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Fischer, Justina A.V.

University of Mannheim, University of Oradea

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Globalization, female employment, and regional differences in OECD countries.

Justina A.V. Fischer

University of Mannheim, University of Oradea

Abstract

Accounting for within-country spatial differences is a much neglected issue in many cross-country comparisons. This paper highlights this importance in this empirical analysis of the impact of a country's degree of social and economic globalization on female employment in 33 OECD countries, using a pseudo micro panel on 110'000 persons from the World Values Survey, 1981 to 2008. A traditional cross-country analysis suggests that only the social dimension of globalization, the worldwide information exchange, increases employment probabilities of women. However, when accounting for sub-national regional differences, the social dimension of globalization appears to work at the regional level only, while economic globalization (trade) increases female employment in a cross-country fashion.

JEL codes: C33, D83, F14, F16, F66, J16, J71, R23, Z13

Key words: Globalization, economic integration, labor market, employment, regions, social norms, communication, discrimination, gender, World Values Survey

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Contact:

Department of Economics, University of Mannheim, L7, 3-5, 68131 Mannheim, Germany; University of Oradea, Department of International Relations, Oradea, Romania. E-mail: mail@justinaavfischer.de

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1. Introduction

Employment of women is as much discussed topic since it has become obvious that not only the ordinary family profits from female contributions to household resources, but also that the welfare state is more stable when built on a broader and more diversified (tax) basis (e.g. EU, 2010). According to Becker (1971), if non-participation and non-employment of women is a result of their discrimination in the domestic labor market, a country's exposure to global competition through imports, exports, and FDI should mitigate this phenomenon: more women should be observed working as a country opens up. In addition, the exchange of information around the world might lead to self-criticism and re-assessment of cultural traditions, such as the traditional role model that attributes men the role of sole bread winners in the family. For this reason, greater exposure to worldwide information flows should equally lead to more women participating in the labor market.

This article investigates empirically into the impact of globalization on female labor market participation and female employment in OECD countries. This contribution focuses on two questions: 1) to what extent does country's integration into the global world lead to more women in paid employments and 2) are there within-country spatial differences in these globalization effects. I employ a pseudo micro panel for 33 OECD countries using 110'000 observations of the World Values Survey from 1981 to 2008, which I match with indicators of a country's economic and social openness; their variation across time and space allows for the identification of the effects of globalization. The World Values Survey also contains information on the sub-national region where the interview had been conducted which I use for the investigation into regional differences.

The contribution of this article to the existing literature is two-fold: first, this study defines globalization not only in terms of international exchange of goods and cross-national transfers of money - but also as exposure to worldwide information flows. Second, this paper makes an attempt to take account of regional heterogeneity in a thorough manner: Spatial variation within countries exists with respect to local culture, institutions, but also industry structures, and globalization may well exert differential impacts depending on the sub-national region the respondent lives in. This regional differentiation is only possible because, in contrast to most

previous cross-country studies, this analysis exploits individual-specific information around the world.

The results show clearly how important it is not to neglect spatial differences when investigating into globalization effects. The first cross-country estimations suggest that worldwide information flows increase the employment probability of women. In contrast, when we assume that globalization exerts differential effects by gender and regions likewise, it is economic globalization that raises female labor market activity. Overall, both social and economic globalization appear to increase the labor market participation of women, with the transforming forces of social globalization working more at the regional level and those of economic globalization more at the national level.

The paper is organized as follows: The next section summarizes some relevant literature and derives the testable hypotheses on globalization and female employment. Section 3 describes the empirical model. Sections 4 and 5 present the results, where section 5 pays particular attention to spatial differences. Section 6 concludes this paper.

2. Hypotheses

Empirical studies on the impact of trade and FDI on labor markets are manifold – most of them find a positive effect on general employment, particularly in cities (for a trade literature review see Fischer, 2012; for more spatial approaches, see Pastore and Ferragina, 2008). Female participation in the labor market might be enhanced by foreign trade for several reasons: first, trade might add a foreign demand to the already existing domestic demand so that more workers need to be employed, with female workers being drawn overproportionally, who were largely occupied with household production before the country opened up (for empirical evidence, see Ozler 2000). Second, Becker (1971) predicts that international competition forces firms to produce at efficient costs, making them act less discriminatory toward employing women by choosing any worker suited best for a position. However, Busse and Spielmann (2006) provide empirical evidence that, when facing fierce international competition, domestic firms substitute expensive male workers with female laborers who are less costly (as a result of their discrimination). Finally, international trade theory conjectures that economic integration generates technological spill-overs across countries – progress in household production technology, however, reduces the opportunity (time) costs for female employment (e.g., Goldin, 2006).

However, not only economic integration, but also the worldwide flow of information might play a decisive role for female labor market participation and employment; obtaining information about other countries through media and travel implies exposure to other cultures and values that challenge one's own beliefs and convictions (e.g. Huntington, 1996). Possibly, such exposure to alternative ways of living and philosophies aids women in finding new idols for identification and helps them in overcoming the traditional role model. Based on these arguments, we can establish the following testable hypothesis:

Hypothesis 1:

Economic integration, but also social (informational) globalization increases women's labor market participation and employment probabilities.

An important contribution of this paper lies not only in differentiating between the economic and the social forms of globalization, but also in taking into account within-country spatial heterogeneity. Previous studies on trade effects for labor markets combine aggregate measures of trade with aggregate measures of unemployment, neglecting regional effects (e.g. Felbermayer et al., 2011). Such studies, albeit being the current standard, assume implicitly that countries are homogeneous across subnational regions in their economic and social structures. That regional differences in social norms, industrial structures and production technologies (both at home and in manufactures) play a role for female labor market participation has been suggested by various authors (e.g. Goldin, 2006; Goto, 2006; Pastore and Talia, 2013). For example, Munshi and Rosenzweig (2006) have shown that men and woman in India react in their schooling choices completely differently to globalization, while Bettio et al. (2012) reveal that men and women in Europe show partly different reactions to the current economic crisis. Thus, I conjecture that the employment effects of globalization, are, again, not only different between men and women, but also across regions – I assume that such gender differences in behavior as reaction to globalization equally differ across regions. Hence, the second hypothesis could be formulated as:

Hypothesis 2:

The impact of globalization on female employment is different across sub-national regions.

3. Data

This study employs the World Values Survey (WVS, 2013), 1981-2008, an international survey that has collected in five waves individual-specific information on 350'000 persons. This data set includes their employment status, age, gender, household income, education, and marital status, the year of the interview, and the country of residence. Information on the sub-national region where the interview was conducted is available for about 80% of WVS interviewees, and, on average, each country was divided in about 10 regions. Labor market participation is defined as being 'employed' or being 'unemployed', that is actively seeking a paid position. 'Employed' are defined as persons either with a full-time position, part-time position or freelancers; the comparison group is then not only the unemployed, but also housewives and early retired persons – states of housewife or retirement might not be voluntary. The analysis is restricted to the group of persons who can be expected to be active in the labor market - that is the 18 to 60 years old. I have excluded pupils at schools, students at universities, old-aged persons, and disabled persons. Altogether, the sample of interviewees in OECD countries that are used in this analysis amount to about 110'000 persons in 33 countries; about 50% of the interviewees are female, and about 70% are employed (see also Table 1). When conducting the analysis by sub-national regions, I excluded regions that are too small in size (< 50 persons). Out of the original 700 regions, about 400 with 90'000 observations remain then for the regional analysis. The panel structure at the country level, in combination with the individual-specific information available in form of repeated cross-sections, allows me to build a pseudo micro panel.

To account for the degree of globalization, I employ two measures: the KOF index of economic globalization and the KOF index of social globalization (see Dreher et al, 2008). Both indices range from 0 (complete isolation) to 100 (complete openness). The index of economic globalization measures a country's exposure to the global economy; this index is based on statistical information on exports, imports, FDI, and immigrant laborers. The social index of globalization reflects a country's degree of exposure to the worldwide flow of information: it is based on statistics of travel activity, flows of tourists, exposure to US culture, media consumption, and Internet diffusion. Employed in their log-forms to account for a decreasing marginal impact as globalization rises, the correlation coefficient of economic with social globalization is 0.72 in the full sample and 0.76 in the regional sample. These moderate correlations allow the separate identification of the social and economic

dimensions of globalization. Both measures show sufficient variation across countries and time (see also Fischer and Somogyi, 2012). Table 1 provides summary statistics.

Table 1: Summary statistics

Variable	Obs.	Mean	Std.Dev.	Min.	Max.
Cross-country regression sample (Baseline) (Table 2)					
Employed	113330	0.721	0.448	0	1
Active	113330	0.791	0.406	0	1
Log(economic glob.)	113195	4.212	0.212	3.348	4.579
Log(social glob.)	113195	4.189	0.248	3.491	4.502
Female	116880	0.525	0.499	0	1
Age	116880	37.947	11.328	18	59
Regional regression sample (Table 3)					
Employed	87882	0.725	0.446	0	1
Log(economic glob.)	86563	4.222	0.216	3.348	4.579
Log(social glob.)	86563	4.208	0.248	3.491	4.502
Female	90248	0.527	0.499	0	1
Age	90248	38.210	11.312	18	59

4. Methodology

The empirical analysis estimates Logit regressions on the probability of being gainfully employed (participating in the labor market) compared to being unemployed (inactive in the labor market). The focal variables are the two measures of economic and social globalization; in order to account for their female labor participation effects, these two globalization measures have been interacted with the respondent's gender.

The baseline specification takes the following form:

$$(1) y_{its} = \alpha + \text{globalization}_{ts} \times \text{female}_{its} \beta + X_{its}' \gamma + FE_t + FE_s + \varepsilon_{ist}$$

Where y_{its} is a dichotomous indicator of labor market participation of individual i in year t in country s . FE_s , FE_t represent sets of country- and year-specific fixed effects that control for unobserved shared characteristics such as culture and history, but also global financial market

shocks. In the case of stable OECD countries, country fixed effects also account for population size and political institutions. X_{its} includes (non-linear) age as individual-specific control, and ε_{ist} is an error term clustered within country-years - cluster standard errors are robust to arbitrary heteroskedasticity and arbitrary intra-group correlation. $female_{ist}$ and $globalization_{ts}$ in country s at year t are both estimated as direct effects, and in addition, as their interaction term (expressed by 'X') - it is this interaction term I am interested in. Logit estimations yield coefficient vector β that represents the direction of these effects.

Further model extensions include adding a set of individual-specific controls to X_{its} such as household income, education, and marital status that might all be impacted by economic and social globalization; interacting country fixed effects with year fixed effects allows to control for unobservable within-country changes of institutions or the macroeconomic state. Estimations with interacted fixed effects cause multicollinearity with respect to the two globalization measures – for this reason, I report throughout all tables only their interactions with gender.

Without instrumenting globalization or exploiting a natural experiment setting, causality is derived from the inclusion of country-specific and time-specific fixed effects (and their interactions) only. On the other hand, the idea of a reversed causality appears rather unrealistic: in that case, increased (female) labor market participation should have triggered a demand for more trade and higher economic integration.

5. Findings

Table 2 presents the results for the impact of economic and social globalization on the probability for women to be employed or to be actively participating in the labor market, as compared to men - this heterogeneity of globalization effects by gender is reflected by the two interaction terms. Column 1 presents the estimates of the baseline model for employment, column 2 for labor market participation. Columns 3 and 4 repeat this analysis but add marital status, household income, and educational attainment as socio-demographic controls to the baseline model, considerably improving the model fit.

Table 2: Globalization and female employment in OECD countries, 1981-2008

	(1)	(2)	(3)	(4)	(5)	(6)
	Employed	Active	Employed	Active	Employed	Active
Female	-10.734**	-12.514**	-11.152**	-13.206**	-11.478**	-13.566**
	[9.44]	[6.46]	[9.25]	[6.46]	[9.39]	[6.34]
Female X econ. glob.	0.318	0.014	0.189	-0.096	0.301	-0.013
	[0.79]	[0.02]	[0.46]	[5.01]	[0.73]	[0.02]
Female X social glob.	1.865**	2.412**	2.094**	2.683**	2.056**	2.681**
	[6.21]	[4.54]	[6.62]	[5.01]	[6.47]	[4.86]
Age	yes	yes	yes	yes	yes	yes
Household income, marital status, education	no	no	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes	yes
Country-specific time fixed effects	no	no	no	no	yes	yes
Observations	109657	109657	109300	109300	109300	109300
Countries	33	33	33	33	33	33
Country-years	110	110	110	110	110	110
Pseudo R2	0.1520	0.2393	0.2025	0.2870	0.2090	0.2904

Notes: Logit estimations with standard errors clustered at the country-year level. Analysis is restricted to the age group of the 18 to 60 years old. 'Employed' refers to doing full-time employment, part-time employment or freelance work, with unemployed, housewives/housemen and early retired serving as comparison group. 'Active' includes both employed and unemployed. '***', '**' indicates significance at the 1 percent and 5 percent levels, respectively.

Table 2 reveals that globalization effects differ across genders – as the significant interaction term estimates indicate. As a country becomes more exposed to worldwide flows of information, the probability of being active in the labor market and working in gainful employment is increased for women, all other things being equal. This finding is consistent with the hypothesis of a social norm change – triggered by information about other countries and cultures putting the traditional role model into question.

Through their membership with OECD the governments of the countries in this study are obliged to pursue policies of economic openness and trade. Probably owed to their already high degree of economic globalization at the beginning of this study period in 1981, economic integration does not affect employment probability or labor market participation of women.

Finally, women appear, in general, less likely to be active or employed than men, either caused by the traditional role model or caused by periods of motherhoods.

Unobserved changes in institutions or economic development can be accounted for by interacting country FE and time FE (columns 5 and 6) – a method which has more and more become standard for estimating panels; the estimates on the interaction terms of ‘globalization’ with ‘being female’ appear robust to this change in model specification.

Altogether, social globalization increases female labor market participation and employment probability compared to that of men. These findings support my hypotheses of a social norm revision caused by worldwide information exchange. In the next section I will investigate into to what extent differences in reaction to these changes across sub-national regions might drive these results.

6. Regional differentiation

In order to understand to what extent there are within-country spatial differences with respect to the above-described employment effects of globalization for women, Table 3 adds varying sets of interaction terms that account for different forms of within-country regional heterogeneity. Column 1 replicates the baseline model of Table 2, accounting for unobserved heterogeneity at the regional level, using region fixed effects in place of country fixed effects. ‘Region’ is recorded in the World Values Survey as ‘region where the interview is conducted’, resulting in more than 400 entities with at least 50 interviewees (see section 3). In most countries, these regions are politically defined, reflecting ‘states’ or ‘departments’.

Possibly, these regions differ with respect to the structures of their economies: some regions might have a large resource extraction industry, others might export mainly agricultural goods, while, again, others might specialize in providing financial services. Therefore, columns 2 and 3 test the idea that unspecific globalization effects for general employment are heterogeneous across sub-national regions. Column 2 for social globalization and column 3 for economic globalization, respectively, each adds interaction terms between region fixed effects and the corresponding measure of globalization. Obviously, taking account of spatially differential effects in this unspecific way supports the previous finding of the female employment-increasing impact of social globalization, and that of the negligible influence of economic globalization (see also column 1).

Table 3: Globalization and Employment in OECD countries, 1981-2008: Accounting for regional differences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Employed	Employed	Employed	Employed	Employed	Employed	Employed
Female	-11.945**	-12.255**	-12.279**	-14.915**	-14.851**	-15.704**	-16.336**
	[8.53]	[8.49]	[8.42]	[6.09]	[6.04]	[6.60]	[6.80]
Female X econ. glob.	0.251	0.305	0.305	2.491*	2.319*	2.564**	2.772*
	[0.59]	[0.71]	[0.70]	[2.48]	[2.20]	[2.61]	[2.57]
Female X social glob.	2.206**	2.221**	2.228**	0.743	0.899	0.852	0.794
	[4.70]	[4.69]	[4.69]	[0.56]	[0.66]	[0.66]	[0.59]
Way of accounting for regional differences	Traditional micro pseudo panel	Social glob. X Region FE	Economic glob. X Region FE	Female X social glob. X Region FE	Female X economic glob. X Region FE	Female X social glob. X Region FE Economic glob. X Country FE	Female X economic globalization X Region FE Social glob. X Country FE
Age	yes	yes	yes	yes	yes	yes	yes
Household income, marital status, education	yes	yes	yes	yes	yes	yes	yes
Region FE	yes	yes	yes	yes	yes	yes	yes
Time FE	yes	yes	yes	yes	yes	yes	yes
Obs.	83941	83941	83941	83941	83941	83941	83941
Countries	33	33	33	33	33	33	33
Country-years	77	77	77	77	77	77	77
Pseudo R2	0.1866	0.1938	0.1933	0.1955	0.1954	0.1984	0.1979

Notes: Logit estimations with standard errors clustered at the country-year level. Prior to running the regressions, regions with no variation in the dependent variable have been excluded. Analysis is restricted to the age group of the 18 to 60 years old. 'Employed' refers to doing full-time employment, part-time employment or freelance work, with unemployed, housewives/housemen and early retired serving as comparison group. '**', '*' indicates significance at the 1 percent and 5 percent levels, respectively.

Columns 4 and 5 go one step further by assuming that the specific impact of globalization on *female* employment might equally depend on the region a woman lives in: Regions differ not only with respect to the structure of the economy (see above), but also with respect to culture and institutions. Pastore and Tenaglia (2013) have shown that personal religious beliefs determine labor market participation decisions of women, while Munshi and Rosenzweig (2006) suggest that women and men react to a globalizing economy in different ways. Consequently, people's values and attitudes in a region might play an important role for how globalization impacts women compared to men. In addition, also regional differences in production technologies and specialization might impact how globalization affects specifically female employment; for example, economic globalization might increase the demand for goods produced with a labor-intensive technology in certain regions, increasing the demand for workers in these specific regions, but not in others, resulting in less discriminatory practices toward female employees in those regions (e.g. Becker, 1971). To account for these regional differences, columns 4 and 5 add to the baseline model the triple interaction terms of 'female' with 'globalization' and 'region'. Now we observe a switch in the results: at the cross-country level, the female employment effect appears entirely driven by economic globalization, while, at this level, social globalization plays no decisive role.

Columns 6 and 7 combine both approaches of Tables 2 and 3: they account for, first, differences across countries regarding how globalization impacts employment as such, and, second, differences across regions with respect to how globalization impacts women. These specifications support the findings of columns 4 and 5. Obviously, Table 3 reveals that regionally differentiated globalization effects play a role for female employment only if we take account of their additional heterogeneity by gender.

6. Conclusion

Most studies on the (un)employment effect of economic integration suffer from two shortcomings: first, they assume countries to be homogeneous entities, neglecting the presence of within-country regional differences. Second, world-wide integration goes beyond pure exchange of goods, services and money: today's world is also shaped by growing cross-linkages that transport information about foreign people, countries, and cultures. The present empirical analysis on the impact of economic and social (informational) globalization on female employment in OECD countries tries to remedy both shortcomings.

Using occupational information on 110'000 persons in 33 OECD countries between 1981 and 2008 obtained from the World Values Survey, I construct a pseudo micro panel that I match with measures of social and economic globalization at the country level – individual's employment probabilities are estimated with Logit.

My results clearly show that taking account of structural and social differences across sub-national regions impacts how the general impact of economic and social globalization on female employment is assessed. The traditional model that exploits cross-country variation only suggests that the worldwide information flows (triggering social norm changes) bear the main effect on the higher employment probability of women – while international trade exerts no such gender-specific employment effect. In contrast, when assuming that globalization exerts differential effects by gender and regions likewise, it is solely economic globalization that raises female labor market activity and employment.

These different findings do not have to be regarded as contradicting each other – on the opposite, they complement each other. One possible interpretation is that both social and economic globalization increase female employment, both through social norm changes and increased demand for female laborers through trade. Apparently, the transforming forces of social globalization work more at the regional level and those of economic globalization more at the national level. This is an important insight that bears considerable implications for national social policies aiming at normative changes, which might be more effective when taking account for spatial differences, and when being decided and implemented at the regional level.

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