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Remittances and the economic crisis: evidence from the Greenback 2.0 survey in Italy

GREENBACK 2.0 WORKING PAPER N.1

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ABSTRACT

Monetary remittances represent the most visible transnational activity of migrants and can be considered as a function of migrant's ability of producing savings from income and of remitting (supply side), and of the type of claims of family members, either left in the country of origin or residing abroad with the migrant (demand side). Hence, migrant's remitting capacity is directly linked to the level of economic integration at destination. However, what happens to remittances when the labor market becomes uncertain and the earning potential decreases?

Based on a recent survey, this paper explores the effect of the economic crisis on income trends and on the flow of monetary remittances sent to the families left home among three surveyed groups in Turin—Moroccans, Peruvians and Romanians. Results show a widespread worsening of the average economic conditions since the outbreak of the crisis in 2008. The protracted economic instability seems to have effects on migrants' ability to keep remittance flows constant over time, with differentiated outcomes according to the national groups. While Moroccans show a higher propensity in receiving remittances, Peruvians are those who resist more to a remittance drop over the last five years. Beyond economic determinants, observed patterns in remittance trends can also be explained by migrant household characteristics in Italy and abroad and to unobserved variables (distance) related to the country of origin.

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1 INTRODUCTION

Migrant's labor market integration in time of crisis: the case of Italy

The financial crisis of 2008 continues to have a profound effect on both the native and the immigrant population in Italy. Immigrant workers are often deemed to suffer more in terms of employment and income reduction than Italian workers because of their relatively weaker contractual position, their lower education level, and their concentration in highly pro-cyclical economic sectors such as manufacturing and construction.[2] Indeed, most recent figures on the labor market dynamics in Italy show a decrease in the employment rate between 2008 and 2013, which strongly affects male migrants (14 percent) and to a lesser extent also female migrants (3.4 percent) (ISTAT 2014). While employment rates are traditionally lower for women than men (49.3 percent against 67.9 percent in 2013), the employment growth during 2013 of around 22 thousand units is only due to women. The differentiated impact of the crisis by sex is mainly due to the distribution of men and women in the labor market. While males mainly employed in the manufacturing and construction sectors which have been seriously stricken by the crisis[3] female employment is highly concentrated in the domestic and healthcare sectors, which have been less affected by the economic downturn (*ibid*).

Beyond the employment negative trend, further phenomena account for the impact of the crisis on migrant workers. In the last few years an increased concentration of foreign labor force is observed in the low qualified positions (from 29 percent in 2008 to 34 percent in 2012), with a parallel decrease in the share of migrant workers in qualified jobs (from 8.2 percent in 2008 to 5.9 percent in 2012) and an increase in the proportion of "over-educated" workers: migrant workers who perform tasks below their highest level of education represent 41 percent of the entire migrant workforce in 2012 while the same figure was around 39 percent in 2008.[4]

Also underemployment, which is calculated on the volume of the total hours worked and describes the level of utilization of workers, has exacerbated among foreign workers, growing from 7 percent in 2008 to 10.7 percent in 2012, 6 points higher than Italian workers (*ibid*).

At the same time the average income gap between foreign and Italian workers has expanded. The net monthly salary is, on average, lower for foreigners: in 2012 it amounted to €968 versus €1,304 for Italian workers (−€336). Furthermore, while the net pay of the foreign labor force was only slightly higher in 2008 than in 2012 (€973 per month), the gap between the wage of native workers was much lower, amounting to €266 per month (*ibid*). Over the past few years, the increase in income inequality is recognized as one of the effects of the crisis, as well as the reason for the progressive increase in the number of the so-called "*working poor.*"[5]

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2 Moressa Fondazione. *Rapporto Annuale Sull'economia Dell'immigrazione—Edizione 2013, Tra Percorsi Migratori E Comportamento Economico.* Bologna: Il Mulino.

3 Pastore, Ferrucio, Ester Salis, and Claudia Villosio. 2013. *"L'Italia E L'immigrazione 'low cost': Fine Di Un Ciclo?."* Mondi Migranti 1 (19).

4 Ministero del Lavoro e delle Politiche Sociali. 2013. *Terzo Rapporto Annuale—Gli Immigrati Nel Mercato Del Lavoro in Italia.* http://www.italialavoro.it/wps/wcm/connect/912eae08-a9f5-45d7-a302-c1330ac4fc13/18+Terzo+Rapporto+Annuale++immigrati+2013.pdf?MOD=AJPERES.

5 Emanuele Galossi, *L'impatto Della Crisi Sulle Condizioni Di Vita E Di Lavoro Degli Immigrati: Un'indagine dell'Associazione Bruno Trentin.* 2013. Associazione Bruno Trentin, IRES.

Since the outbreak of the crisis, increasing unemployment and lower wages has put migrants at risk of a strong family restructuring and social destabilization. The share of foreign dual-income households shrunk to 24.2 percent of the total in 2013 (from 29.6 percent in 2008) and even among migrants the single-income household model (usually with a male earner) continues to be the prevalent model, representing 58.7 percent of all households with at least one member at working age (+367 thousand families in the five years of the crisis). The female household member seems to offset the loss of employment of men only in the northern regions of the country, where the sharp decline in households with a single breadwinner (down from 44.7 to 36.6 percent of the total between 2008 and 2013) is associated with an increase in the households where the breadwinner is a woman (from 16.3 to 23.0 percent). On the other hand, the slight rise in employment among women in the rest of the country is not enough to compensate for the employment loss among men (ISTAT 2014).

In 2013, the number of foreign households with no income from pension and work has more than tripled compared to 2008, rising from 98,000 to 311,000, which translates to an increase from 7 percent to 14.9 percent of all households in the same conditions. In the same line, the proportion of households without income from employment on total foreign families with at least one working-age member reaches 15.5 percent, while it was 7.4 percent in 2008 (ISTAT 2014).

In this context, the worsening of the economic integration is not totally addressed by a retrenching social welfare and social protection system. A more problematic access to the welfare system and to income support measures, the absence or the limited presence of a family network, the need to send remittances to the origin countries, and the costs of bureaucracy (such as those related to residence permits' renewals) are just some of the causes of the erosion of migrants' incomes, putting migrants at risk of falling below the poverty line.[6]

[6] Devi Sacchetto and Francesca Alice Vianello. "La Diffusione Del Lavoro Povero. L'impatto Della Crisi Economica Sui Lavoratori Migranti." 2012. Espanet Conference: Risposte alla crisi. Esperienze, proposte e politiche di welfare in Italia e in Europa, 20–22 September, Roma.

The impact of the crisis on migrants' remittances

Migrants' economic contribution to origin countries takes many different forms and is associated with the type and length of the migratory experience as well as with the level of integration into the labor market at destination and at different stages of the migratory process. Remittances are perhaps the migrant's most visible transnational activity as they represent an important additional income source for origin households as well as non-negligible international monetary flows at the aggregate level.

Transnational monetary transfers can be understood as the result of a bargaining process of migrants and their origin households, where the demand from family members left behind and from obligations contracted before departure meet the ability and willingness of the migrant to save and remit.[7] In this perspective the total amount of remittances depends, among other factors, upon the occupational and economic trajectories of migrants abroad. Indeed, several empirical studies provide support for the role of migrants' per capita income at destination as well as in the origin country in explaining the total amount of remittances sent.[8]

Historically, remittances proved to be less volatile and more resilient to idiosyncratic shocks of the economic cycle than other international financial flows and have shown increasing trends in times of financial crisis and natural disasters in the origin countries.[9] For example, remittance inflows to Mexico increased following a financial crisis in 1995, to the Philippines and Thailand after the 1997 Asian crash, and to Central America after Hurricane Mitch in 1998. Evidence in rural Mali showed that remittances respond positively to

[7] Hillel Rapoport and Frédéric Docquier. "The Economics of Migrants' Remittances," IZA Discussion Paper Series, no. 1531 (March). 2005.

[8] See Glytsos 1988 for the Greek-German migration between 1960 and 1982, Glytsos 2002 for European migration from Algeria, Egypt, Jordan, Morocco, Syria, Tunisia and Turkey and OECD 2006.

[9] Dilip Ratha, Sanket Mohapatra, and Ani Silwal. *Outlook for Remittance Flows* 2010–11. 12. Migration and Development Brief. Washington, D.C: The World Bank. 2010. http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1110315015165/MigrationAndDevelopmentBrief12.pdf.

shocks suffered by recipient households[10] and surveys in the River Valley in Mali and in Senegal suggested that migration acts as an intra-household risk-diversification strategy, with remittances as a contingent flow that supports family consumption in case of adverse shocks.[11]

Unlike past emerging market crises, however, the current crisis started in the high-income countries and has subsequently spread to the developing countries, resulting in a global crisis. Migrant destinations both in the North and the South have been affected to varying degrees.

Recent evidence for Italy[12] suggests that migrants adopt different strategies in order to cope with the crisis, such as sending some family members back home in order to alleviate their costs in the destination countries or reducing the daily expenditures in response to wage cuts by employers (sharing accommodations, contracting the consumption costs). Nevertheless, migrants typically continue to send remittances, even when they are hit by income shocks. Indeed, remittances at the global level remained remarkably stable in the wake of the recent financial crisis, compared to other types of international financial inflows (The World Bank 2011).

The Italian case and objective of the paper

Unlike the global trend, remittances from Italy showed a sensible decline since 2011, with the overall amount sent in 2013 being far below the level of 2008 (see Fig. 1). Official data provided by the Bank of Italy,[13] shows that the decrease in the total remittance volume is due more to the decrease in the number of remitting migrants than to the decrease in the amount sent by each of them (on average €1,673 per year in 2012). The decrease in the number of remitting migrants and in the total outflows from Italy is even more striking if one considers that the total migrant population residing in the country kept growing, although at a slower pace, also in the last years of the economic downturn (ISTAT 2014).

Almost half of the entire remittances flow from Italy is sent from two regions, Lazio and Lombardy.

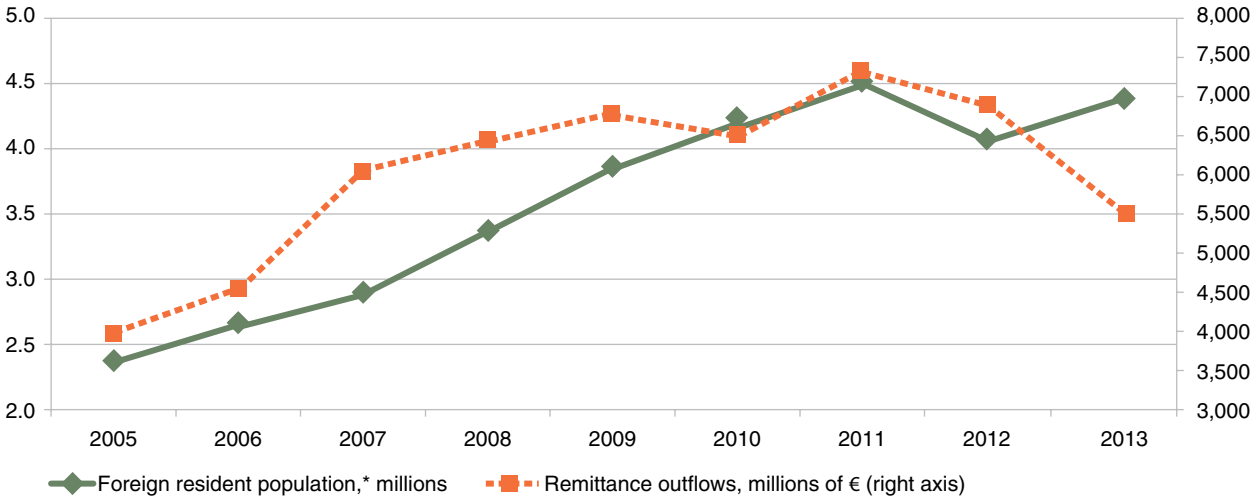
[10] Flore Gubert "Do Migrants Insure Those Who Stay Behind? Evidence from the Kayes Area (Western Mali)." *Oxford Development Studies* 30 (3): 267–87. 2002. "Migration and Development: Mixed Evidence from Western Mali." Development 50 (4): 94–100. 2007.

[11] Jean-Paul Azam and Flore Gubert. 2006. "Migrants' Remittances and the Household in Africa: A Review of Evidence." *Journal of African Economies* 15 (suppl. 2): 426–62.

[12] Cingolani and Ricucci 2013; Galossi 2013; Fondazione Moressa 2013.

[13] Fondazione Moressa 2013: 111–112.

FIGURE 1: Foreign resident population and remittances in Italy, 2005–2013



Source: Istat and Bank of Italy.

**Break in series in 2011:* from 2012 data are adjusted for new Census data.

Table 1 presents data for the first 8 provinces per remittance sent: except for Naples, all of the provinces are in the northern and central parts of Italy. While China alone is the destination of almost 40 percent of all remittances sent from Italy, differences at the province level reflect the different composition of migrant population across Italy (Table 2).

Although migrant groups in Italy differ in their economic integration and labor market specializations, the worsening economic conditions have had an impact on remittance behaviors and prospects almost everywhere (Fullin and Reyneri 2013). Indeed, total remittance outflows from Italy decreased at about 14 percent between 2008 and 2013 (Table 1).

Based on a recent survey conducted by the World Bank in 2014, this paper explores the effect of the economic crisis on the flow of monetary remittances sent to the families left home in three surveyed communities in Turin—Moroccans, Peruvians and Romanians.

Focusing on the supply side, hence on the ability of migrants to send money back home, this paper investigates the labor market integration of migrants residing in Turin, their income stability during the economic crisis (2008–2013) and the impact of the latter on remittances' size. In particular the paper tries to answer two interconnected questions: 1) which national groups or profiles of individuals are most affected by the economic crisis and what are their characteristics? 2) what has been the effect of the crisis on the remittance trend?

The rest of the paper is divided as follows: Section 2 presents the empirical data drawn from the Greenback 2.0 survey in Turin, Section 3 presents the model adopted to describe the probability of an income drop and of a decrease in remittances during the crisis and Section 4 discusses the empirical results. Some concluding remarks will be provided.

TABLE 1: Remittance outflows from Italy, 2005–2013: first 8 provinces and total (millions of euro)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2013	2008–2013
	a.v.	a.v.	a.v.	a.v.	a.v.	a.v.	a.v.	a.v.	a.v.	%	% var.
Rome	1145.84	1087.09	1500.35	1697.72	1784.7	1786.27	2040.02	1938.17	965.49	17.5	−43.1
Milan	675.36	614.6	824.86	862.83	890.41	941.83	1031.31	965.97	674.81	12.3	−21.8
Naples	96.88	127.01	170.81	183.89	240.86	225.75	305.71	295.6	220.95	4	20.2
Prato	29.89	88.06	449.74	415.82	485.56	191.7	249.1	208.46	202.52	3.7	−51.3
Florence	129.7	142.49	244.3	254.11	253.73	207.35	233.6	197.19	190.8	3.5	−24.9
Turin	121.76	164.03	180.41	180.36	180.26	180.54	193.32	164.58	168.78	3.1	−6.4
Brescia	72.65	106.01	127.3	132.63	131.62	132.09	152.76	134.65	140.65	2.6	6
Boulogne	69.55	103.05	126.14	138.72	130.77	130.7	131.86	108.99	117.96	2.1	−15
Total	**3900.79**	**4527.67**	**6039.26**	**6376.95**	**6747.82**	**6572.22**	**7394.4**	**6833.12**	**5501.76**	**48.7**	**−13.7**

Source: Own calculations based on Bank of Italy dataset on remittances (last update July 2014).

TABLE 2: First 3 countries of destination in 2013, first 8 Italian provinces

	1°	Row %	2°	Row %	3°	Row %	Tot, %
Rome	China	35.76	Romania	14.03	Philippines	11.57	61.36
Milan	China	24.17	Philippines	15.48	Peru	9.97	49.62
Naples	China	35.57	Ukraine	9.47	Romania	7.61	52.64
Prato	China	88	Pakistan	1.82	Romania	1.73	91.56
Florence	China	37.84	Peru	9.68	Romania	8.96	56.48
Turin	Romania	28.35	Peru	10.14	Morocco	8.12	46.6
Brescia	China	15.02	Senegal	10.25	Romania	10.01	35.28
Bologna	Romania	13.37	Bangladesh	11.97	China	10.61	35.95

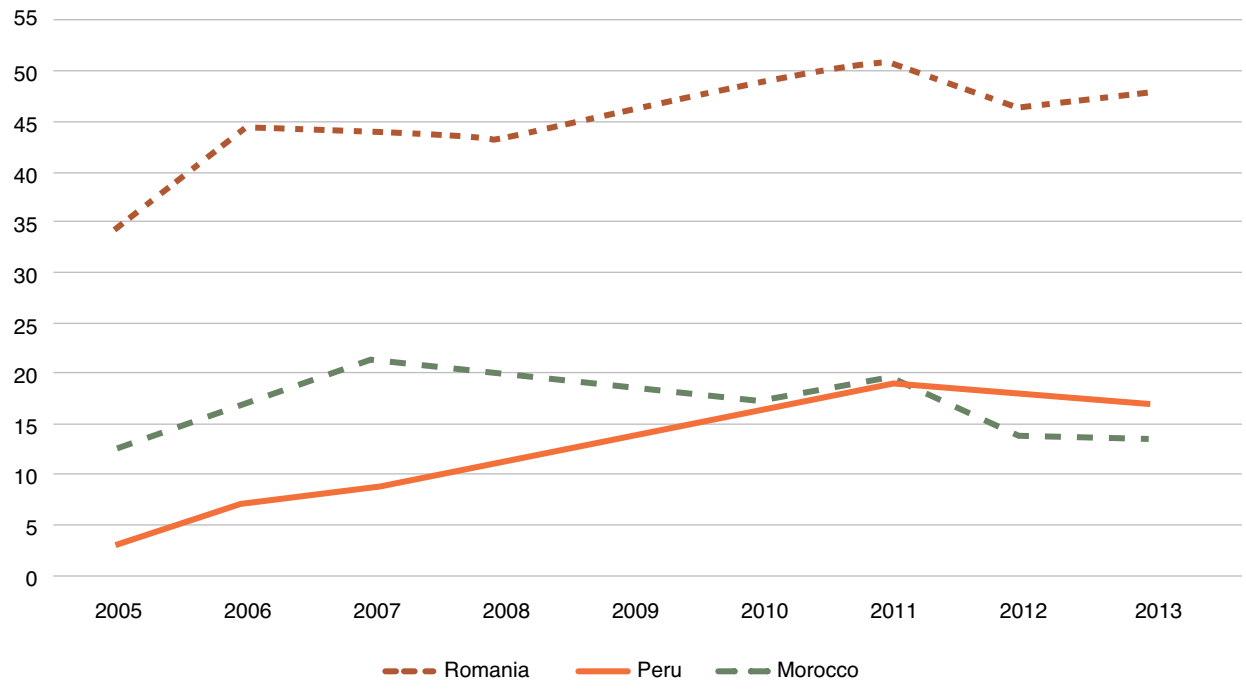
Source: Own calculations based on Bank of Italy dataset on remittances (last update July 2014).

2 EMPIRICAL DATA: THE GREENBACK 2.0 SURVEY

Empirical data on migrant transnational engagement in terms of remittances are drawn from the Greenback 2.0 survey.[14] Aimed at exploring migrants' financial needs and behavior, the survey collected quantitative in-depth data on individual and household characteristics, job integration and remittance behavior of migrants residing in Turin, a medium-sized city in the North of Italy, between July and September 2013. Interviewed migrants are citizens from Romania, Morocco and Peru, the first three countries of origin per number of residents in the city (representing together almost 60 percent of the total migrant population) and per total amount of remittances from the Province of Turin,

[14] The World Bank. 2014. *Migrants' Remittances from Italy—International Remittances and Access to Financial Services for Migrants in Turin, Italy.* Greenback 2.0 Report. Washington, D.C. https://remittanceprices.worldbank.org/sites/default/files/migrants_remittances_italy.pdf.

FIGURE 2: Remittances from the Province of Turin, 2005–2013, first 3 destination countries (min €)



Source: Own calculations based on Bank of Italy dataset on remittances (last update July 2014).

representing respectively 28.2 percent, 10.8 percent, and 8.2 percent of the overall outflows.[15]

At the same time, these three countries differ in their geographical position, patterns of socio-economic integration in Italy (in terms of participation to the labor market by sex and distribution in different economic sectors) and migratory systems (in relation to the organization of the migratory chain within families). The overall sample is composed of three equally large subsamples according to the citizenship at birth of the interviewees: short-range EU migration (Romania), short-range non–EU migration (Morocco) and long-range migration (Peru).

The sample is composed of foreign-born individuals residing in the city of Turin at the time of the interview, including naturalized immigrants, between the ages of 18 and 64 years. To be included in the sample the interviewed migrants had to meet four criteria: 1) to have resided in Italy for at least one year (with or without a regular residence status); 2) to live in the city of Turin and its metropolitan area; 3) to have an income (obtained from any type of job or occupation, including activities in the informal sector); and 4) to have sent remittances to his/her country of origin at least once since the beginning of 2013. A 'center sampling technique' was adopted to capture also migrants not legally residing in the country and to create a balanced sample.[16]

Sample characteristics and main variables of interest

The average profile of the final sample is reported in Table 3 and Table 4. The first table includes

[15] Fondazione Moressa 2013; Banca d'Italia 2014.

[16] Baio, Gianluca, Gian Carlo Blangiardo, and Marta Blangiardo. 2011. "Center Sampling Technique in Foreign Migration Surveys: A Methodological Note." *Journal of Official Statistics* 27 (3): 451–65.

TABLE 3: Demographic characteristics, by country of origin

		Morocco		Peru		Romania		Total	
		Freq.	Col %	Freq.	Col %	Freq.	Col %	Freq.	Col %
Sex	Male	136	*85.53*	74	*45.96*	62	*38.75*	272	*56.67*
	Female	23	*14.47*	87	*54.04*	98	*61.25*	208	*43.33*
Arrival in Italy	Before 2008	128	*80.5*	117	*72.67*	121	*75.63*	366	*76.25*
	After 2008	31	*19.5*	44	*27.33*	39	*24.38*	114	*23.75*
Education	None	6	*3.77*	0	*0*	0	*0*	6	*1.25*
	Elementary	7	*4.4*	0	*0*	2	*1.25*	9	*1.88*
	Lower second	63	*39.62*	26	*16.15*	21	*13.13*	110	*22.92*
	Upper second	58	*36.48*	95	*59.01*	94	*58.75*	247	*51.46*
	Post-sec, non ter.*	0	*0*	1	*0.62*	27	*16.88*	28	*5.83*
	Bachelor	12	*7.55*	11	*6.83*	9	*5.63*	32	*6.67*
	Master	13	*8.18*	28	*17.39*	7	*4.38*	48	*10*
Marital status	Married	83	*52.2*	78	*48.45*	74	*46.25*	235	*48.96*
	Separated	8	*5.03*	14	*8.7*	6	*3.75*	28	*5.83*
	Divorced	7	*4.4*	13	*8.07*	19	*11.88*	39	*8.13*
	Widow	0	*0*	1	*0.62*	2	*1.25*	3	*0.63*
	Single	56	*35.22*	34	*21.12*	32	*20.0*	122	*25.42*
	Cohabiting	5	*3.14*	21	*13.04*	27	*16.88*	53	*11.04*
Italian citizenship		15	*9.43*	10	*6.21*	3	*1.88*	28	*5.83*
Total		**159**	***100***	**161**	***100***	**160**	***100***	**480**	***100***

* ISCED education levels: the post-secondary non tertiary class includes all vocational or university courses after the high school diploma and which last no more than 1 year.

TABLE 4: Economic characteristics of the sample, by country of origin

	Morocco		Peru		Romania		Total	
Mean values	M	F	M	F	M	F	M	F
Age	36.6	37.1	42.1	41.1	35.9	38.1	37.9	39.3
Length of stay in Italy	10.9	10.6	8.8	10.7	9.4	8.6	10	9.7
Annual income (€)	11181.5	9780	12240	10221.4	15541	10781.6	12451.8	10439.7
Annual remittances (€)	1590.5	1715.2	2240.8	2004.3	1875	1677.3	1832.3	1818.2
Remittance to income ratio	0.166	0.187	0.209	0.215	0.127	0.159	0.169	0.186

general statistics on sex, arrival in Italy, education level and marital status of the 480 interviewed individuals, while Table 4 reports statistics on age, length of stay in Italy, income and remittances.

While the overall sample is relatively gender-balanced (43 percent of those interviewed are women), gender differences are more evident within each subsample: women represent 61 percent of Romanians, 54 percent of Peruvians, and only 14 percent of Moroccans, the latter less frequently complying with the survey criteria because of their low activity rate. Each subsample is stratified according to the length of stay in Italy, with around 24 percent of interviewed migrants with a 'short' migratory experience and arriving after 2008.

With regard to formal qualifications and competences, Peruvians show the highest level of education attained (59 percent with a high school diploma and 17 percent with a master degree), closely followed by Romanians (59 percent with a high school diploma, 17 percent with a non-university qualification after the high school diploma). Almost 40 percent of Moroccans attained a lower secondary school diploma, while 36 percent an upper secondary diploma. It is worth noticing that 7 percent of migrants have achieved their highest education level in Italy and that 35.6 percent of them have attended some sort of professional and/or vocational training courses in Italy, with high variations in terms of length (from 1 months to 2 years) and subject of the course (from carpentry to health care, from computer science to cooking). Almost half of the interviewed migrants are married. Moroccans have the highest number of single individuals (35 percent), while among Romanians and Peruvians there is a higher incidence of separated or divorced individuals (respectively 18 percent and 16 percent).

Table 4 provides summary statistics on some key demographic and economic variables by country of origin. Although Peruvians had the oldest age, Moroccans had the longest length of stay, with more than 10 years on average. At the same time, Moroccans earn and remit less annually than both Romanians and Peruvians. Differences in the total amount of remittances sent per year are sensible both in absolute terms and in relative terms with the declared annual income: the remittance to income ratio ranges from 12.7 percent of male Romanian migrants to 21.5 percent of female Peruvian migrants.

3 MODELLING THE IMPACT OF THE ECONOMIC CRISIS

The model

The purpose of the empirical analysis is to test what are the main factors that contribute to determine the income and remittances trends since the beginning of the economic crisis in Italy among the surveyed population. The Greenback 2.0 survey provides two variables that account for the income trend and the remittance trend between 2008 and 2013: these two variables have three outcomes (decreased, unchanged, and increased) for which we can assume that ordering is relatively straightforward and self-perception of respondents should not introduce an important bias. A Chi-squared test to measure the association between the two by sex confirms that there is a strong, although not perfect, correlation between them (Table 5).

Since the income trend is not enough to explain the variation in remittances, we proceeded by splitting the empirical test in two parts. Modelling the two trends in income and remittances required choosing between different non-linear regression models for ordered and non-ordered categorical dependent variables, taking into account the pros and cons of each of them in terms of assumptions, goodness of fit and ease of results' interpretation. Using an ordered logit model implies the acceptance of the proportional odds assumption, for which the relationship between all pairs of groups is the same and therefore only one set of coefficient is estimated. Since this assumption was not confirmed by the two different tests (the Likelihood-ratio test and the Brant test in Stata), we discarded this option in favor of a non-ordinal multinomial method. After some further consistency checks,[17] we chose to dichotomize the two outcome variables, distinguishing between 'decreased' and 'non decreased'

[17] We tried with a multinomial logistic regression model, taking as the base outcome the case of unchanged income and estimating two sets of coefficients for the 'decreased' and 'increased' outcome. While the interpretation of results with this model is not straightforward, the estimates are biased if the independence of irrelevant alternatives (IIA) assumption does not hold. In our case, although there is virtually no other alternative that can be added to the three considered ones in the outcome variable, the IIA is not confirmed. Hence, we finally opt for dichotomizing the two outcome variables and test binary logistic models. We provide the multinomial logit regression results for the income trend in the Appendix for a comparison. For a discussion on alternative models see (Long and Freese 2006; Williams 2012).

TABLE 5: Chi2 test for the correlation between income and remittance trends, by sex

Male	Remittances				Female	Remittances			
Income	**Decreased**	**Unchanged**	**Increased**	**Total**	**Income**	**Decreased**	**Unchanged**	**Increased**	**Total**
Decreased	105	32	5	142	**Decreased**	64	23	2	89
	38.75	11.81	1.85	52.4		31.07	11.17	0.97	43.2
Unchanged	16	58	3	77	**Unchanged**	24	40	5	69
	5.9	21.4	1.11	28.41		11.65	19.42	2.43	33.5
Increased	17	21	14	52	**Increased**	13	23	12	48
	6.27	7.75	5.17	19.19		6.31	11.17	5.83	23.3
Total	138	111	22	271	**Total**	101	86	19	206
	50.92	40.96	8.12	100		49.03	41.75	9.22	100

Pearson chi2(4) = 93.9237 Pr = 0.000

Pearson chi2(4) = 45.1975 Pr = 0.000

and we run two binary logistic regressions for modelling the probability of experiencing an income drop and for the probability of a decrease in remittance between 2008 and 2013.

The logit model is a non-linear regression model that forces the output to be either 0 or 1. Our model has the following form:

$$P(y = 1|\boldsymbol{x}) = F(\beta_0 + \beta_1 x_1 + \cdots + \beta_k x_k) = F(\beta_0 + \boldsymbol{\beta x})$$

where the response probability is defined as $P(y = 1|x_1, x_2, \ldots, x_k)$, $\boldsymbol{x}$ denotes the vector of explanatory variables and $F(.)$ is the cumulative standard logistic distribution, with $0 < F(.) < 1$ for all values of the parameters and of $\boldsymbol{x}$. The dependent variable is equal to 1 if the migrant individual income (or remittances) decreased over the 5 year period since 2008, or 0 otherwise.

Variables' description

While many variables are used in both models to control individual characteristics and history of migration, the main explanatory variables for the probability of a decrease in income and for a drop in remittances do not completely overlap. Income trends are likely to be related to job characteristics and the overall level of labor market integration. Remittances instead may respond to changes in economic circumstances as well as to changes in family structure both in Italy and in the country of origin. Demographic variables consider migrant's sex, age, age at migration and consequent length of stay, formal level of education, additional training/vocational courses attended in Italy and migrant's legal status at the time of arrival. Variables that describe the migrant family structure between Italy and the country of origin, defined as first-grade family members (parents, siblings, partner and children), add important insights on the migratory history of the interviewed migrants. Together with the household structure in Italy (one or more working individuals in the household), these can be used as a proxy for the availability of connections here and there and on the level of integration into the country of destination.

Income and job characteristics are widely investigated with variables accounting for the type of job in terms of hours, contract arrangement, sector of occupation, dependent or autonomous status, the presence of one or more secondary jobs to top-up the main occupation (either in terms of hours and income).

Remittance variables refer to the estimated total amount of money sent annually, obtained by combining data on frequency and amount of each registered flow. The remittance/income ratio provides an estimate of the proportion of total income that is devoted to remittances. Moreover, a dummy for migrants who declare to receive money transfers from abroad, either their origin country or third countries where relatives reside, is also considered.

Birth country dummies are included to control for the impact of unobserved variables connected with the origin country, for example distance and possibility of personal visits to the home country throughout a year.

Income trends since 2008

Table 6 shows the odds ratios of the logistic regression. Odds ratios are the exponentiated logit coefficients, which represent the odds of $y = 1$ when one independent variable increases by one unit:

$$OR = \frac{P(y = 1|x + 1)/(1 - P(y = 1|x + 1)}{P(y = 1|x)/(1 - P(y = 1|x)}$$

Hence if the reported odds ratio is higher than 1, then the odds of $y = 1$ increases, while if $OR < 1$, the odds of $y = 1$ decreases for a unit increase of x.

Size and statistical significance of estimated odds ratios are interesting. Variables that account for the overall integration into the labor market seem to explain a big part of the variation in the expected outcome. Having a full-time occupation, being in a dependent, non-autonomous position and having a regular contract, lower the probability of an income decrease. Consistently, having a secondary occupation to top-up earnings from the principal earner is positively related to an income drop since 2008. Monthly income levels show a non-linear tendency, with the mid-category of €1000–1500 per month the most likely to experience an income drop other things

being equal. Specifications (2) and (3) add estimated odds ratios for different sectors of employment and job categories: while size and significance are not straightforward, this could be partially explained by the sample selection which excluded those who lost their job and had no income at all at the time of the survey. Indeed, workers in the manufacturing and construction sector could either experience a drop of income due to short-time work schemes (included in the sample) or a total loss of income due to a layoff (excluded from the sample). On the other hand, domestic and health workers and workers in restaurants and other services are more likely to have more flexible contract arrangements which allow for salary adjustments in time of crisis.

Control variables for individual characteristics also show interesting patterns. The non-linear effect of age, with younger migrants less likely to experience an income drop, has to be combined with migrant length of stay: more recent migrants are less likely to experience income mobility since the beginning of their presence in Italy. Education-related coefficients are not significant, which might be partly due to their correlation with job characteristics, while being the only income earner in the household is associated with higher probability of a negative income trend, as well as the dummy variable for being documented at the time of arrival. Other things being equal, control variables for the country of origin are not significant.

Since most predictors are specified as factor variables and the magnitude of each effect is difficult to understand with odds ratios, a more tangible way of presenting results and of accounting for the single effect of each predictor on the probability of experiencing an income drop is to calculate the adjusted predictions at representative values or for specific groups.

Graphs in Figure 3 present the predicted probability of an income drop setting some meaningful variables at specific values, by sex. This means

TABLE 6: Binary variable: income decreased since 2008 (odds ratio)

Variables	(1)	(2)	(3)
Female	0.598**	0.721	0.691
	(0.153)	(0.225)	(0.22)
Age (years)	1.209**	1.209**	1.184**
	(0.0957)	(0.0964)	(0.0948)
Age^2	0.998**	0.998**	0.998**
	(0.000965)	(0.000971)	(0.000971)
Length of stay: 6–10	4.091***	4.011***	4.125***
	(1.285)	(1.275)	(1.327)
Length of stay: 11–15	4.615***	4.491***	4.693***
	(1.611)	(1.583)	(1.676)
Length of stay: 15–+	3.040***	2.929**	3.334***
	(1.285)	(1.25)	(1.458)
Education level—medium	0.905	0.891	0.917
	(0.25)	(0.25)	(0.258)
Education level—high	0.633	0.65	0.793
	(0.226)	(0.234)	(0.298)
Training in Italy	1.198	1.21	1.286
	(0.278)	(0.283)	(0.322)
Documented at arrival	1.662**	1.667**	1.618**
	(0.396)	(0.401)	(0.394)

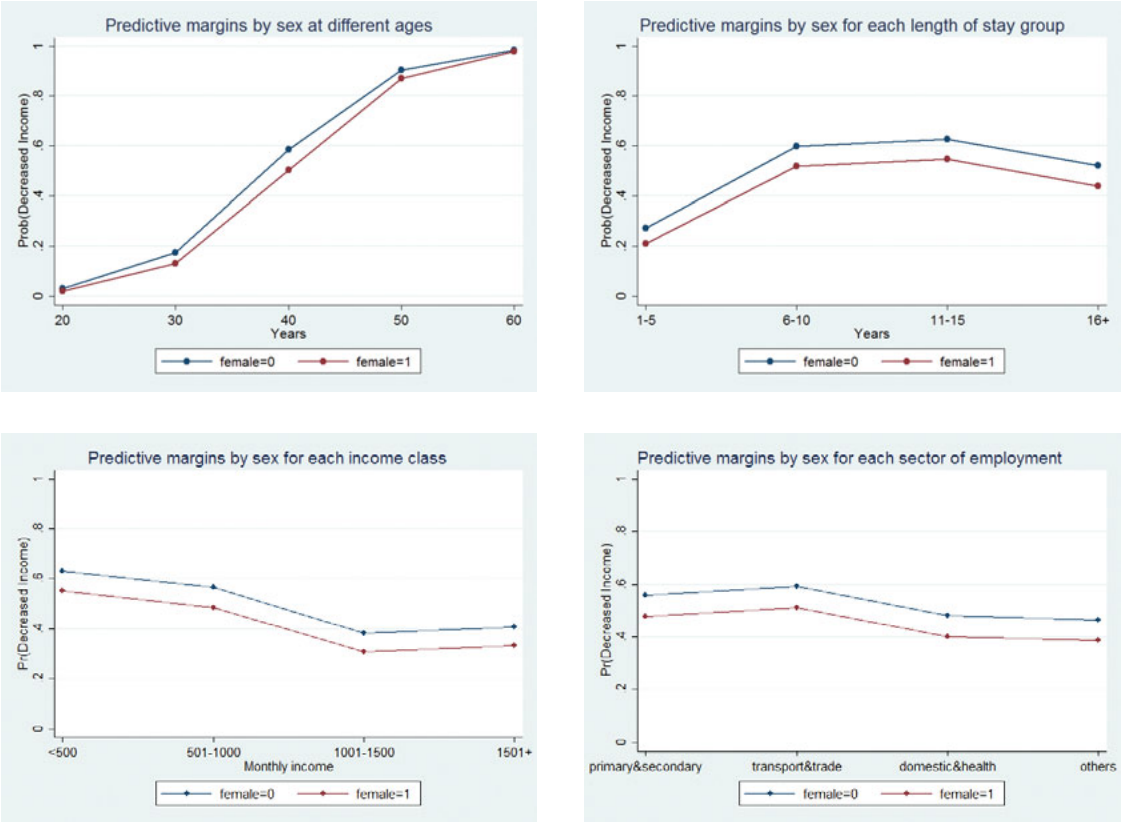
(continues)

TABLE 6: (*continued*)

Variables	(1)	(2)	(3)
Peru	1.062	1.116	1.024
	(0.319)	(0.352)	(0.326)
Romania	0.999	1.005	1.008
	(0.323)	(0.328)	(0.335)
Income class: 501–1000	0.769	0.77	0.782
	(0.281)	(0.284)	(0.291)
Income class: 1001–1500	0.391**	0.364**	0.389**
	(0.171)	(0.163)	(0.179)
Income class: 1501–+	0.412	0.403	0.466
	(0.235)	(0.233)	(0.275)
Mono income HH	1.719**	1.838**	1.726**
	(0.414)	(0.453)	(0.423)
Full-time	0.574**	0.578**	0.609*
	(0.151)	(0.154)	(0.163)
Contract	0.461**	0.464**	0.470**
	(0.14)	(0.142)	(0.145)
Dependent job	0.387***	0.409***	0.340***
	(0.119)	(0.129)	(0.118)
Second job	2.378***	2.365***	2.420***
	(0.686)	(0.687)	(0.717)
Job type: cook & barman			1.11
			(0.669)
Job type: domestic worker			2.037
			(0.971)
Job type: nurse/OSS			1.273
			(0.725)
Job type: seller & retailer			2.366
			(1.384)
Job type: shop owner			0.84
			(0.679)
Job type: worker			2.247*
			(1.036)
Sector: primary & secondary		1.446	
		(0.527)	
Sector: transport & trade		1.673	
		(0.642)	
Sector: domestic & health		1.059	
		(0.385)	
Constant	0.0448*	0.0324**	0.0363**
	−0.0725	(0.0534)	(0.0608)
Observations	474	473	474

Standard errors in parentheses
***p < 0.01, **p < 0.05, *p < 0.1

FIGURE 3: Predictive margins calculated at fixed values of specific variables, holding the other predictors at their means, by sex



that in each group we compare three artificial groups, which take specific values for age, length of stay, income, sector of employment and education level, while all other variables are considered at their mean values. Female migrants always show a lower probability of an income drop. Lower income classes as well as manufacturing, transport and trade sectors present the higher probability of an income drop. Such results are consistent with the overall Italian labor market performance during the crisis and with the gendered specialization of migrant women in the domestic and health sectors.

Trends in the remitted amount since 2008

The second step of our empirical exercise mirrors the one presented above. A logit model was used to determine the factors that affect the probability of a decrease in the annual amount of remittances since 2008. Table 7 reports the estimated odds ratios. As expected, variables that account for the economic situation of the migrant play a big role in explaining a drop in remittances: negative trends in income size and income security show a significant impact on the probability of decreasing remittances, irrespective from the income level. Moreover, being the sole income earner in the household also negatively affects the remittance trend while receiving money from abroad (either from the household at origin or from relatives migrated in third countries) shows a positive but non-significant effect on the outcome variable.

Alongside economic conditions, other individual and household characteristics present interesting patterns. Length of stay in Italy, often used as a proxy for the level of integration, does not have a straightforward interpretation as the impact on the probability of a decrease in remittances changes for different length groups. On the contrary, attending vocational or training courses in Italy, in addition to a formal education (almost always acquired in the country of origin) increases the odds of a decrease in remittances.

TABLE 7: Binary variable: remittances decreased since 2008 (odds ratios)

Variables	(1)	(2)	(3)
Female	1.556	1.14	1.14
	(0.429)	(0.408)	(0.409)
Age (years)	1.075	1.07	1.069
	(0.0898)	(0.0956)	(0.0968)
Age^2	0.999	0.999	0.999
	(0.00101)	(0.00109)	(0.0011)
Length of stay: 6–10	0.421***	0.398***	0.397***
	(0.136)	(0.138)	(0.138)
Length of stay: 11–15	0.599	0.555	0.553
	(0.217)	(0.213)	(0.216)
Length of stay: 15–+	0.329**	0.285**	0.283**
	(0.15)	(0.142)	(0.144)
Education level—medium	1.592	1.335	1.337
	(0.467)	(0.418)	(0.418)
Education level—high	1.217	1.023	1.024
	(0.463)	(0.417)	(0.417)
Training in Italy	2.059***	1.982**	1.983**
	(0.524)	(0.55)	(0.55)
Documented at arrival	0.934	0.919	0.919
	(−0.236)	(0.251)	(0.251)
Peru	0.566*	0.526*	0.525*
	(0.188)	(0.195)	(0.196)
Romania	1.065	1.368	1.363
	(0.375)	(0.515)	(0.518)
Income class: 501–1000	0.756	0.811	0.811
	(0.281)	(0.324)	(0.324)
Income class: 1001–1500	1.547	2.038	2.033
	(0.678)	(0.967)	(0.967)
Income class: 1501–+	2.169	2.026	2.018
	(1.387)	(1.416)	(1.413)
Income decreased since 2008	7.540***	8.525***	8.519***
	(1.987)	(2.468)	(2.467)
Income security decreased	1.654**	1.636*	1.635*
	(0.418)	(0.444)	(0.443)
Remittance to income ratio	0.505	0.344	0.349
	(0.331)	(0.258)	(0.269)
Mono income HH	1.868**	1.789**	1.794**
	(0.493)	(0.507)	(0.512)
Receiving remittances	1.507	1.482	1.481
	(0.56)	(0.584)	(0.584)

Variables	(1)	(2)	(3)
At least 1 child in Italy	1.795**		1.023
	(0.469)		(0.325)
N. of recipients decreased since 2008		11.98***	11.95***
		(5.326)	(5.331)
At least 1 relative arrived in Italy since 2008		1.767**	1.751*
		(0.465)	(0.512)
Sector: primary & secondary		1.17	1.17
		(0.487)	(0.487)
Sector: transport & trade		1.455	1.454
		(0.6)	(0.599)
Sector: domestic & health		2.240**	2.235*
		(0.921)	(0.922)
Constant	0.0277**	0.0204**	0.0209**
	−0.0479	(0.0377)	(0.0392)
Observations	470	469	469

Standard errors in parentheses
***p < 0.01, **p < 0.05, *p < 0.1

Finally, the family structure in Italy and abroad has a significant impact on the remittance trend: having at least one child residing in the same household in Italy and having undergone at least one process of family reunification since 2008 (at least one first-grade relative in Italy) have a strong impact on the odds of a remittance decrease. Moreover, a decrease in the number of remittance recipients abroad explains the big variation in remittances. This might be a confirmation of the effect of family reunification: the number of recipients decreases when they join migrants in Italy, or changes in the demographic dynamics of relatives in origin countries (growing up until the working age or marriage, further migrating in a third country, dying, etc.).

Again, since understanding what an increase/decrease in odds means is not easy, predicted probabilities and marginal effects help disentangle the effect of single predictor variables on the outcome variable. Figure 4 shows adjusted predictions for each length of stay, income class and sector of employment, while marginal effects are presented in Table 8. Marginal effects calculated for some meaningful predictor while holding all other variables at their means provide a good approximation of the change in the probability of experiencing a remittance drop produced by a one-unit change in the listed variables. Hence, having two otherwise average migrants, one experiencing an income drop since 2008 and the other not, the probability of the first of having decreased remittances is 48 percent higher. Also, the probability of a remittance drop decreases at around 25 percent for two intermediate length-of-stay groups while it grows at about 14 percent for the sole income earners in the household (mono-income household). As for family characteristics in Italy and abroad, a decrease in the number of recipients at origin results in an increase in probability of 47 percent of a decrease in remittances, while family reunification processes over the last five years increase the probability at around 14 percent. Also, Peruvians show a −16 percent probability of decreasing remittances. This might be due, among other things, to the distance from their origin country. Peruvians are less likely than Moroccans and Romanians to visit their origin household and monetary remittances

FIGURE 4: Predictive margins calculated at fixed values of specific variables, holding the other predictors at their means, by sex

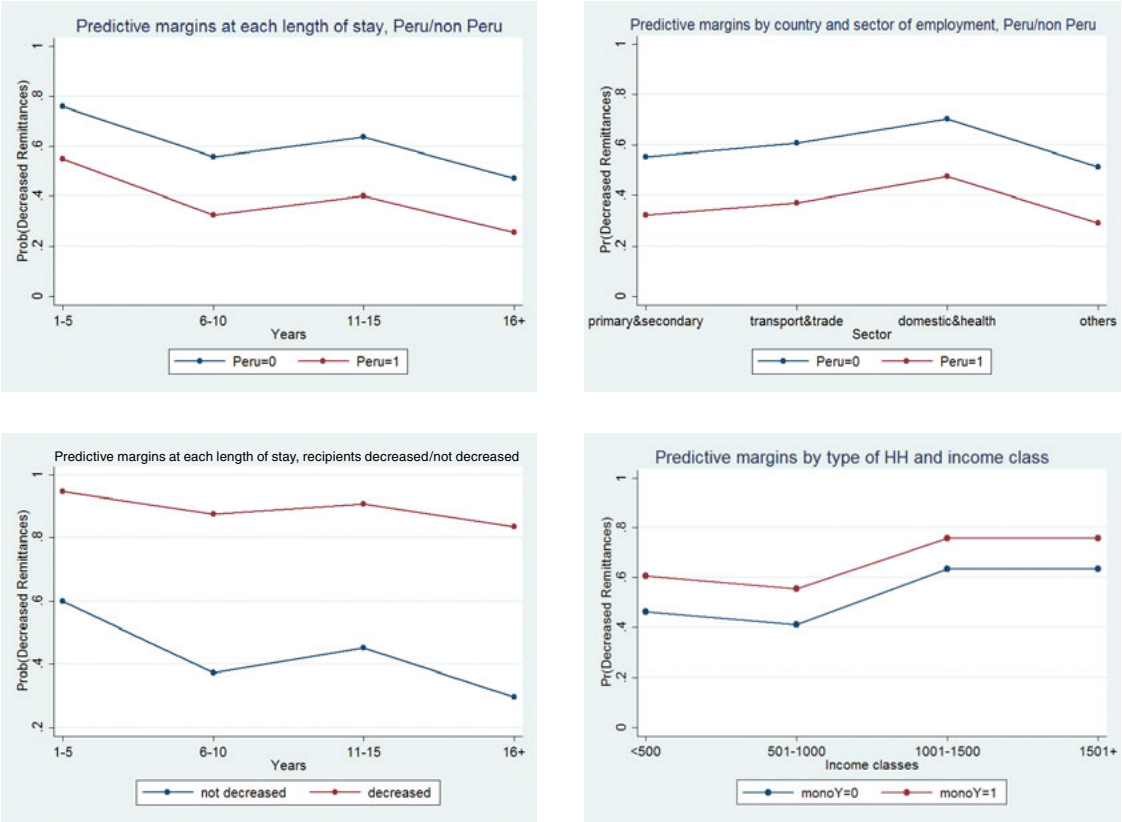


TABLE 8: Marginal effects—Change in probability of a remittances decrease when the predictor increases by 1 unit

Variables	Marginal effects (dydx)
Income decreased since 2008	0.486***
	(0.0552)
Income security decreased	0.122*
	(0.0668)
Mono-income HH	0.143**
	(0.0682)
Length of stay: 6–10	−0.220***
	(0.0787)
Length of stay: 11–15	−0.138
	(0.0886)
Length of stay: 15–+	−0.303***
	(0.116)
N. of recipients decreased since 2008	0.468***
	(0.0519)
At least 1 relative arrived in Italy since 2008	0.137**
	(0.0698)
Peru	−0.160*
	(0.0908)
Observations	469

Standard errors in parentheses
***p < 0.01, **p < 0.05, *p < 0.1

may represent a substitute for money, presents and personal attachment brought directly during a visit. This is also coherent with the fact that Peruvians register the highest remittance to income ratio, devoting a high share of their income to remittances. Summing up, the trend in income since 2008 is not the only determinant of remittance trends over the same period. Family reunification processes and changing family structures in Italy and in the country of origin increase the economic needs and expenditures in Italy, while migrants receive less and less pressure (demand) from the origin household.

4 RESULTS AND FINAL CONCLUSIONS

In this paper, we sought to investigate how the economic crisis has shaped the economic conditions and transnational behaviors of migrants in Italy over the last five years. Based on a recent survey (The World Bank 2014), this paper has explored the effect of the economic crisis on income trends and on the flow of monetary remittances sent to the families left home among three surveyed groups in Turin—Moroccans, Peruvians and Romanians—who represent the largest migrant nationalities in the city and offer a comprehensive picture of the differentiated integration paths in terms of gender, length of the migratory experience, labor market specializations and the related economic stability. Consistent with national and local official data (ISTAT 2014; Fullin and Reyneri 2013), our empirical analysis confirms the negative trends in income and economic stability for the surveyed migrants, which is also mirrored by decreasing remittances.

Results show a widespread worsening of the economic conditions since the outbreak of the crisis in 2008, with slightly less than half of the total sample experiencing a decrease in income. As expected, logistic regression results confirm the importance of labor market integration variables in determining income outcomes. Having a full-time, dependent job with a regular contract protects migrants from income losses more than being part-time employed, self-employed or with secondary jobs. Also, lower income levels (below €1,000 per month) are associated with a higher probability of income drop. Furthermore, the income trend varies systematically by sex, age and migration history: women tend to resist more than men to an income drop, while age and length of stay act in a non-linear, combined way on income trends. A shorter migratory experience is, on average, associated with less income mobility, hence less probability of a decrease in income, while older migrants suffer more than younger generations. The strong sample selection can help explain why sectors of employment and types of occupation are not significantly associated with income outcomes. Excluding from the sample those who lost their job and had no income at the time of the survey might have hindered the relatively worse conditions of typically male sectors such as manufacturing, constructions and transports, in comparison to the domestic and healthcare sectors where women are concentrated. Moreover sectors and types of occupation differ for the prevailing contractual arrangements and average level of job and income security, which we are not able to fully grasp due to the limitations of our data.

The observed economic instability seems to have produced effects on migrants' capacity to keep remittance flows constant over time. Considering monetary transfer to the origin household as one of the most important transnational activities of migrants, we modelled the individual remittance trend since 2008 as a function of migrant's ability to earn and save a share of available income for remittance purposes and of the type of needs and claims of migrant family members, either left in the country of origin or residing abroad with the migrant. Hence, we assumed that migrant's remitting capacity is directly linked to the level of economic integration at destination.[18] Our empirical results confirm that economic trends in terms of income size and stability strongly affect remittance trends, irrespective of the income level. Moreover, migrants in single-income households are more likely to reduce their remittances. Finally, the presence of reverse remittances, which

[18] Eralba Cela, Tineke Fokkema, and Elena Ambrosetti. 2013. "Variation in Transnationalism among Eastern European Migrants in Italy: The Role of Duration of Residence and Integration." *Southeast European and Black Sea Studies* 13 (2): 195–209.

is particularly relevant in the case of Moroccan migrants, is not significantly associated with a reduction in remittances, confirming that transnational flows in both directions can coexist as part of reciprocal and bi- or even multi-directional social relations.[19]

Interestingly, the economic conditions of migrants are not enough to fully explain remittance trends and other individual and household characteristics help complete the picture. In particular, the structure of the migrant family at origin and at destination is strongly associated with a variation in remittance flows. Irrespective of income trends, variables which account for migrant integration at destination both in the sense of pursuing additional training and vocational courses and of undergoing reunification processes explain a big part of the diminishing trend of remittances. Migrants who have at least one child living in Italy as well as those who welcomed the arrival of a new family member in Italy through family reunification processes over the last five years are more likely to decrease remittances. The same significant relation is proved for migrants who declare a decreasing number of recipients, either due to new outmigration, to the labor market entry of previous dependent young members or to the death of older relatives in the country of origin.

Finally, dummy variables for the countries of origin show differentiated trends in income and remittances among the three subsamples. After considering demographic characteristics and type of economic integration into the labor market, income trends of Moroccan are no more worse-off than those of Peruvians and Romanians. On the remittance side, instead, Peruvians resist more than Moroccans and Romanians to a decrease in transnational monetary flows. This might be due to other unobserved variables, such as other transnational practices and activities which may complement or substitute remittances in specific circumstances. Data on personal visits to the origin countries, which are likely to bring additional money and presents, and to reinforce the personal sense of belonging and attachment between the migrant and the origin household (Levitt 2003), would certainly help explain the degree of stability of Peruvian remittances, since migrants from overseas countries are less likely to visit their country on a regular basis than migrants from European and Northern African countries.

Several limitations to our study must be noted. First, our sample is taken from a single Italian city and it hardly provides evidence applicable to the whole country. Moreover, the sampling methodology and criteria applied produced a selected sample, which includes only migrants which "survived" in terms of income and remittances since 2008 and do not observe behaviors and characteristics of migrants who either lost their job or did not send remittances at the time of the survey as a control (see The World Bank 2014, 42–43 for a discussion on sample's drop-outs).

Nevertheless, our empirical results are consistent with the most recent official data on the impact of the economic crisis on native and migrant workers in terms of income losses and increasing insecurity, especially in the manufacturing, construction and transport sectors. Our results in terms of sex are coherent with the prevalence of a gendered division of labor, with women mainly concentrated in the domestic, homecare and healthcare sectors.

Also, we found evidence that economic conditions during the crisis hampered the ability of migrants to keep remittances stable over time. Although remittance trends are also dependent upon other individual and household characteristics, which account for the degree of integration at destination, the economic crisis has severely undermined the overall financial stability of migrants and their ability of fulfilling their transnational roles, thus challenging their broader migration project.

[19] Valentina Mazzucato. 2011. "Reverse Remittances in the Migration–development Nexus: Two-Way Flows between Ghana and the Netherlands." *Population, Space and Place* 17 (5): 454–68.

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APPENDIX

TABLE 9: Income trend since 2008—Mutinomial logit, base outcome "income unchanged"

Variables	(1)		(2)		(3)	
	Decreased	Increased	Decreased	Increased	Decreased	Increased
Income class: 501–1000	−0.579	0.891	−0.0174	0.929	−0.00300	0.964
	(0.353)	(0.597)	(0.413)	(0.655)	(0.417)	(0.658)
Income class: 1001–1500	−1.378***	1.261**	−0.646	1.167	−0.730	1.208*
	(0.406)	(0.624)	(0.505)	(0.715)	(0.520)	(0.724)
Income class: 1501–+	−0.702	1.786**	−0.209	1.890**	−0.200	1.930**
	(0.612)	(0.805)	(0.713)	(0.908)	(0.721)	(0.921)
Age class: 30–49	−0.107	−0.766**	−0.134	−0.507	−0.0915	−0.443
	(0.330)	(0.347)	(0.401)	(0.407)	(0.409)	(0.414)
Age class: 50–+	−0.621	−1.488***	−0.661	−1.219**	−0.641	−1.141*
	(0.413)	(0.508)	(0.511)	(0.582)	(0.519)	(0.595)
Female	−0.670***	0.257	−0.231	0.122	−0.00675	0.0593
	(0.239)	(0.282)	(0.309)	(0.338)	(0.379)	(0.410)
Length of stay: 6–10	1.483***	0.272	1.396***	0.218	1.389***	0.245
	(0.311)	(0.336)	(0.353)	(0.362)	(0.358)	(0.365)
Length of stay: 11–15	1.396***	−0.0772	1.408***	0.0174	1.389***	0.0424
	(0.329)	(0.381)	(0.386)	(0.418)	(0.390)	(0.421)
Length of stay: 15–+	1.378***	−0.0809	1.195**	−0.0463	1.141**	−0.0387
	(0.393)	(0.477)	(0.471)	(0.536)	(0.476)	(0.540)
Income security decreased since arrival			1.789***	−0.165	1.802***	−0.154
			(0.268)	(0.296)	(0.270)	(0.296)
Mono income HH			0.373	−0.492	0.442	−0.494
			(0.284)	(0.353)	(0.290)	(0.358)
Full-time			−0.566*	0.0862	−0.568*	0.0632
			(0.312)	(0.378)	(0.316)	(0.383)
Contract			−0.482	0.286	−0.486	0.279
			(0.354)	(0.454)	(0.358)	(0.456)
Dependent job			−0.774**	0.539	−0.642*	0.628
			(0.370)	(0.499)	(0.381)	(0.507)
Education level—medium			−0.0580	0.0771	−0.0698	0.0822
			(0.315)	(0.375)	(0.318)	(0.376)
Education level—high			0.302	1.100**	0.319	1.078**
			(0.425)	(0.468)	(0.428)	(0.470)
Training in Italy			−0.0158	−0.200	0.00515	−0.187
			(0.280)	(0.321)	(0.282)	(0.324)
Marital status: single			−0.00109	−0.102	0.00892	−0.110
			(0.320)	(0.357)	(0.322)	(0.359)
Marital status: divorced/ separated			0.647*	0.158	0.629	0.128
			(0.382)	(0.457)	(0.383)	(0.459)

(continues)

TABLE 9: (*continued*)

Variables	(1)		(2)		(3)	
	Decreased	Increased	Decreased	Increased	Decreased	Increased
Morocco			0.233	−0.154	0.184	−0.222
			(0.393)	(0.425)	(0.398)	(0.430)
Peru			−0.584*	−1.389***	−0.514	−1.382***
			(0.323)	(0.371)	(0.338)	(0.387)
Sector: primary & secondary					0.172	−0.398
					(0.437)	(0.474)
Sector: transport & trade					0.541	−0.0551
					(0.469)	(0.506)
Sector: domestic & health					−0.159	−0.236
					(0.429)	(0.446)
Constant	0.524	−0.851	0.0643	−1.269	−0.249	−1.182
	(0.442)	(0.643)	(0.705)	(0.917)	(0.763)	(0.967)
Observations	477	477	477	477	476	476
Prob. > chi2	0.0000		0.0000		0.0000	
Pseudo R2	0.0810		0.2149		0.2176	

Standard errors in parentheses
***p < 0.01, **p < 0.05, *p < 0.1