

Impact of Migrant Remittances on Economic Empowerment of Women: A Macroeconomic Investigation

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ABSTRACT: The present research has the ambition to contribute to the literature by providing a better visibility on the impact that remittances can generate in the level of women remained in the country, both in terms of economic activity and the status of women in households. To this end, this work mobilizes macroeconomic aggregate data to verify the impact of remittances on women activity at the international level. This work involves the macroeconomic data of a sample of 58 countries observed from 1999 to 2010. The results of the macroeconomic approach are substantially different when going from one region to another. In particular, the presented estimates show that the effect of transfers on female labor supply depends on the studied area. The complexity of the studied phenomenon shows the existence of contradictory effects, in which case the local and regional characteristics may play an important role.

Keywords: remittances; economic empowerment; women; migration

JEL Classifications: C13; F22; O11

1. Introduction

The level of the economical and social development of a country does not only depend on its stock of human resources but on how this stock is used. It is imperative that an optimal allocation of productive capacities of a certain country or society is created by management systems whereby the best skilled of both men and women can flourish. Practically, women suffer from disparities in all areas compared to men. The indicator on gender differences of the World Economic Forum (Gender Gap Index, GGI) has shown that countries with better gender equality are more competitive and grow faster.

On migration issues, gender relations are particularly dynamic and can result in some interpretations which differ according to various influences that can be combined in an interpenetration of the social, cultural, temporal and other components characterizing the environment of the individuals to be studied. Migrants have to manage carefully themselves in a duality which is often antagonist. A great part of these values is to express the commitment to the origins while the other part is linked with the attempts to integrate within the host country.

Studies on migrant remittances are generally made from a perspective that implicitly considers that the variable of gender makes just little difference to understand the impact of remittances. To what extent the transfers of money contribute to change the behaviors of discrimination against women and take steps towards empowering them? The report *Women and International Migration* of UNFPA (2006) underlines that migration and remittances may have positive contributions although the risk of seeing new vulnerabilities is still remained; particularly by strengthening traditional roles the extension of social control of family.

In few studies conducted on this issue at the international level (Rodriguez and Tiongson (2001) for Philippines, Funkhouser (1992) for Nicaragua), it is often considered that the transfers lead to reduce the employment of the family members, especially of women, according to neoclassical model between business and leisure (Killingsworth, 1983). We fail then to take into consideration other

effects of migration and remittances on the labor supply by householders and their various components; especially when the household in question is charged to pay off debts or other costs related to migration, or when it is necessary to compensate for the loss of income due to migration. The same goes with the migration of a husband/ father which gives better opportunities to women and girls in education and autonomy, and therefore in getting access to labor market.

The current research aims to contribute to a better visibility of the impact caused by women who remain in the country upon both the economic activity and the status of women in the household. To do this, this work involves the macroeconomic data of a sample of 58 countries observed from 1999 to 2010. The macroeconomic data aggregated to verify the impact of remittances on the participation of women at the international level.

This paper is organized as follows. The second part presents a literature review on the impact of remittances on the level of the economic empowerment of women. The third present data and methodology. The fourth leads to an empirical analysis. The fifth is a conclusion.

2. Theoretical Issues and Empirical Evidence of the Impact of Remittances on the Participation of Women

Studies on women's participation in economic activity have suggested that women are disadvantaged almost everywhere in the world. At least four theories tried to encompass this issue: the neoclassical theory, human capital theory, the theory of survival strategies, and the theory of social reproduction. From an economic perspective, the neoclassical believe that the continuing real wage growth increases the labor supply of women like men. Some empirical studies (Bowen and Finegan, 1969; Goldin, 1990) have questioned this key assumption. For them, the decision of female activity is less sensitive to changes in wages than that of men. Apart from the monetary ones, other factors influence the decision of female activity (Moschion, 2007).

According to the human capital theory, the level of education is a factor that explains the level of wages; it is also the main determinant of labor supply. Indeed, the level of human capital detained determines the access of an individual to the most profitable sectors (Brilleau et al., 2005). In the developing countries, low investment in human capital held by women could provide an explication for their low participation in the economic activities. Goldin (1990) has linked the decision of female activity to educational attainment and the number of dependent children. In a more recent study, Goldin and Katz (2002) emphasizes on the role of the contraceptive methods in reducing fertility and therefore increasing the participation of women.

The theory of survival strategies has stated that the decision to participate in the economic activities of women depends heavily on the decision of the household. The allocation of available time between market labor activities and domestic work of each household results from maximizing their regulatory function.

The proponents of the social reproduction theory of Bourdieu (1979) argue that the low economic activity level of women is resulted from the women's subordinate position and the sexual division of work. Women specialize in non-market domestic production while men take the responsibility of market activities (Sacks, 1979; Dussault, 1987). Extending the data of Angrist and Evans (1998) have showed that the gender of the first two elders of an American mother aged between 21 and 35 influences strongly her decision for additional kids; which could also affect the job offer.

The literature on the relationship of migration and labor supply among migrant households in the country of origin has shown that the effect remains relatively unknown (Fajnzylber and Lopez, 2007). On the one hand, there is a negative effect on the participation of household members in the labor market; insofar as the received net foreign remittances are increased for leisure and at the cost of labor as they grow to increase their reservation wage. It is an income effect which leads to a reduction in labor supply. On the other hand, there is another effect that counteracts the first: the migration of some household members out of the country results in a direct reduction in labor supply, which causes a downward pressure on salaries; which tend to ultimately increase the labor supply particularly in areas of high migration. This is a substitution effect between leisure and work in favor of work.

In addition, for some households whose members have migrated recently, given that there will be a time delay before starting to receive transfers, non-migrant members may need to work or look for jobs to compensate for the loss of earnings due to a recent departure of an active member.

For what concerns the impact of remittances on non-migrant women, it is often considered that migration improves the condition of women in their countries; it empowers them and makes them autonomous (Ait Hamza, 1995; Fadloulah et al., 2000). The Eurostat survey in 2000 concludes with an affirmation that non-migrant women play an enhanced role within the country. It considers that one of the major direct effects of emigration is the growth in number of female-headed households due to the departure of their husbands. Also, this phenomenon has particularly a strong presence among recent migration households and in the cities where social traditions and the extended family are less burdensome and less preventing women to take the leadership of household. Emigration has thus revealed itself as a contributing factor of transformation to gender and familial relations in relevant communities.

Van Rooij (2000) has showed in his study on women of the migrants in Todra Valley that remittances are often sent to the male head of the family; and that women who live in the extended family have less control over funds. However, women of the migrants may seek to leave the social control of the extended family to be free and live in nuclear family. These women become heads of households and therefore more dependent to take decisions related to the education of children, especially girls.

Supported by remittances, women of the migrants may also have the possibility to employ other women or men for domestic and agricultural tasks in order to alleviate their physical burden (Ait Hamza, 1998). By doing so, they improve their situation and status in comparison with other women, and can sometimes feel freer to seek employment, to work and to engage in other occupations. While this argument is dependent on the geographical area and is therefore a socioeconomic study of a few rural towns; and the methodology used is survey with non-representative sample. The proposed survey will be used to test such assertions that we transformed into hypotheses.

De Haas (2007) has argued that these developments do not reflect a real change in the traditional gender relations. Indeed, women are still doing the same tasks as before. In addition, the new responsibilities of these women are not perceived by them as a form of freedom but as a burden. Moreover, their gained status of the head of household is rapidly lost upon the return of the migrant husband.

A positive note is nevertheless highlighted jointly by Van Rooij (2000) and De Haas (2007). It is that the daughters of migrant families have better access to education thanks to the egalitarian use of remittances by women; which may foreshadow deeper changes in the future particularly in terms of giving women access to the labor market and entrepreneurship.

Regarding the effects of remittances according to the gender of emigrant, immigrant women seem to send a greater proportion of their income than men, even if they are less paid or less qualified. The study conducted in 2000 by the International Research and Training Institute for the Advancement of Women (INSTRAW) and the International Organization for Migration (IOM) have showed that Bangladeshi women who work in Middle East send almost three quarters of their income. The study also has showed that half of the remittances sent by these women (56%) are for social purposes (food, health care, education). Women are in this case more willing to invest in their children than men who tend to spend more on goods (TVs and cars) or to buy real estate and livestock.

Lu and Treiman (2007), in the case of South Africa, considered that remittances have a positive effect on gender relations, especially in reducing in-family inequalities and empowering women staying in the country. This effect might be combined with the better access of women to the labor market and in the payroll employment; which reinforce their autonomy and independence (Cortes, 2007).

In a recent study on the Mexican case, Cox-Edwards and Rodriguez-Oreggia (2009), after a methodological renewal (propensity score matching), found that transfers have limited impact on the participation of household members who stayed in the country. This result, even if it does not take into account the gender dimension, represents a positive step since the studies on the Mexican case tend to consider that the remittances of the migrants have a negative impact on economic activity.

3. Data and Methodology

3.1 Sample and data

For the estimation of the macroeconomic models proposed here, we have chosen a sample of 58 countries belonging to five groups of countries: the Middle East and North Africa (5 countries),

Europe and Central Asia (13 countries), Latin America and the Caribbean (14 countries), East Asia and the Pacific (4 countries) as well as the economically advanced countries. The choice of these countries has been driven by the availability of data for all the variables of interest. The list of the selected countries is contained in the Annex. We have relied on one single database source; which is the annual data of the *World Development Indicator* (2010). The period under study covers the years from 1999 to 2010.

3.2 Macroeconomic models

So as to address the research questions raised earlier, we test the following specifications:

$$lab_par_{it}^j = \alpha_0 + \alpha_1 transf_{it} + \alpha_2 X + \mu_i + \varepsilon_{it} \quad (1)$$

$$Empl_{it}^j = \beta_0 + \beta_1 Transf_{it} + \beta_2 X + u_i + \varepsilon_{it} \quad (2)$$

$$Vul_{it}^j = \delta_0 + \delta_1 transf_{it} + \delta_2 X + u_i + \varepsilon_{it} \quad (3)$$

$lab_par_{it}^j$ is the rate of the labor force participation, j (the percentage of population j aged 15 and over), for country i (i = 1, 2, 3, ..., 58) at the date t (t = 1999, 2000, ..., 2010). j means woman, man, or the total population. For example: $lab_par_{it}^f$ is the rate of the labor force participation, female (% of female population aged 15 and over). $Empl_{it}^j$ means the female employment rate. Vul_{it}^j is the rate

of female vulnerable employment. u_i is a specific individual effect specific to country i and ε_{it} is an error term. The *Transf* variable measures the level of transfers approached by remittances received from workers in relation to GDP.

The matrix X consists of other variables that may influence the level of economic activity:

- GDP per habitat: It represents the source of the development level of the country. We use the logarithm of GDP per habitat rated *lgdp*
- The human capital level is measured by the logarithm of gross enrollment rate in secondary school. It is noted as *leduc*.
- The investment rate is measured by the logarithm of gross fixed capital formation noted as *idfcf*
- The investment rate is measured by the logarithm of gross capital formation.
- The growth rate of population is measured by the population growth rate noted as *pop_gr*
- The inflation rate is measured by the GDP deflator noted as *inf_def*
- The development of the financial system is measured by loans granted to the private sector relative to GDP noted as *dev_fin*
- Government expenditures are measured by government spending relative to GDP rated as *dep_gou*
- The degree of openness of the economy measured by the ratio of imports and exports to GDP is marked as *ouver*.

In the literature, we have stated that the level of human capital and the level of fertility can influence the level of female participation. Equations (4) and (5) specify the indirect impact of remittances on the decision of women activity across its impact on the fertility rate and the level of human capital accumulation. Models (4) and (5) are written as follows:

$$leduc_{it} = \alpha_0 + \alpha_1 transf_{it} + \alpha_2 X + u_i + \varepsilon_{it} \quad (4)$$

$$Fer_rate = \beta_0 + \beta_1 transf_{it} + \beta_2 X + u_i + \varepsilon_{it} \quad (5)$$

To analyze the determinants of remittances, we specify the following model:

$$transf_{it} = \delta_0 + \delta_1 X + u_i + \varepsilon_{it} \quad (6)$$

3.3 The methods of estimating macroeconomic models

The selected equations above might have different specifications according to the hypotheses made about the constant and the error term. Within this context, several factors may affect the dependent variable and yet some of them are not considered in the regressions. They are taken into account in the analysis of the residues. In the analysis of data panel, three different factors were taken into consideration in the analysis of the residues. The factors that affect the dependent variable in different way depending on date and/or country; have the same influence on all the countries whereby

the impact depends on date (time effect); those reflect structural differences among some countries whatever is the date (individual effect). Individual effects are either fixed or randomized.

The first test to be carried is therefore the control of the existence of specific individual effects. The test of Fisher, which is conducted for all estimates, confirms the existence of specific individual effects. After checking for the existence of individual effect, we have to choose either a fixed effect model or a random effects model. The Hausman test (1978) is configured to choose the appropriate specification. All of the resulting estimates are conducted by the fixed effects method unless otherwise indicated.

4. Results and Discussion

4.1 Initial statistics and correlations

Table 1 summarizes the main medium of each group of countries as well as the average of the whole sample and their standard deviations. This Table displays several findings.

We have observed that the female labor force represents on average almost 50% of the female population aged 15 and over. It reaches a maximum level of 71.7% and a minimum level of 10.8%. For female employment rates, the proportion of the female population with a job is 45.34% with a maximum threshold of 69.9% and a minimum threshold of 8%. Concerning the remittances, they represent on average 2.26% of GDP with a maximum of 22.3% and a minimum of 0.00289%.

Table 1. Descriptive Statistics

Variable	MENA		Developed Countries		Latin America		Europe and Central Asia		East Asia and Pacific		Entire sample	
	average	SD	average	SD	average	SD	average	SD	average	SD	average	SD
lab_part_f	35,02	15,25	51,58	9,38	49,76	7,10	51,52	5,58	52,26	7,78	49,75	9,87
lab_part_t	52,21	7,29	60,02	6,33	64,73	4,78	58,37	5,26	66,79	3,99	60,58	6,82
empl_f	31,71	15,13	47,98	9,82	44,31	7,29	46,06	5,52	49,15	8,67	45,34	10,03
empl_t	47,73	8,11	56,05	7,07	59,10	5,29	52,27	5,42	63,01	5,01	55,70	7,36
vul_f	30,16	31,53	30,72	28,96	51,44	20,43	37,66	27,64	48,64	17,77	38,48	27,75
vul_t	18,12	18,84	12,03	8,61	35,84	11,16	19,63	15,67	45,98	16,57	22,33	16,96
fert_rate	2,45	0,88	1,69	0,28	2,62	0,49	1,41	0,28	2,58	0,71	1,98	0,67
gdp_perca	15440	9600	30996	10735	8217	2935	13210	5483	6008	3531	18447	12798
pop_gr	1,57	0,67	0,69	0,59	1,35	0,53	-0,16	0,61	1,52	0,51	0,79	0,84
Educ	85,61	20,56	109,35	15,31	77,47	12,26	92,64	6,22	71,52	9,71	93,25	19,29
Transf	5,78	7,56	0,74	0,79	3,34	4,29	1,97	2,16	3,44	4,61	2,26	3,78
Obs	60		264		168		156		48		696	

Source: Authors' calculations, WDI (2010)

The average participation rate of women in MENA region (35.02%) is less than the average of the remaining regions as well as of the whole sample. The same observation applies also on the average female employment rates since only 31.71% of women, who reach the legal working age, have a job against an average of 45.34% for the entire sample. Across the MENA region, the employment of women has long been associated with sociocultural factors. Following the example of the MENA countries, Morocco records lower participation rates of women in the labor market compared to other developing or developed countries. In 2009, this rate equals 60% in Brazil, 43% in Mexico and 42% in Chile; while it stands at 26% in Morocco and Tunisia, 23% in Jordan and only 17% in Saudi Arabia.

The area of the East Asia and Pacific appears to be the most disadvantaged of the whole sample with an average GDP per capita of 6008 dollar, a value that is far below the averages of developed countries, countries of MENA and countries of Europe and Central Asia (respectively 30996, 15440 and 13210 dollars).

The gross enrollment rate in secondary education in advanced countries (109.35%) is higher than the average of all other regions. The developed countries have invested heavily in human capital since the XIXth century. The lowest enrollment rate in secondary education (71.52%) is observed in the region of East Asia and the Pacific. The good level of enrollment in secondary in the MENA region (85.61%) may be due to the good performance of other MENA countries included in the sample. In this region, the weakest rates were recorded in Morocco.

The highest average share of transfers ,relative to GDP, is found in the group of MENA countries (5.78%), a value which is largely due to that observed in Jordan (Jordan, during the whole studied period, the share of transfers relative to GDP varies between a minimum value of 13.77% in 2010 and a maximum of 22.39% in 2001). In addition, the transfers represent, on average, only 0.74% of GDP in developed countries and 1.97 in countries of Europe and Central Asia. For Latin America and East Asia and the Pacific, this share is respectively 3.34% and 3.44% values that are slightly above the average of the entire sample (2.26%). This heterogeneity in the distribution of transfers by region could have different implications for the estimation of different specifications.

The examination of the correlation matrix of the main variables (table 6) shows that the rate of active female population is negatively and significantly correlated with the fertility rate (-0.133), the rate of population growth (-0.158) and the transfers (-0.39). It is positively correlated with GDP per capita (0.182) and the level of accumulation of human capital (0.285). The same is true for the female employment rate. Vulnerable employment of women is negatively and significantly correlated with GDP per capita (-0.398), while the level of human capital (-0.37) is positively and significantly correlated with the fertility rate (0.144) and the transfers (0.167).

4.2 Estimation results of macroeconometric models and interpretation for all countries in the sample

The results presented here relate to the different specifications that we learned. The estimation results of model (1) are shown in Table 2 .They show a negative and significant impact of migrant remittances on both the female activity rate (-0,214) and the total (-0127). However, this impact is not significant for the rate of the male active population and it makes the ambiguous impact of remittances on the activities of men. By examining the impact of human capital on the level of activity, we find that this impact is positive and significant only for men (1.044).The insignificant effect of education on the level of women may be the result of other sociocultural factors dominant in some countries of the sample and which hinder women's participation in economic activity. As expected, a higher level of GDP per capita increases the proportion of active women.

Table 2. Estimation of the remittances' impact on activity rate, total sample

	lab_part_f		lab_part_h		lab_part_tot(*)	
	Coef.		Coef.		Coef.	
Transf	-0.2143396***		-0.0573169		-0.1278303***	
lgdp_perca	3.312536***		-1.463365***		.459734	
Leduc	1.044752		-3.388695***		-1.1781*	
Lgfcf	-.9576775		1.68132***		.3153407	
pop_gr	-.7582399***		.4992994***		-.0648353	
inf_def	.0603788***		.0360578***		.045719***	
dev_fin	.0324071***		.0046864**		.0204588***	
dep_gou	-.0948866*		-.079218***		-.1097785***	
Ouver	-.0028573		-.0122845***		-.0087186*	
cons	16.43849***		97.71015***		61.72545***	

Note: *Estimation by the method of random effects, Coef: Coefficient

Source: Authors' calculations

Based on the results in Table 3, it appears that transfers impact negatively and significantly female employment (- 199), unlike the insignificant impact of human capital on the level of women activity. The estimation of model (3) whose results are reported in Table 4 suggests that remittances

significantly reduce vulnerable employment for both women and men. This can probably be explained by the fact that the recipients of transfers reduce the supply of unpaid family work.

Table 3. Estimation of the impact of remittances on employment rates, entire sample

	empl_f		empl_h		empl_tot	
	Coef.		Coef.		Coef.	
Transf	-.1995392***		-.0855526		-.134653**	
lgdp_perca~a	6.1713***		3.705944***		5.214326***	
Leduc	1.653763*		-2.454254***		-.5100202	
Lgfcf	1.952788***		6.028237***		3.781039***	
pop_gr	-.4051377*		.9552017***		.2775063	
inf_def	.0667754***		.0646235***		.0662815***	
dev_fin	.0276809***		-.0103001***		.009249***	
dep_gou	-.230632***		-.3104459***		-.2644321***	
Ouver	-.0127166*		-.0176442***		-.0149707***	
_cons	-23.66947***		30.59098***		1.540092	

Source: Authors' calculations

Table 4. The impact of Estimation of remittances on the rate of vulnerable employment

	vul_f(*)		vul_h		vul_t	
	Coef.		Coef.		Coef.	
Transf	-.1498834*		-.3575311***		-.3753779***	
lgdp_perca	-6.180663***		-4.905062***		-5.782356***	
Leduc	-.6218375		-1.047683		-.3487185	
Lgfcf	.2276253		-1.648155***		-.584867	
pop_gr	.1759122		.9004938***		.7338084***	
inf_def	.0891148***		.0480965***		.0597974***	
dev_fin	.0020835		-.0039175		-.0059508	
dep_gou	-.0249679		.0589042		-.0003323	
Ouver	-.0168276**		-.0181232**		-.0061121	
_cons	101.0904***		80.00731***		81.88827***	

Note: *: Estimation by the method of random effects, Coef: Coefficient

Source: Authors' calculations

Overall, the obtained results corroborate those obtained by Chami et al. (2003) for whom the transfers have a global negative effect on labor supply. Our results show that this negative effect is mainly found among women. The results of the estimation of models (4) and (5) are reported in Table 5. The results show that remittances reduce the fertility rate very significantly (-0.019). While in the case of the level of accumulation of human capital, the impact is not significant. This leaves once again some ambiguity regarding the ability of transfers to create incentives for schooling. Migration of household head would disrupt family life and the possibility of joining the head of household deters investment in education. Many empirical studies corroborate this finding (McKenzie, 2005; Taylor and Mora, 2006; Özden and Schiff, 2006).

The estimation results of the model (6) are shown in the same table 5. As expected, the level of GDP per capita and the degree of openness of the economy positively and significantly affect the level of transfers (0.007). The effect of the rate of population growth is negative and statistically significant (-0.227). This against-intuitive result goes against the assumption that a higher rate of growth increases the probability of emigration and consequently the volume of transfers. Furthermore,

no conclusions can be drawn regarding the direction of causality between remittances and human capital.

Table 5. Estimate of the impact of transfers on the level of education, and fertility rates, whole sample

	Education (*)	fert_rate	Transf
Transf	.0013725	-.0195767***	-
lgdp_perca~a	.1967988***	.039955	.9581346**
Leduc		-.6571636***	.1845437
Lgfcf	-.010616	-.0536719	-.2229204
pop_gr	-.0525725***	.115073***	-.2275615*
inf_def	-	.0002958	.0001382
dev_fin	-	-	-.0010953
dep_gou	.0024253	.0070399**	-.0258742
Ouver	-.0007206***	-	.0073178*
_cons	2.727164***	4.556432***	-7.00425**

Note: *: Estimation by the method of random effects, Coef: Coefficient
Source: Authors' calculations.

The results obtained so far concern 58 countries belonging to five groups of heterogeneous countries. To account for possible heterogeneity between regions, we estimated the models (1), (2), (3) and (6) for each group of countries. Variables to explain the models (1), (2) and (3) concern only women. Our choice is based on the fixed-effects models for two reasons. These allow first to take into account individual heterogeneity specific to each country. Then, these models offer a more interesting and easy analytical framework to implement.

Table 6. Correlation Matrix

	lab_part_f	empl_f	vul_f	fert_rate	gdp_percapa	pop_gr	Educ	transf
lab_part_f	1							
empl_f	0,971***	1						
vul_f	0,05	0,01	1					
fert_rate	-0,13***	-0,13***	0,14***	1				
gdp_percap~a	0,18***	0,25***	-0,39***	-0,42***	1			
pop_gr	-0,15***	-0,12***	0,001	0,74***	-0,07**	1		
Educ	0,28***	0,31***	-0,37***	-0,44***	0,66***	-0,26***	1	
Transf	-0,39***	-0,39***	0,16***	0,49***	-0,38***	0,2***	-0,38***	1

Source: Authors' calculations

4.3 Estimation results and interpretation of macroeconomic models by region

4.3.1 MENA region

The estimation results of models (1), (2), (3) and (6) using the fixed individual effects for countries in the MENA region are shown in Table 7. Regarding this method, the F-test valid the model specification. As it can be noticed, the coefficients of determination are generally satisfactory. On this criterion, the adjustments by using the fixed-effects are acceptable.

In general, the effect of remittances on the female labor supply is not significant. Probably, in this region, transfers could be considered as a simple income that are used to cover consumption expenditures, and therefore do not allow a significant impact on the economic activity of women in the exporting countries of migrants (IMF, 2005). In against-intuitive way, the level of human capital accumulation significantly reduces the rate of active female population and the female employment rate (-14.58 and -14.73 respectively).

The rate of demographic growth has a negative and significant effect on the supply of female labor (-0.98 for the rate of active female population and -0.92 for the female employment rate). Indeed, population growth means more dependent children and therefore more time to devote to domestic work which contributes to the reduction of female labor supply.

Table 7. Estimated model (1), (2) and (3) and (6) by the method of the fixed individual effects, MENA

	lab_part_f	empl_f	vul_f	Transf
	Coef.	Coef.	Coef.	Coef.
Transf	.0652495	.2522889	.0184132	
lgdp_perca~a	16.69998***	20.32655***	-2.816332	-16.28918***
Leduc	-14.58092***	-14.73253***	-.3824062	14.23792***
lgfcf	-4.225366**	-3.308908*	-.3834188	-1.067668
pop_gr	-.9837163***	-.9219806*	-.1141063	.2587925
inf_def	.0011031	-.003113	-.0949721	-.0615516
dev_fin	.0399223**	.0342376**	-.0003668	.0291559***
dep_gou	.4399205***	.3083555	.1150638	-.2606578
ouver	-.0099345	-.0230689	-.024177	.028515
Israël	.0384454	-1.422595	-66.39129***	4.727235**
Jordanie	-8.149376	-6.243922	-71.92809***	-3.251482
Malte	-16.90785***	-15.40766***	-64.42574***	.0841308
Maroc	2.610556	6.523135	-11.31428*	-8.340716**
_cons	-50.4547	-87.28788**	102.281***	98.43695***
Prob> F	=0.0000	=0.0000	=0000	=0.0000
R-squared	=0.9943	=0.9936	=0.9983	=0.9879
Adj R-squared	=0.9927	=0.9918	=0.9978	=0.9848

The level of financial development, as measured by loans granted to private sector, influences positively and significantly the offer of female labor. Indeed, some private sectors (eg. textiles and agriculture) rely largely on the female labor force.

Using the fixed individual effects, we can estimate the specific effect of each country. To avoid problems of collinearity between the fixed effects, we calculate only the specific effects of four countries, the fifth countries (Cyprus) being the reference country. Estimates show that only Malta fixed effect is significant in the case of models (1) and (2).

Regarding the rate of vulnerable employment, the results of this model show that no coefficient is significant with the exception of fixed effects for each country (except the fixed effect of Morocco which is not significant).

For the determinants of transfers, we find that the level of GDP per capita negatively and significantly influences transfers (-16.8). Indeed, the higher the level of GDP per capita gets, the higher the economic situation is good and less people think to leave their country of origin, which in turn decreases the level of transfers.

For its part, the level of human capital accumulation increases the level of transfers. Indeed, in developing countries, better educated people seek to leave their country to settle in host countries to seek better educational opportunities. Once graduated, only a proportion of them return to the countries of origin. In this case, we sometimes talk about brain drain. If it is difficult to quantify the rate of brain drain, other indicators can approximate the extent of this phenomenon. For example, in 2012, 640 Moroccan students will join the major French engineering schools. Considering the high wages in France, it is unlikely that they will all return to the country of origin. The only benefit that the country can draw is to increase the level of transfers.

4.3.2 Developed Countries

The Table 8 presents the estimates of models (1), (2), (3) and (6) for the group of developed countries. According to the results, we find that the impact of transfers does not have a significant effect on the participation rate of the female population. On the contrary, the transfers influence positively and significantly to 10% female employment rate.

Table 8. Estimates of models (1), (2), (3) and (6) by using the fixed individual effects, developed countries

	lab_part_f	empl_f	vul_f	Transf
Transf	.225805	.5273439*	.9354184***	-
lgdp_perca~a	8.727133***	11.34435***	-8.03293***	1.048926***
Leduc	.7709478	4.052155***	1.128032	-.110067
Lgfcf	-3.528281***	1.528331	-1.407346	-.0203284
pop_gr	.8646443**	1.097677***	.3629809	.0279921
inf_def	.0895263***	.1370936***	.2611076***	.0279392***
dev_fin	.0184847***	.008884**	.0108473***	-.0015359*
dep_gou	.3645004***	.5237114***	-.1102702	-.0146448
Ouver	.0119758	.0182289	-.0081955	-.0075861***
_Ipays_2	-6.513616***	-3.999822***	3.061931***	.8774034***
_Ipays_3	-14.57307***	-15.56277***	3.605032**	2.395828***
_Ipays_4	-1.208099	-.1920321	64.09135***	.5309712**
_Ipays_5	4.001731**	3.984548*	58.10903***	2.216176***
_Ipays_6	-.4516218	-.8681566	64.21449***	.3144908*
_Ipays_7	-8.353763***	-8.50965***	63.25618***	.464769***
_Ipays_8	-6.239654***	-4.380217***	64.26153***	.181908
_Ipays_9	-11.44669***	-11.93262***	60.87573***	.9029732***
_Ipays_10	9.490654***	10.98166***	62.8648***	.5205853**
_Ipays_11	-9.86528***	-7.76735***	-.1438818	.6276216**
_Ipays_12	-18.63581***	-16.9528***	8.078588***	-.0211258
_Ipays_13	-7.433201***	-2.983856***	7.468122***	-.2034796
_Ipays_14	-22.41914***	-22.72481***	2.096953	3.729332***
_Ipays_15	-5.738598***	-3.949293***	2.772886**	.7467931***
_Ipays_16	4.149064***	6.503326***	-.4392432	.8352487***
_Ipays_17	-.3297477	1.223046	-.0451939	-.5043657**
_Ipays_18	.1074383	1.249735	9.128465***	2.316861***
_Ipays_19	-10.798***	-13.77303***	2.34292***	.6780545***
_Ipays_20	-1.564491	-1.046262	-1.091604	.27213
_Ipays_21	-20.32605**	-14.56729***	35.79479***	.5294065
_Ipays_22	-4.644306***	-.4738073	-.6410299	.1113521
_cons	-36.64378	-102.399***	89.01407***	-9.217685**
Number of obs	264	264	264	264
F(30,233)	=474.97	=480.75	= 4246.85	=63.21
Prob> F	=0.0000	=0.0000	=0.0000	=0.0000
R-squared	=0.9839	=0.9841	=0.9982	=0.8868
Adj R-squared	=0.9818	=0.9821	=0.9979	=0.8728

Source: Authors' calculations

Furthermore, the impact of transfers on the rate of vulnerable female employment is against-intuitive. The impact of other control variables is positive and significant with the exception of the impact of the investment rate on the rate of the active population (-3.52). Unlike MENA countries, the level of GDP per capita increases transfers.

4.3.3 Latin America and Caribbean

According to the results of Table 9, the impact of transfers on the supply of female labor is ambiguous in Latin America and the Caribbean region. The effect of the level of GDP per capita is positive and significant. This effect is significantly negative on the rate of female vulnerable employment.

Table 9. Estimates of models (1), (2), (3) and (6) by using the fixed individual effects' method, Latin America and Caribbean

	lab_part_f	empl_f	vul_f	Transf
	Coef.	Coef.	Coef.	Coef.
Transf	.0807633	-.1073221	-.0674821	
lgdp_perca~a	7.275248***	12.98914***	-4.505506*	.4191467
Leduc	1.125428	-.1995879	3.099069	-.5577846
Lgfcf	2.125844	3.010803**	5.172736***	-1.590114**
pop_gr	-4.566668**	-3.904296***	3.299514	-1.503625*
inf_def	.0350791	.0192354	.0340479	.0042686
dev_fin	-.0055215	.0033027	-.014576	-.0108291
dep_gou	-.0610133	-.0594525	-.0154754	-.0754339
Ouver	-.0119536	.007313	-.0625011**	.0421733***
_Ipays_2	27.69319***	35.91267***	47.89625***	4.540548***
_Ipays_3	-7.521752***	-6.890611***	53.9394***	-.5354457
_Ipays_4	11.77955***	12.02375***	48.21155***	3.508646***
_Ipays_5	2.606319	5.203865**	51.67625***	.8431372
_Ipays_6	8.232834***	5.14**	51.0925***	7.241361***
_Ipays_7	14.54544***	18.90356***	49.15145***	6.164887***
_Ipays_8	1.741513	12.23208***	55.77136***	13.22636***
_Ipays_9	-4.625844***	-.6676452	15.44253***	1.6543***
_Ipays_10	7.761708*	4.926165	10.13132	-1.622497
_Ipays_11	20.50262***	26.59138***	29.89634	2.826209**
_Ipays_12	20.22733***	25.37061***	20.55955	1.956734***
_Ipays_13	4.937633***	5.576237***	7.815094	-1.513239**
_Ipays_14	8.89489***	8.305442***	14.49727	.539653
_cons	-27.42186	-85.14926***	30.97607	4.364774
Number of obs	168	168	168	168
Prob> F	=0.0000	= 0.0000	=0.0000	=0.0000
R-squared	=0.9371	=0.9599	=0.9893	=0.9693
Adj R-squared	=0.9276	=0.9538	=0.9877	=0.9777

Source: Authors' calculations

Unlike developed countries the population growth rate significantly reduces the supply of female labor. Like the MENA countries, nurseries and child minders are undeveloped for economic and socio-cultural reasons, which in turn reduce the labor supply of women.

4.3.4 Europe and Central Asia

It is in the region of Europe and Central Asia (Table 10) that transfers significantly reduce the supply of female labor (-0.488 and -0.479), and the rate of female vulnerable employment (-0.42).

Table 10. Estimates of models (1), (2), (3) and (6) by using the fixed individual effects method, Europe and Central Asia

	lab_part_f	empl_f	vul_f	Transf
	Coef.	Coef.	Coef.	Coef.
Transf	-.488851*	-.4790219***	-.4273746*	
lgdp_perca~a	-1.187947	5.075038***	-2.272397	2.15828**
Leduc	-5.499882*	-11.50825***	-2.019542	.2786781
Lgfcf	-2.540564***	1.286999	-2.857062**	-.0542015
pop_gr	-.2446068	-.1363937	-.3795163	-.7147558***
inf_def	.0571952***	.0741185***	.0457106*	-.0214352
dev_fin	.0576527***	.030838***	-.033237**	.0019031
dep_gou	-.1635414***	-.3276038***	-.0723226	-.0196964
Ouver	-.0328436***	-.0442449***	.0128602	-.0010662
_Ipays_2	-2.943938***	-6.592273***	1.370948	-2.97911***
_Ipays_3	4.019801***	.0140415	1.38356	-4.932277***
_Ipays_4	8.127029***	10.35198***	-1.406887	5.163067***
_Ipays_5	-4.313779***	-3.595296***	.3528467	-3.96859***
_Ipays_6	14.45678***	12.14406***	-33.62542***	-2.685601***
_Ipays_7	2.784369***	1.52565**	-60.7009***	-3.141548***
_Ipays_8	5.829664***	4.639611**	-57.29196***	-3.203695***
_Ipays_9	-.9280746	-5.036639***	-49.5773****	-3.444184***
_Ipays_10	.3025129	-.0946394	-35.52651***	-1.726002**
_Ipays_11	3.3256***	2.305922*	-66.01638***	-3.855946***
_Ipays_12	5.46555***	-.8142091	-65.02819***	-3.960501***
_Ipays_13	4.695772***	1.775728*	-56.77929***	-4.953018***
_cons	96.89447***	54.73617***	111.3649***	-16.34432
Number of obs	156	156	156	156
F(21,134)	=143.27	=120.77	= 1728.69	=18.54
Prob> F	=0.0000	=0.0000	=0.0000	=0.0000
R-squared	=0.9574	=0.9498	=0.9963	=0.7331
Adj R-squared	=0.9507	=0.9420	=0.9957	=0.6936

Source: Authors' calculations

4.3.5 East Asia and Pacific

In the countries of East Asia and Pacific, transfers significantly increase the rate of active female population. Indeed, women in countries of this region work mostly in the Gulf countries as housemaids, and remittances to countries of origin could be an incentive for participation in the labor market.

The results obtained are substantially different and sometimes contradictory when going from one region to another. In particular, estimates have shown that the effect of transfers on female labor supply depends on the studied area. In both regions MENA and LAC, transfers have an ambiguous impact on female labor supply. In developed countries and the countries of East Asia and Pacific,,

transfers significantly increase the supply of female labor. However, in the countries of Europe and Central Asia, transfers seem to have a negative effect on female labor supply.

The question that still remains asked is that of the impact of remittances on the decision of women in a single country. If the literature on the indirect impact of remittances on economic growth in receiving countries is abundant (Docquier et al, 2011; Lucas, 2005, Giuliano and Ruiz-Arranz, 2009), few studies have focused on the impact of transfers on the evolution of female labor supply at specific countries level. This question is the objective of the microeconomic part of this work.

5. Conclusion

International transfers are considered as a valuable opportunity for countries that take care of the development of their economy. Theoretical and empirical debates at both the macroeconomic level and at the microeconomic level show that remittances can influence the status and position of women in society. The report on the state of population 2006 (UNFPA, 2006), on women and international migration emphasizes that migration and remittances may contribute to the process of changing the status of migrants' women remained in their country, and that through: the most income that they acquire, the increase of autonomy and self-esteem that they achieve.

The present research has the ambition to contribute to the literature by providing a better visibility on the impact that remittances can generate in the level of women remained in the country, both in terms of economic activity and the status of women in households. To this end, this work mobilizes macroeconomic aggregate data to verify the impact of remittances on women activity at the international level.

The results of the macroeconomic approach are substantially different when going from one region to another. In particular, the presented estimates show that the effect of transfers on female labor supply depends on the studied area. In both regions MENA and LAC (Latin America and Caribbean), transfers have an ambiguous impact on female labor supply. In developed countries and the countries of East Asia and Pacific, transfers significantly increase the supply of female labor. However, in the countries of Europe and Central Asia, transfers seem to have a negative effect on female labor supply. Given the lack of public policies on the effects of remittances on the women status and given the value of such policies, a number of reflections and actions must be taken to prepare advocacy with governments and international organisms to enable women to play their full role as a vector for change. The complexity of the studied phenomenon shows the existence of contradictory effects, in which case the local and regional characteristics may play an important role. Therefore, only empirical investigations of countries, see regions, may resolve the uncertainty and improve our knowledge in this field. This will be the subject of future work.

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Appendix

Table 11. List of countries by region

East Asia and Pacific		MENA		Europe and Central Asia		Latin America and Caribbean		Developed Countries	
Ipays	Pays	Ipays	Pays	Ipays	Pays	Ipays	Pays	Ipays	Pays
1	Indonesia	1	Chypre	1	Bulgaria	1	Argentina	1	Australia
2	Malaysia	2	Israel	2	Croatia	2	Bolivia	2	Austria
3	Philippines	3	Jordan	3	Czech Republic	3	Chile	3	Belgium
4	Thailand	4	Malta	4	Georgia	4	Colombia	4	Denmark
		5	Morocco	5	Hungary	5	Costa Rica	5	Estonia
				6	Kazakhstan	6	Dominican Rep.	6	Finland
				7	Latvia	7	Ecuador	7	France
				8	Lithuania	8	El Salvador	8	Germany
				9	Poland	9	Mexico	9	Greece
				10	Romania	10	Panama	10	Iceland
				11	Russian Fed.	11	Paraguay	11	Ireland
				12	Slovak Republic	12	Peru	12	Italy
				13	Slovenia	13	Uruguay	13	Japan
						14	Venezuela, RB	14	Luxembourg
								15	Netherlands
								16	New Zealand
								17	Norway
								18	Portugal
								19	Spain
								20	Sweden
								21	Turkey
								22	UK