the first of the following events: either the 20th year of marriage, a spouse's death, the last interview. The final sample is composed 9,479 marriages of which 1,654 end in divorce, which represent a 17% divorce rate.

Gender Normative Context – Several questions regarding gender attitudes have been included in different rounds of the GSS. The following three questions are selected:

- "Do you strongly agree, agree, disagree, or strongly disagree with the following statement:
    - "It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family" (FEFAM).
    - "A working mother can establish as warm and secure a relationship with her children as a mother who does not work."(FECHLD)
    - "A preschool child is likely to suffer if his or her mother works."(FEPRESC)

These questions have been often used in the literature to capture trends in gender attitudes in the United States (see for an example Cotter, Hermsen, and Vanneman 2011). These three survey questions have been asked in the following 18 survey years: in 1977, 1985-1986, 1988-1991, 1993 and every two years from 1994 to 2012. All the available surveys are pooled and a principal-factor analysis is carried out to obtain a unique gender index where higher scores represent more egalitarian gender role attitudes. In order to fill the missing years before 1977 and between 1977 and 2010, an interpolation is carried out (See Appendix B for a detailed explanation of the construction of gender ideology index). The regional trends in the gender index are presented in Figure 1.

Control variables – In the event-history analysis, I include several sets of control variables. At the individual-level, standard control variables are included regarding wife's characteristics such as race, educational attainment, age at marriage and its square, and whether it is her first marriage. For the husband, education attainment is included, whereas race and age at marriage are excluded because they are highly correlated with the wife's. A categorical variable to capture age difference between husband and wife is also added to the individual-level models. Finally, the duration variable is specified as a logarithmic function.

At the region-level, I consider alternative contextual mechanisms to gender norms, which have been found to be relevant in the literature. Using IPUMS March CPS, I construct yearly variables to control for women's changing roles in the labor market and tertiary education by including the regional female employment rate and the regional share of women with tertiary education. Then, I include regional male unemployment rate to capture the deterioration of men's position in the labor market. Means, standard deviations, minimum and maximum for all variables are presented in Table 1.

RESULTS

Gender-norms and divorce risk

Results of the marital separation analysis are shown in Table 2 and 3. In Table 2, the gender index is specified as a linear variable, while in Table 3 all models include both the linear and quadratic terms. The estimated coefficients are reported as odds ratios. Model 1 in Table 2 and 3 presents the results of estimating Equation (1). As specified in the method section, in the first specification, a region and marriage year fixed effects are included.

The main variable of interest is the coefficient of the gender index, which captures the relationship between regional gender norms and couples' probability to divorce. In Table 2, Model 1 shows that the coefficient of the gender index is not statistically significant when included linearly. The linear relationship between gender norms and couples' marital stability appears not to be validated by the results of Model 1. However, in the quadratic specification presented in Table 3, the relationship becomes statistically significant. The coefficients of both the linear and quadratic terms of the gender index are below 1 and statistically significant suggesting a nonlinear relationship between gender norms and divorce. Given that the gender index is centered on zero, the negative coefficients imply a reverse U-shaped relationship between regional gender norms and a couple's individual probability to divorce.

Theoretically, the estimated results for Model 1 are consistent with the *multiple-equilibria* hypothesis. When gender norms are traditional, a shift towards equality is positively associated with couples' divorce risk, while when gender norms become dominantly egalitarian the relationship reverses. Therefore, the *specialization* and

"hedonic" marriage hypotheses are only partially confirmed by the empirical findings. The *specialization* hypothesis holds when society is in transition between traditional gender norms and an intermediary stage of the gender revolution. In this scenario, as predicted by the *specialization* hypothesis, the destabilizing effects of an increase in the opportunity-cost of wives' labor market participation dominates, and consequently produces instability within marriages. Conversely, the *"hedonic" marriage* hypothesis is corroborated when society is in transition from an intermediary stage of the gender revolution to one of egalitarian gender norms. In such a context, the decrease in the social costs of men's involvement in the household compensates for the destabilizing effects of women's participation in the labor market. Therefore, marriages become more stable as society comes closer to fully egalitarian norms.

Model 2 in Tables 2 and 3 presents the results of the estimation of Equation 2. In comparison to Model 1, Model 2 includes regional marriage cohort linear trends, which capture linear changes in unobservable factors within regions. The linear specification results presented in Table 2 remain statistically insignificant. The quadratic relationship between gender norms and divorce risk presented in Model 2 in Table 3 remains robust to the inclusion of the region-marriage cohort linear trends. The size of the gender index coefficients is smaller with respect to Model 1. The linear trend coefficients are also negative (but not all are significant), suggesting that other factors, which appear to be correlated to changes in gender norms, predict a decline in divorce. More recent marriage cohorts have a lower risk of divorce and also live in settings where egalitarian gender norms are dominant. Therefore, omitting the region-marriage cohort specific linear trends would lead to an upward bias in the size effect of gender norms on marital instability.

Model 3 in Table 2 and 3 presents the results from estimating Equation 3. Model 3 adds to Model 2 by including alternative time-varying regional variables. I consider three contextual covariates to control for regional factors that could be correlated to both gender norms and divorce risk. In particular, we focus on men's labor market prospects and women's educational attainment and labor market participation. We include male unemployment rate in each region and year to capture varying opportunities in the labor market for men. Also, female employment rate and the share of women with tertiary education are incorporated in Model 3. As predicted by the literature, regional unemployment rate for men predicted higher individual divorce risk. But the effect is only significant in Table 2 when the gender index is added as a linear

term. The female employment rate remains insignificant under both specifications, while the regional share of tertiary educated women is highly significant and negatively associated to divorce risk.

Comparing Model 3 to the previous models, I find that the linear specification remains insignificant as shown in Table 2 but the size of the coefficient for gender norms is larger with respect to previous models. The quadratic specification is robust to the inclusion of additional regional factors. Similarly to the linear Model 3 in Table 2, the size of the gender norms linear term in Model 3 presented in Table 3 is actually larger once the confounding variables are included, whereas the quadratic term remains almost unchanged. The changes in coefficient size suggest that omitting the regional factors leads to a downward bias for the linear effect of gender norms on divorce risk.

To illustrate our main result, I select the preferred estimates presented in Model 3 in Table 3 to predict the risk of divorce at different levels of gender ideology. Figure 2 presents an inverse U-shape association between gender norms and predicted divorce risk. The red line indicates the level of gender ideology at which the relationship reverses. As expected, the results suggest that an increase in egalitarian gender norms in a traditional society is positively associated to divorce risk. It is only when a large share of society has adopted egalitarian gender attitudes that an increase in gender norms becomes negatively associated with marital instability.

Gender-norms and selection into marriage

I consider as an alternative mechanism how changes in gender norms indirectly affect marital instability by increasing selection into marriage. If marriage selectivity heightens as gender norms become more egalitarian, the decline in marital instability could be attributed to the composition of the married poll rather than to changes in the social costs of market and non-market investments. To test for the *selection* hypothesis, I look at how changes in gender norms affect the transition to first marriages in our sample. I apply the model defined in Equation (3) to estimate the risk of first marriage formation for men and women separately. Differently from the marital separation model, I include birth year fixed effects as well as region- birth cohort trends (linear for women and cubic for men). The gender index is specified first with only the linear term

and then the quadratic term is considered. The best fit for men is a quadratic specification while for women the linear one is most adequate.

Results for the marital formation models are presented in Table 4. The estimated coefficients are reported as odds ratios. Model 1 shows the results for women and Model 2 for men. In both models, the gender index coefficients are statistically significant and negative (<1). In Model 1, both the linear and quadratic terms are significant suggesting a non-linear relationship between gender norms and entry into marriage for men. In Model 2, only the linear coefficient of the gender index is significant. For ease of interpretation, I turn to the predicted probability of entry into first marriage by gender at different levels of the gender index. Figure 3 presents on the left panel the risk of marriage for men and, on the right, the risk of marriage for women. As predicted by the *selection* hypothesis, I find that as society adopts more egalitarian gender norms, the risk of marriage decreases. The decline is somewhat moderated for women at higher levels of gender index, but it remains negative nonetheless. The results suggest that the selectivity of marriage increases in more egalitarian contexts. One possible explanation is that the egalitarian dual-earner marriage is not accessible to everyone. In the context of the United States, these findings are quite relevant because cohabitations tend to be short-lived and do not offer a stable alternative to marriage (Heuveline and Timberlake 2004).

Taken together, these results suggest that the shift from traditional to egalitarian norms predicts two diverging partnership outcomes. First, when a large share of society has embraced egalitarian norms, advances towards gender normative equality are associated to a decreasing risk of divorce. Second, the selectivity of marriage increases as gender norms become more egalitarian. The first result clearly corroborates the *multiple-equilibiria* hypothesis, however, the second finding suggests that this new egalitarian equilibrium is not fully shared among society.

DISCUSSION

In this article, I confirm the theoretical idea that contextual measures of gender norms matter for individual demographic decisions. I find that when gender norms are traditional, an increase towards equality is positively associated to individual divorce

risk. This relationship, however, reverses at higher levels of the gender index. In other words, when the prevalence of gender-egalitarian attitudes has reached intermediary levels, the association between gender-egalitarian attitudes and divorce risk becomes negative. The empirical findings corroborate Esping-Andersen's *multiple-equilibria* thesis of an inversed-U shape association between gender norms and divorce risk. This finding is robust to the inclusion of region and marriage cohort fixed effects, region-cohort linear trends and alternative regional variables.

The first part of the analysis suggests that as society moves towards equality, we should expect a return of the family, that is, to more stable demographic behaviors and a closer match between outcome and preferences (Esping-Andersen and Billari 2015). This theoretical argument is, however, hindered by the marriage selectivity results, which suggest that society as a whole is not moving towards a new equilibrium but rather only a selected group is. The marriage formation results show that egalitarian gender norms predict decreasing risk of a transition to first marriage for both men and women. In the American context, it is still relevant to differentiate between marriage and cohabitation because they do not provide equivalent alternatives. In the United States, cohabitations are short-lived and tend to be concentrated among individuals with low resources. Therefore, while the findings predict a decline of marital instability when gender norms become egalitarian, they also reflect the "diverging destiny" thesis (McLanahan 2004.

Overall, this article contributes to our understanding of changing demographic behaviors by considering and testing competing theoretical hypotheses on the relationship between gender norms and marital decisions. With respect to previous studies, I limit the analysis to one country, the United States, but I study five decades of demographic changes together with changing gender norms. By doing so, I fully take into account the diffusion of gender norms rather than assume it. Most importantly, I test whether the association found in previous studies (e,g, Arpino et al. 2015) between contextual measures of gender norms and aggregate behaviors also holds at the individual-level.

Our analyses do not come without caveats. While a major strength of this article is the micro-macro approach, I still cannot fully disentangle why couples decide to divorce. Only data on marital conflicts or divorce decisions could provide better insights for this mechanism. In line with the theoretical argument, the work by Ruppaner (2010) shows couples have less conflict over housework in countries with both high levels of

female labor participation and GEM (Gender Empowerment Index). Also, in another study by Ruppaner (2013), she finds that fathers have less family-work and mothers less work-family conflict in countries that facilitate work and parenthood reconciliation.

Finally, the findings of this article may reflect another case of US exceptionalism for several reasons. First, divorce rates remain relatively high in the United States with respect to other countries making meaningful comparison difficult. Second, the nature of both marriage and cohabitation are quite specific to the United States. In several European countries, such as the Scandinavian countries or France, cohabitation offers a valid and stable alternative to marriage for family formation. Therefore, the *selectivity* hypothesis may be hard to apply to such contexts. Only future comparative work on gender norms and demographic behaviors will provide answers to these questions.

Figures and Tables

Figure 1 – Predicted gender ideology by region between 1968 and 2011

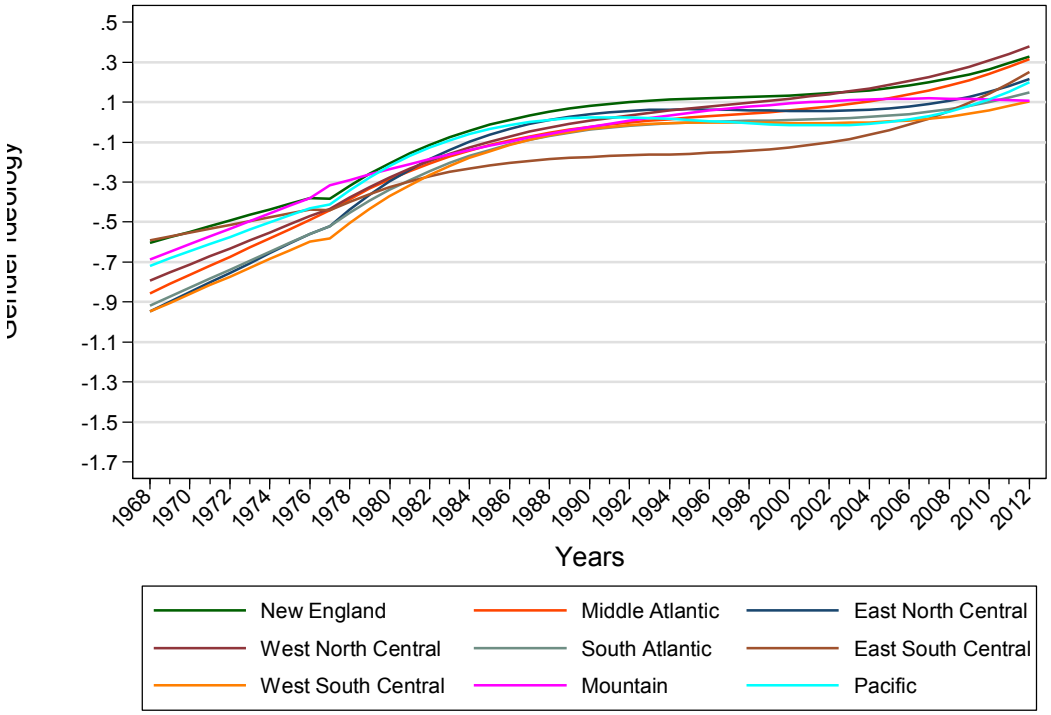

Figure 2 – Predicted divorce risk at different levels of the gender index (based on Model 3 in Table 3)

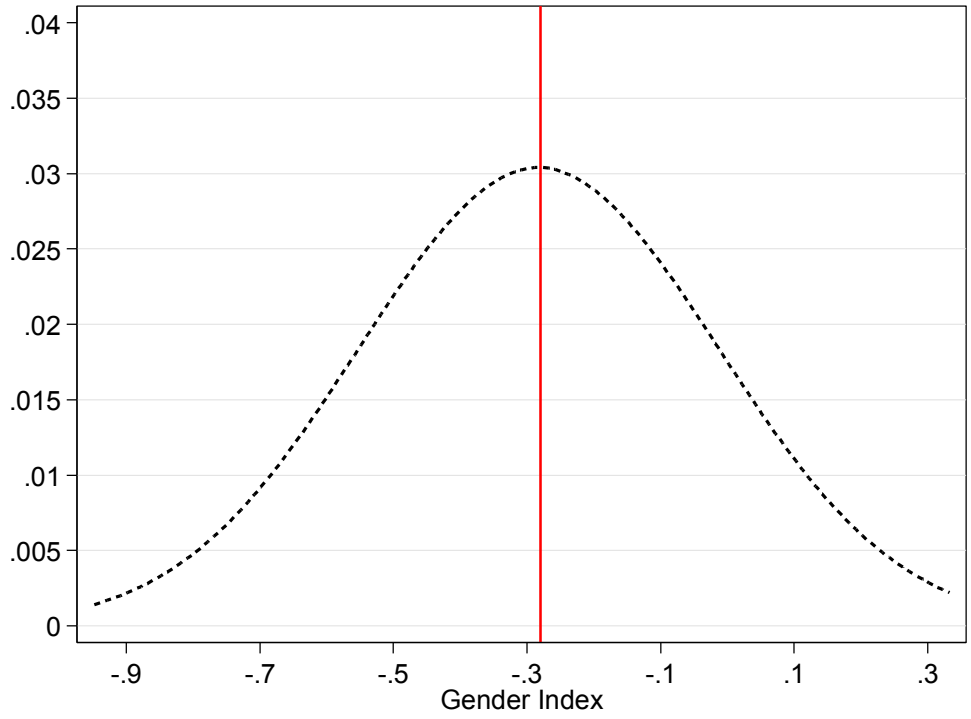

Figure 3 – Predicted divorce risk at different levels of the gender index (based on Model 1 and 2 in Table 4)

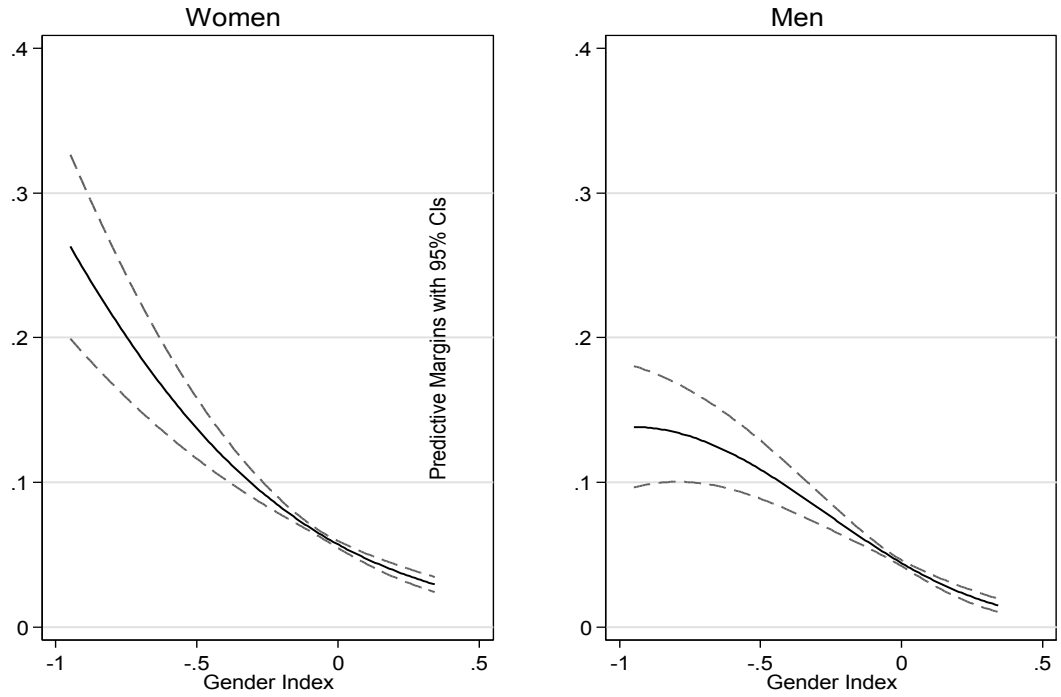

Table 1 – Descriptive statistics for the individual analysis

	Mean	Sd	Min	Max
Region-level variables				
Gender index	-0.09	0.20	-0.95	0.34
Gender index sq.	0.05	0.11	0.00	0.90
Male unemployment rate	7.13	2.17	2.01	14.98
Female employment rate	54.36	5.48	37.74	69.35
% of tertiary educated women	20.28	6.19	6.81	40.17
Couple-level variables				
Log of marriage duration	1.83	0.82	0.00	3.00
First marriage	0.73	0.44	0.00	1.00
Wife's age at start of marriage	27.28	8.67	16.00	69.00
Wife's age at start of marriage^2	819.46	589.88	256.00	4761.00
Wife's race				
White	0.65	0.48	0.00	1.00
Black	0.25	0.43	0.00	1.00
Other	0.10	0.30	0.00	1.00
Wife's education				
Less than high school diploma	0.12	0.33	0.00	1.00
High school diploma	0.35	0.48	0.00	1.00
Some college	0.28	0.45	0.00	1.00
College degree	0.24	0.43	0.00	1.00
Husband's education				
Less than high school diploma	0.16	0.36	0.00	1.00
High school diploma	0.38	0.49	0.00	1.00
Some college	0.23	0.42	0.00	1.00
College degree	0.23	0.42	0.00	1.00
Age difference				
Husband is older	0.67	0.47	0.00	1.00
Wife is older	0.22	0.41	0.00	1.00
Same age	0.11	0.32	0.00	1.00
Region				
New England	0.04	0.19	0.00	1.00
Middle Atlantic	0.11	0.31	0.00	1.00
East North Central	0.15	0.36	0.00	1.00
West North Central	0.08	0.28	0.00	1.00
South Atlantic	0.23	0.42	0.00	1.00
East South Central	0.09	0.28	0.00	1.00
West South Central	0.11	0.32	0.00	1.00
Mountain	0.05	0.22	0.00	1.00
Pacific	0.13	0.34	0.00	1.00
Marriage year (1968 = 0)	20.60	10.90	0.00	41.00
Episodes		9,479		
Person-years		74,840		

Notes: Sd = Standard deviation, Min = Minimum, Max = Maximum.

Table 2 – Gender norms and marital instability – Linear specification

	Model 1			Model 2			Model 3		
Gender norms									
Gender index	0.999	(0.328)		0.927	(0.310)		1.217	(0.552)	
Regional confounders									
Male unemployment rate							1.035	(0.016)	*
Female employment rate							1.007	(0.021)	
% of tertiary educated women							0.888	(0.018)	***
Couple variables									
Log of marriage duration	1.209	(0.079)	**	1.207	(0.079)	**	1.649	(0.140)	***
Wife's age at start of marriage	0.856	(0.021)	***	0.856	(0.021)	***	0.861	(0.021)	***
Wife's age at start of marriage^2	1.002	(0.000)	***	1.002	(0.000)	***	1.001	(0.000)	***
First marriage	0.589	(0.052)	***	0.589	(0.052)	***	0.599	(0.051)	***
Wife's education (Ref: < H.S.)									
High school diploma	1.078	(0.105)		1.077	(0.104)		1.070	(0.101)	
Some college	1.281	(0.135)	*	1.271	(0.133)	*	1.257	(0.128)	*
College degree	0.997	(0.122)		0.993	(0.120)		0.998	(0.118)	
Wife's race (ref. white)									
Black	1.480	(0.104)	***	1.484	(0.103)	***	1.472	(0.100)	***
Other	0.832	(0.103)		0.841	(0.104)		0.873	(0.105)	
Husband's education (Ref: < H.S.)									
High school diploma	0.766	(0.063)	**	0.763	(0.062)	***	0.767	(0.061)	***
Some college	0.709	(0.067)	***	0.708	(0.066)	***	0.713	(0.065)	***
College degree	0.363	(0.043)	***	0.364	(0.043)	***	0.375	(0.043)	***
Age difference (Husband is older)									
Wife is older	1.223	(0.090)	**	1.222	(0.089)	**	1.215	(0.086)	**
Same age	0.912	(0.081)		0.911	(0.081)		0.908	(0.079)	
Regional fixed effects	Yes			Yes			Yes		
Marriage year fixed effects	Yes			Yes			Yes		
Region-specific linear trend				Yes			Yes		
σ_u	0.780	(0.167)		0.751	(0.170)		0.612	(0.208)	
Episodes	9479			9479			9479		
Couple-years	74840			74840			74840		

Note: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001, Standard errors in parenthesis.

Table 3 – Gender norms and marital instability – Quadratic specification

	Model 1			Model 2			Model 3		
Gender norms									
Gender index	0.039	(0.023)	***	0.017	(0.011)	***	0.052	(0.036)	***
Gender index sq.	0.003	(0.002)	***	0.001	(0.001)	***	0.002	(0.002)	***
Regional confounders									
Male unemployment rate							1.025	(0.016)	
Female employment rate							0.979	(0.021)	
% of tertiary educated women							0.921	(0.020)	***
Couple variables									
Log of marriage duration	1.340	(0.093)	***	1.387	(0.096)	***	1.730	(0.149)	***
Wife's age at start of marriage	0.859	(0.021)	***	0.860	(0.021)	***	0.864	(0.020)	***
Wife's age at start of marriage^2	1.001	(0.000)	***	1.001	(0.000)	***	1.001	(0.000)	***
First marriage	0.594	(0.052)	***	0.598	(0.052)	***	0.606	(0.051)	***
Wife's education (Ref: < H.S.)									
High school diploma	1.071	(0.103)		1.067	(0.102)		1.063	(0.099)	
Some college	1.267	(0.132)	*	1.256	(0.129)	*	1.246	(0.125)	*
College degree	0.996	(0.120)		0.989	(0.118)		0.993	(0.116)	
Wife's race (ref. white)									
Black	1.468	(0.102)	***	1.465	(0.100)	***	1.453	(0.097)	***
Other	0.833	(0.103)		0.848	(0.104)		0.873	(0.104)	
Husband's education (Ref: < H.S.)									
High school diploma	0.762	(0.062)	***	0.763	(0.061)	***	0.767	(0.060)	***
Some college	0.707	(0.066)	***	0.707	(0.065)	***	0.712	(0.064)	***
College degree	0.365	(0.043)	***	0.368	(0.043)	***	0.377	(0.043)	***
Age difference (Husband is older)									
Wife is older	1.220	(0.089)	**	1.220	(0.088)	**	1.213	(0.085)	**
Same age	0.910	(0.081)		0.910	(0.080)		0.909	(0.078)	
Regional fixed effects	Yes			Yes			Yes		
Marriage year fixed effects	Yes			Yes			Yes		
Region-specific linear trend				Yes			Yes		
σ_u	0.724	(0.183)		0.679	(0.187)		0.539	(0.235)	
Episodes	9479			9479			9479		
Couple-years	74840			74840			74840		

Note: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001, Standard errors in parenthesis.

Table 4 – Gender norms and first marriage formation – Women and Men

	Model 1			Model 2		
Gender norms						
Gender index	0.122	(0.028)	***	0.058	(0.021)	***
Gender index sq.				0.226	(0.074)	***
Regional confounders						
Male unemployment rate	1.000	(0.008)		1.006	(0.008)	
Female employment rate	0.979	(0.011)	+	0.975	(0.011)	*
% of tertiary educated women	1.029	(0.015)	+	1.075	(0.016)	***
Couple variables						
Duration	1.726	(0.032)	***	1.951	(0.045)	***
Duration sq.	0.973	(0.001)	***	0.969	(0.001)	***
Duration cub.	1.000	(0.000)	***	1.000	(0.000)	***
Education (Ref: < H.S.)						
High school diploma	1.536	(0.092)	***	1.373	(0.072)	***
Some college	1.502	(0.093)	***	1.325	(0.075)	***
College degree	1.228	(0.079)	**	1.152	(0.067)	*
Race (ref. white)						
Black	0.270	(0.012)	***	0.438	(0.020)	***
Other	0.637	(0.043)	***	0.747	(0.050)	***
Regional fixed effects	Yes			Yes		
Marriage year fixed effects	Yes			Yes		
Region-specific linear trend	Yes			Yes		
σ_u	0.910	(0.037)		0.847	(0.076)	
N	12771			13374		
Person-Years	102592			134083		

Note: + p<0.10 * p<0.05 ** p<0.01 *** p<0.001, Standard errors in parenthesis.

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Appendices

Appendix A - Description of regions

New England = Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island
Middle Atlantic = New York, New Jersey, Pennsylvania
East North Central = Wisconsin, Illinois, Indiana, Michigan, Ohio
West North Central = Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
South Atlantic = Delaware, Maryland, West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida, District of Columbia
East South Central = Kentucky, Tennessee, Alabama, Mississippi
West South Central = Arkansas, Oklahoma, Louisiana, Texas
Mountain = Montana, Idaho, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico
Pacific = Washington, Oregon, California, Alaska, Hawaii

Appendix B – Gender Index Construction

To construct the gender ideology the following three questions are selected from the GSS:

- "Do you strongly agree, agree, disagree, or strongly disagree with the following statement:
    - "A working mother can establish as warm and secure a relationship with her children as a mother who does not work."(FECHLD)
    - "A preschool child is likely to suffer if his or her mother works."(FEPRESC).
    - "It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family" (FEFAM).

The sample size and distribution of each of the variable is described in the table below.

	Mean	Sd	Min	Max
Mother working doesnt hurt children	2.19	0.88	1	4
Preschool kids suffer if mother works	2.56	0.81	1	4
Better for man to work, woman tend home	2.68	0.86	1	4
Observations		24,296		

A factor analysis is carried out using the principal-component factor method, retaining one factor. After applying the orthogonal Varimax rotation, the score is predicted corresponding to the measure of gender norms, referred to as gender ideology. The Cronbach's alpha is of about 0.74, which suggests to the factor analysis is reliable.

To supplement to the missing between 1977 and 2010, gender ideology index is predicted using an OLS regression and specifying time as a cubic function interacted with the respondent's region of residence. For the 1968-1976, the gender index is extrapolated using linear interpolation by region of residence.