reading group summer 24
Social Norms, Labour Market Opportunities, and the
Marriage Gap Between Skilled and Unskilled Women (2021)

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Introduction

- document heterogeneity across countries in how the marriage gap between skilled and unskilled women has evolved over time
- write a theoretical model to rationalise this using gender norms

Motivation

- declining marriage rates in high-income, industrialised countries
- US, 2010: 20% of adults aged 35-44 never married
- reasons: access to birth control, labour-saving technological progress in HH production, ease of divorce, reduced gender discrimination and gender wage gaps

Motivation 2

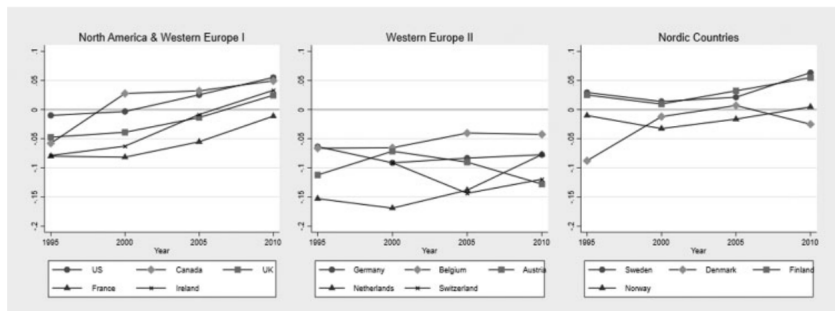- reversal of the marriage deficit for women in the US, Western Europe, Nordic countries ...

Figure 1:

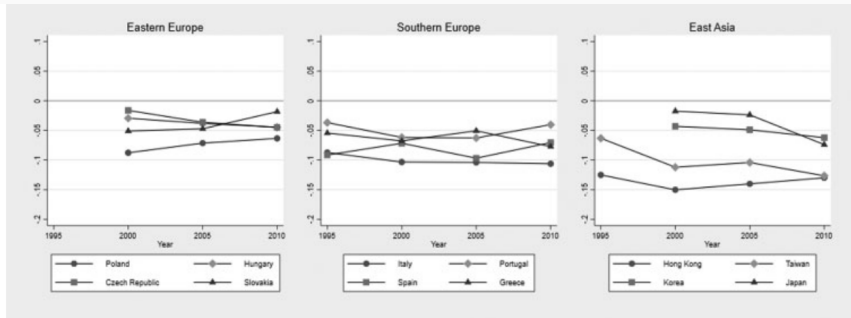- ... but not quite in East Asia, Southern and Eastern Europe

Figure 2:

Motivation 4

- a U-shaped relationship in the marriage gap between skilled and unskilled women by birth cohort
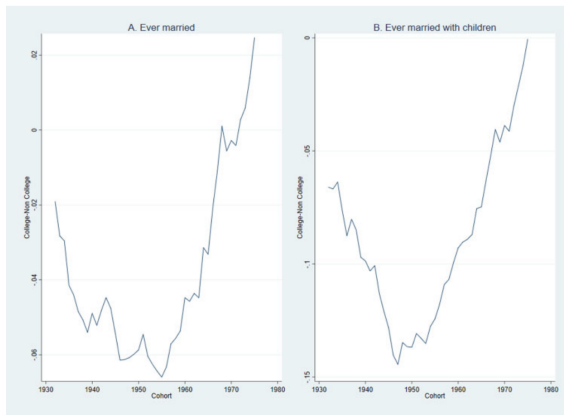

Figure 2
Difference in female ever married rates by skill (college - non college) across birth cohorts in the U.S.

Related Literature (that I found interesting)

- Greenwood et al. (2016): show how technological progress, by eroding the value of labour at home, played a crucial role in the decline in marriage as well as the rise in married women's labour force participation
- Lundberg and Pollak (2014): marriage might have remained more important as a commitment device among the highly educated due to the increased returns to joint investments in children
- Kawaguchi and Lee (2017): argue that the high demand for foreign brides in developed Asian economies is the consequence of improvements in women's economic status in countries characterized by very traditional gender roles
- Feyrer et al. (2008): suggest the possibility of a non-monotonic relationship between changes over time in the status of women in the workforce and fertility (U-shaped)

Model

- Women choose skill level
- Men and women obtain random match in marriage market
- Non-cooperatively decide whether to marry based on match quality
- Married couples decide on time allocation between market work and HH production of public good (KIDS)
- Single agents produce no kids and consume their income

Model - HH Decisions

- Utilities:

$$V_m^f(w_m, w_f, q_m) = \max_{0 \le t_m \le 1} [(1 - t_m)w_m + \alpha_m(1 - t_f)w_f + \beta \log[(t_m + t_f)n] + q_{mf}],$$

$$V_f^m(w_f, w_m, q_f) = \max_{0 \le t_f \le 1} [(1 - t_f)w_f + \alpha_f(1 - t_m)w_m + \beta \log[(t_m + t_f)n] + q_{fm}], \tag{1}$$

Figure 4:

- private consumption, spillover from spouse's consumption, public good consumption, match quality
- number of children n fixed
- static, no bargaining: spouse's labour supply decisions taken as given
- $\alpha_m < \alpha_f$: more so in gender-conservative societies. interpet as disagreement over consumption bundles or downweighting other's career

Model - HH Decisions

- utility for men between marrying a working or a non-working wife:

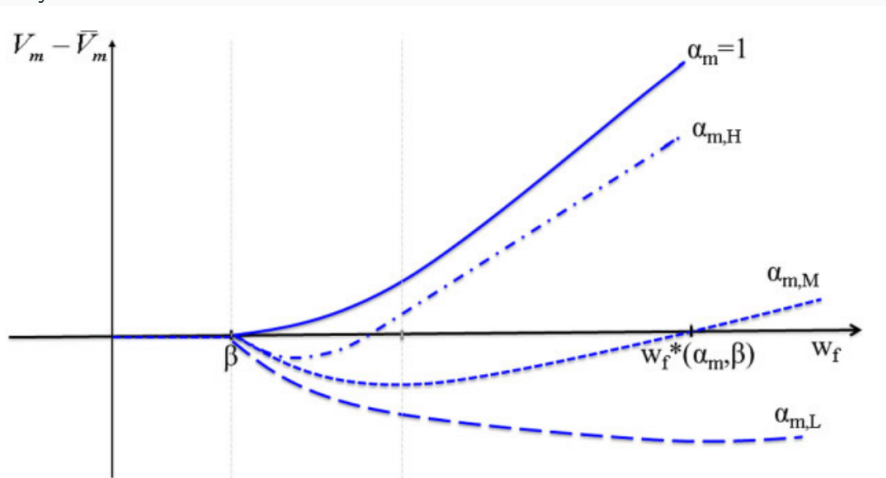$$V_m(w_f) - \overline{V}_m = \alpha_m(w_f - \beta) + \beta \log \frac{\beta}{w_f} \tag{2}$$

$$\frac{\partial(V_m - \overline{V}_m)}{\partial w_f} = \alpha_m - \frac{\beta}{w_f}. \tag{3}$$

Figure 5:

- threshold wage w_f^*: indifferent between working and non-working wife
- w_f^* decreasing in α_m
- non-monotonicity of utility from marrying a working wife (public good production vs higher wage)

Model - HH Decisions

- the husband's loss following an increase in w_f is largest in the most conservative economy

(a) Different values of alpha

Model - Random Matching

- one period search, only two types of people (high/low skilled)
- obtain a random draw of match quality q
- homogamy: when agents of the same skill type meet, they draw their match qualities from a better distribution (FOSD)
- assumption: unskilled women don't work

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Model - Random Matching

- marriage probabilities

$$\Pi_f^S = \left[\pi_m \overline{F}_{i=j}(q_{f,SS}^*) \overline{F}_{i=j}(q_{m,S}^*) + (1-\pi_m) \overline{F}_{i\neq j}(q_{f,SU}^*) \overline{F}_{i\neq j}(q_{m,U}^*) \right] \tag{5}$$

$$\Pi_f^U = \left[\pi_m \overline{F}_{i\neq j}(q_{f,US}^*) \overline{F}_{i\neq j}(q_{m,U}^*) + (1-\pi_m) \overline{F}_{i=j}(q_{f,UU}^*) \overline{F}_{i=j}(q_{m,U}^*) \right] \tag{6}$$

Figure 7:

- skilled women: Π non-monotonic, decreases first and then increases in w_f
- unskilled women: Π monotonically decreasing in w_f

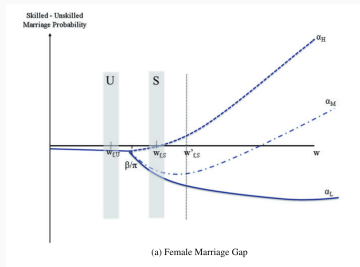## Model - Comparative Statics

- marriage gap

Figure 8:

- negative gap for wages below β
- for wages above w_f^*, marriage penalty turns into a premium
- in between, u-shaped
- smallest gap in the least conservative economy

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Empirical Tests of the Model

Three testable predictions (all else equal, obviously)

- Skilled women's relative marriage deficit larger in more gender conservative areas
- Better economic opportunities are associated with relative gains for skilled women in the marriage market in more gender equal socieities
- Fewer women would choose to become skilled in more conservative societies in response to greater barriers in marriage market
- bonus: U-shaped relationship between the female skilled–unskilled marriage gap and women's labour market opportunities as well as evidence of differential U-shaped relationships by sexism level across U.S. states

Data

- Cross-county: high income countries in Europe, Asia, and North America: Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, Ireland, Italy, Japan, Korea, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Taiwan, the U.K., and the U.S
- Gender attitudes:
  - World Values Survey (WVS) and European Values Study (EVS): "When jobs are scarce, men have more right to a job than women."
  - International Social Survey Programme (ISSP), cross-country comparisons of social trends, Family and Changing Gender Roles module: "A man's job is to earn money; a woman's job is to look after the home and family."
  - correlation between the average response to the IVS and ISSP questions is high (0.81)

Data

- Marriage market: marriage gap is the difference in the fraction of women who were ever married, between those with and without a tertiary education
  - majority of countries: more educated women marry less, more educated men marry more
  - exceptions (women): Nordic countries, US, UK, Canada, Ireland
  - exceptions (men): Italy, Austria, Spain, Switzerland, and Greece
- Labour market: average annual wages of high-skilled females, the gender wage gap by skill group, and the skilled–unskilled wage premium for males and females
- much smaller changes in the gender wage gaps and limited changes in the skill premiums despite rising skilled women's wages
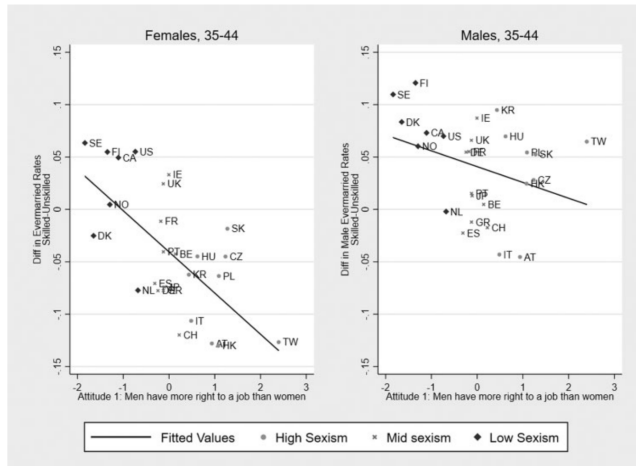
Prediction 1

- Yes

FIGURE 5
Skilled–unskilled marriage gaps and social norms by gender, 2010.

- Yes

TABLE 2
Skilled–unskilled marriage gap, social norms and women's labor market opportunities

| | Dep var. difference in ever married rates (high skilled–low skilled) | | | | | | | |
| | Females | | | | | | Males | |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
LGDP pc	0.186**	0.283***	0.060	0.075			0.125**	0.020
	[0.087]	[0.096]	[0.056]	[0.064]			[0.058]	[0.038]
LGDP pc*high sexism	−0.218***	−0.409***					−0.155**	
	[0.078]	[0.087]					[0.070]	
LGDP pc*mid sexism	−0.078	−0.178*					−0.103*	
	[0.085]	[0.097]					[0.056]	
LGDP pc*sexism index			−0.071**	−0.144***				−0.041
			[0.027]	[0.030]				[0.029]
L(HS F wage)					0.092**	0.052		
					[0.037]	[0.039]		
L(HS F wage)*high sexism					−0.125**			
					[0.046]			
L(HS F wage)*mid sexism					−0.018			
					[0.043]			
L(HS F wage)*sexism index						−0.029		
						[0.031]		
Other controls	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	97	86	97	86	86	86	86	86

Prediction 3

- Also yes

TABLE 3
Correlation between female tertiary attainment and social norms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	2005 (8)	2000 (9)	1995 (10)
				Year=2010						
High sexism dummy	−0.106*** [0.029]	−0.131*** [0.041]	−0.136*** [0.037]					−0.150*** [0.038]	−0.141*** [0.037]	−0.098*** [0.037]
Mid sexism dummy	−0.070** [0.032]	−0.100** [0.044]	−0.093** [0.037]					−0.088** [0.037]	−0.079** [0.033]	−0.042 [0.033]
Sexism Index: men have more right to a job than women (mean 0, var 1)				−0.034** [0.016]	−0.042** [0.017]	−0.050*** [0.016]				
Diff. in ever married rates (high skilled–low skilled) - females							0.730*** [0.183]			
Share of males with tertiary education	0.658*** [0.077]	0.779*** [0.161]	0.862*** [0.134]	0.687*** [0.102]	0.818*** [0.188]	0.936*** [0.154]	0.818*** [0.148]	0.557*** [0.124]	0.605*** [0.164]	0.546** [0.193]
Measure of women's opportunities	None	LGDP pc	L(HS F Wage)	None	LGDP pc	L(HS F Wage)	LGDP pc	LGDP pc	LGDP pc	LGDP pc
Other controls	No	Yes	Yes	No	Yes	Yes	Yes	No	No	No
Observations	26	26	26	26	26	26	26	26	26	19

Notes: The unit of observation is country. Each column is a separate regression with the share of females with tertiary education in each time period (2010, 2005, 2000, 1995) as the dependent variable. The high (mid) sexism dummy refers to the top (middle) tercile of countries in terms of conservativeness of gender norms as measured using the IVS. Sexism Index is the continuous measure of gender norms from the IVS, standardized to have mean of 0 and standard deviation of 1 in the sample of 26 countries. All regressions include a control for the share of men with tertiary education in each country. Other controls include the the skill premium and the gender gap. Robust standard errors are reported in brackets.***$p<0.01$, **$p<0.05$, *$p<0.1$.

Figure 11:

Robustness checks

- α (gender conservatism) or β (valuation of HH public good)?
- cohabitation instead of marriage, fertility
- exclude East Asia
- other measures of gender norms

Evidence from the U.S.

- Data: 1970 to 2000 U.S. Census and the 2008 to 2011 ACS
- native-born, non-hispanic whites
- gender norms from the GSS: "It is better if the man is the achiever outside the home and the woman takes care of home and family."
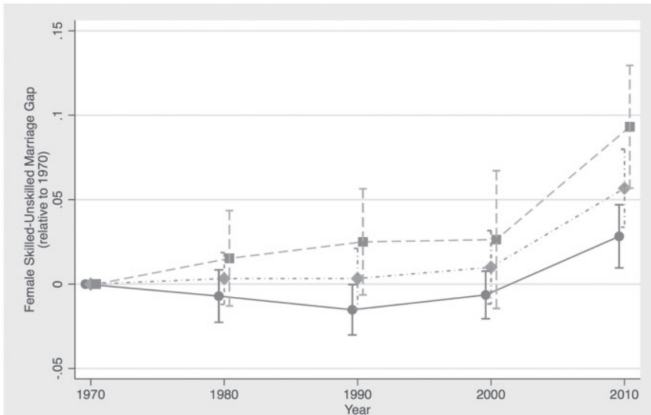
Evidence from the U.S.

- high-skilled women's wages increasing, gender wage gap decreasing, skill premia increasing
- substantial variation in marriage gap across states

Evidence from the U.S.

- 15 states in each "sexism group"
- low sexism states: RI, NJ, MI, VT, SD, OR, MA, ND, MD, CT, IO, NH, AK, MN, DC (???)

(a) No controls

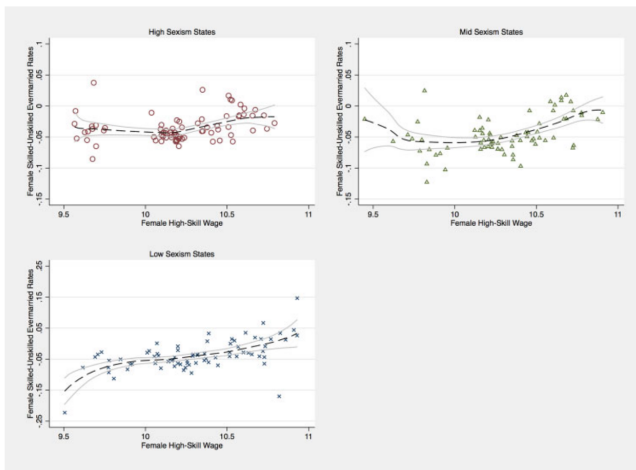- how marriage gap varies with labour market opportunities

FIGURE 7
Female skilled–unskilled marriage gap and female high-skilled wage by sexism group, U.S. states.

Conclusion

- model to rationalize the relatively lower marriage rate of educated women through the lens of gender identity norms
- explains why educated women's relative deficit in the marriage market reacts in opposite directions to improvements in their labour market opportunities in more versus less gender conservative societies
- why women's educational choices in the face of growing labour market opportunities might depend on the strength of these gender norms as they balance labour and marriage markets considerations

Why this matters

- lower fertility (in already low-fertility areas)
- lower returns to education $\rightarrow$ slower change in gender norms
- improvements in the labour market opportunities for skilled women should improve their marriage rates

Open areas for future research

- how labour market opportunities for skilled women interact with sticky gender norms
- endogenise the process of changing gender norms

See ya