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Post electoral crisis and international remittances: evidence from Côte d'Ivoire

Yao Silvère Konan

Abstract

This paper analyzes the determinants of international remittances received during the post electoral crisis in Côte d'Ivoire, using data collected 5 months after the end of the conflict. The author finds that the crisis has been a means of mobilizing social capital and demonstrating altruistic and insurance behaviors beyond the bounds of kinship. Transfers are mainly sent for consumption purpose, but amounts transferred for small investments and human capital are higher. Moreover, the propensity to transfer higher amounts decreases when emigration occurred after the November 2004 violent events. Altruism resists to time.

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Keywords Remittances; Côte d'Ivoire; post electoral conflict; Sub-Saharan Africa; migration

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I. INTRODUCTION

Since its independence in 1960, Côte d'Ivoire enjoyed political stability which permitted the implementation of economic and social development programs. This led the country to improved living standard and made it one of the first immigration countries² in West Africa (Thuinder, 1980, Russell, 1998). However, the weakening of the Ivorian economic development model, the employment crisis, poverty and identity problems led to a political crisis initiated by the December 1999 coup (Dembélé, 2009). The coup was a vector of several crises, the most important of which were: (i) the coup attempt in September 2002, which turned into an armed rebellion controlling the northern half of the country; (ii) the post-election crisis in December 2010, which resulted in armed clashes with more than 3,000 deaths, more than 500,000 internally displaced persons and more than 200,000 asylum seekers (INS et al., 2013).

At the same time, military-political instability and the economic crisis resulted, on the one hand, to low attractiveness of Côte d'Ivoire. Indeed, the ratio of the stock of immigrants to the population was in constant decline over time. On the other hand there were an acceleration of the emigration movement with a ratio of the stock of emigrants to the population reaching the 5% threshold in 2010, whereas it was below 1% until 2009. In addition, statistics on remittances reveal a significant increase in transfers of migrants to Côte d'Ivoire with an acceleration during the period of conflict (WDI, 2016). This situation, which appears in the macroeconomic data, reflects a microeconomic reality that remittances are part of the survival and coping strategies of households in conflict or post-conflict situations. The survival of families in war and crises depends more on remittances from household members living abroad (Fagen, 2006). Despite this, the economic role of remittances in conflict and post-conflict situations is poorly documented in the economic literature, probably because of data availability and its poor quality. In recent years, studies by Fransen and Mazzucato (2014) in Burundi, Koczan (2016) on the Germany-Ex Yugoslavia corridor in the early 1990s, GHORPADE (2017) in Pakistan and Edelbloude et al. (2017) on the Arab Spring in Tunisia, provide a better understanding of the topic without exhausting it.

This paper contributes to the economic literature by bringing the West African evidence using survey data collected during the conflict's period. We show that: (i) remittances are insurance against falling incomes; (ii) the crisis proffer an opportunity to demonstrate the altruism of emigrants beyond kinship; (iii) contrary to economic theory, altruism is not extinguished over time by maintaining regular contacts between migrants and their correspondents, made possible

by Information and Communication Technologies (ICT); (iv) the period of emigration significantly influences the amounts sent by migrants to their correspondents in Côte d'Ivoire.

The rest of the paper is structured as follows. The next section focuses on theory and empirical studies of the determinants of remittances; Section III presents the method of analysis and data; Section IV presents the characteristics and determinants of remittances. Section V discusses the results and concludes the paper.

II. DETERMINANTS OF REMITTANCES: THEORY AND EMPIRICAL STUDIES

1. Theoretical framework of the determinants of international remittances

In the literature on the determinants of remittances, two main trends emerge. One considers migration to be a decision of the individual that maximizes its utility function and the other considers that the decision to migrate is part of an insurance and risk diversification strategy to which the household is exposed (New Economics of Labor Migration (NELM)). In the latter case, the household of origin is the decision's unit, whereas in the individual strategy, the decision's unit is the individual.

The first category of models explains remittances in terms of altruism (Stark, 1985) or pure selfishness. In the strategy of altruism, the individual's level of utility depends not only on its consumption but also on that of the family's member in the home country. The altruistic behavior aims to transfer money without expecting anything in return, to the extent that it is done independently of the financial situation of the migrant (Johnson and Whitelaw, 1974). Altruism appears as transfers increase towards families experiencing income declines and it gradually decreases with time spent in the host country or when the number of migrants from the same household increase (Funkhouser, 1995). In the pure egoism strategy, the migrant sends large sums of money if he feels the desire to resettle in the country of origin and also so that the members of his family monitor his own investments.

In the context of migration as a family diversification strategy (Lucas and Stark, 1985, Taylor, 1999, Stark, 1991, Agarwal and Horowitz, 2002), remittances are for the reimbursement of tuition fees (Poirine, 1997) or serve to help the household of origin to be resilient to various shocks and risks (Azam and Gubert, 2006). Thus, transfers tend to increase in times of economic hardship and decline as difficulties become less severe (Bodvarsson and Van Den Berg, 2009). Transfers are then endogenous to the migration process and then act as substitutes for imperfections in insurance and credit markets in developing countries (Bettin and Zazzaro,

2012, Ambrosius and Cuecuecha, 2013, Woodruff and Zenteno, 2007, Giuliano and Ruiz-Arranz, 2009).

Since these two assumptions are sometimes complementary, this paper, like Koczan (2016), is not intended to test one hypothesis to the detriment of the other, but rather to seek the characteristics and the individual determinants of remittances received by Ivorian households during the post-election crisis.

2. Remittances during and after crises

The economic literature on remittances has reached a consensus that migration and remittances are part of household strategies to adapt to the risks and various shocks they face. Remittances are stable resources for households experiencing economic crises or natural disasters (World Bank, 2006). They are mostly increasing in situations of declining incomes due to various shocks (earthquakes, droughts, tsunamis and cyclones, floods, etc.) and allow households to improve their consumption (Arouri et al., 2015; Mohapatra et al., 2009). Empirical studies have shown the role of migration and remittances as a strategy to adapt households to the shocks they experience (David and Marouani, 2015, Rosenzweig and Stark, 1989, Jaime Lara, 2016, Konseiga, 2006). The role of remittances during political crises, wars and armed conflicts is not sufficiently addressed in the literature. Fransen and Mazzucato (2014), analyzing the use of remittances in a post-conflict urban situation in Bujumbura (Burundi), have shown that remittances significantly affect the living conditions and food security of recipient households. These remittances that increase in periods of conflict or post-conflict as shown by Koczan (2016) in the 1990s in the former Yugoslavia or by Edelbloude et al. (2017) in Tunisia during the Arab spring, offer households the means of subsistence (Fagen, 2006, Van Hear, 2002, Bodvarsson and Van Den Berg, 2009). They allow households to improve their consumption rather than make investments. In this sense, remittances received in conflict or post-conflict areas are therefore insurance for poor households (Fransen and Mazzucato, 2014) and can play a positive role in absorbing the economic shocks resulting from political revolutions such as in Tunisia. In this view, the increase in the propensity to transfer during the political crisis reflects the manifestation of emigrants' social capital relative to their country of origin (Edelbloude et al., 2017). However, Ghorpade (2017) in Pakistan, on the conflict's effects on receiving remittances, contrary to previous studies, show that long-term exposure to conflict reduces the probability of households to receive remittances and the average amounts received. For

households in the lowest quintile of food consumption expenditure, conflicts have a positive effect on the probability of receiving remittances, what shows the existence of heterogeneous effects in the understanding of the causal link “conflict – remittances”.

In addition, the departure conditions of the country of origin affect the remittances decision and the amounts transferred. Violent departure conditions have a negative effect on migrant remittances to their family in home country, while attachment and perception of a better economic situation in the country of origin favor remittances (Arestoff et al., 2012).

3. Political situation, migration and remittances to Côte d'Ivoire

Côte d'Ivoire since 1960 has opted for a liberal policy of welcoming and strongly integrating immigrants to develop the country's economic potentials and also make African integration a reality (Dembélé, 2009). On the economic and social front, growth was strong and sustained until 1980 (Thuinder, 1980) and Côte d'Ivoire is one of the main immigration countries of Africa with a ratio of migrants stocks relative to the total population of 11.2% in 2010 and a foreign population ratio of 24% (RGPH-2014). However, the financial crisis of 1980, which led to the economic crisis of the 1990s and the political crisis of the 2000s, called into question the place and role of foreigners in Ivorian society. Initially, conflicts of cohabitation between Ivorian and immigrants took place for the control of increasingly scarce land resources (Dembélé, 2009). These conflicts, relayed and amplified by the political leaders, combined with the employment crisis and the deterioration of living conditions with a poverty rate that rose from 10% to 48.9% from 1985 to 2008 (INS, 2012), led to a deep political and social cohesion crisis, with the culminating point being the post-election crisis of 2010-2011. Along with the deterioration of living conditions and military-political instability, the Ivorian emigration movement has been strengthened. The stock of Ivorian immigrants as a proportion of the population was less than 1% until 2009 and rose to 5.4% in 2010 to just over 4% in 2013 (UNPD, 2011). This increase in the stock of emigrants also has an impact on remittances received. In terms of value, inward transfers increased from \$ 12 million to \$ 315 million from 1975 to 2009 and peaked at \$ 373 million and \$ 397 million respectively in 2010 and 2011. As a share of GDP, remittances from migrants to Côte d'Ivoire, are marginal and remain below 1.4% of GDP over the period 1975-2016 except for the years 2010 and 2011 where these proportions have reached only 1.50% and 1.57% respectively. After the two-year peak of the Ivorian crisis, transfers received in both volume (US \$ million) and GDP fell and stood at US \$ 346 million in 2016, at a rate of 0.96% of GDP. (Figure 1).

This significant increase in both volume and proportion of incoming remittances during the particular crisis years (2010 and 2011) is of interest in analyzing the role of these transfers in the survival and insurance strategies of the households' recipients of these funds.

FIGURE 1

III. DATA AND METHOD OF ANALYSIS

III.1- Data

The data used in this paper was collected as part of the “International Remittances, Poverty and Inequality: The West African Case” (IRPI-TWAC) Project funded by the International Development Research Centre (IDRC) as part of its Globalization, Growth and Poverty program. The survey took place with 298 recipients in the money transfer agencies of the city of Abidjan in October 2011. It was not possible to collect nationwide data because bank branches and Money transfer Agencies were still closed due to insecurity and small areas of conflict in the regions at the time of the survey.

The targeted population is made up of all individuals who receive money from abroad through money transfer companies, regardless of age and nationality. In the absence of a list of beneficiaries of remittances residing in Abidjan (sampling frame), the list of bank branches and money transfer agencies was provided. The sampling frame identifies the location of the remittances and not the beneficiaries. The most appropriate type of sampling in this case is the two-stage stratified sample. In the first stage, the bank was drawn, an intermediate entity that makes it easier to capture individuals from the targeted population. Inside each drawn bank, individuals from the target population attached to them (second degree) were sampled. At the first stage, 33 bank branches or money transfer agencies were randomly selected and at the second stage, the interviewer interviewed the first nine (9) available transfer recipients who agreed to participate to the survey. The sample size was set at 297 remittances receivers. Data collected on the basis of this sampling design are treated as if it were a simple random survey.

III.2- Method for analyzing the determinants of transferred resources.

A descriptive and explanatory analysis was used to highlight the characteristics and determinants of remittances in Côte d'Ivoire. The respondents reported three types of

remittances: (i) remittances received on average before the crisis; (ii) those received during the conflict period from December 2010 to April 2011; (iii) amounts received on the day of the survey. According to the type of the endogenous variable “remittance” (nominal or categorical), and after the tests carried out, two models were chosen: the Ordinary Least Squares (OLS) model and the ordered PROBIT model. The OLS model is used to estimate the determinants of remittances received under normal conditions while remittances received on the day of the survey are estimated by an ordered PROBIT model.

According to the literature review of the previous section, several variables can be used as explanations: age, relationship between the sender and the recipient, the professional activity of the recipient, the sex of the sender and the recipient, the final use of funds received (investment, human capital building or short-term consumption, altruism), the number of transfers received, length of stay of the migrant in the host country. Some of these variables were removed from the final model presented in the regression as a result of the various validity tests of the model or their non-significance.

The models finally adopted and presented hereafter are of the following form:

The OLS model:

$$Y_i = \alpha_0 + \alpha_1 age_i + \alpha_2 Numtr_i + \alpha_3 precusage_i + \alpha_4 employment_i + \alpha_5 sex_i + \alpha_6 enduse_i + \alpha_7 lstay + \mu_i \quad (1)$$

With:

Y = Amount of remittances received.

Age: Age of the individual receiving the remittance

Numtr: Number of remittances received

Precusage: Pre-definition of an end use of the remittance by the migrant

Employment: Main employment of remittance recipient

Sexerep: sex of the remittance recipient

Sexepf: sex of the funds provider

Endse: end use of funds received

Lstay: length of stay of the migrant in the host country

The Ordered PROBIT model

The probability of receiving remittance Y_i is an ordered variable with m modalities, which depends on a continuous latent variable Y_i^* not observed. This variable Y_i^* is the optimal amount of the remittances. It is equivalent to:

$$Y_i^* = \beta_0 + \beta_1 age_i + \beta_2 Numtr_i + \beta_3 precusage_i + \beta_4 employment_i + \beta_5 sex_i + \beta_6 enduse_i + \beta_7 lstay + \varepsilon_i \quad (2)$$

$$Y_i = \begin{cases} 1 & si \ Y_i^* < \$ 100 \\ 2 & si \ \$ 100 \leq Y_i^* < \$ 200 \\ 3 & si \ \$ 200 \leq Y_i^* < \$ 600 \\ 4 & si \ \$ 600 \leq Y_i^* < \$ 1000 \\ 5 & si \ Y_i^* \geq \$ 1000 \end{cases} \quad (3)$$

IV. SOCIO-ECONOMIC CHARACTERISTICS OF RECEIVERS, MIGRANTS AND LEVELS OF REMITTANCES

IV.1. Profile of remittances providers and recipients, and relationships

Profile of recipients

The database contains 298 remittances recipients, 89% of whom were born in Côte d'Ivoire, 9% in ECOWAS countries and 2% in other African countries. The average age of recipients is 35 years and they are 52% male. Most of them work in paid employment (62%), of which 63% regularly receive a salary. They maintain regular contacts (84%) mainly by telephone with their correspondents (Table 1).

TABLE 1

Profile of providers

Most of them live in the European Union countries (70%), the United States and Canada (14%), ECOWAS (9%) and other countries (7%). They are predominantly male (65%) and their average age is 39 years. They have an average migration time of 12 years. Most of them emigrated from the year 2000, which is the year from which Côte d'Ivoire became socio-politically unstable. However, those who emigrated between 2000 and the end of 2004³ (7 to

12 years in the host country), sent most frequently remittances (Figure 2). The majority of correspondents in the host countries work in the tertiary sector (90%), 6% are technicians or engineers in the industrial sector, 1% works in the primary sector and 3% are students.

Relationship between providers and recipients

Recipients receive both remittances from family members and from friends and other acquaintances. Before the crisis, the proportion of friends and acquaintances in remittances was 14% compared to 37% at the height of the crisis.

FIGURE 2

IV.2. Characteristics of remittances received in normal, in conflict and post-conflict situations

The cumulative amount of remittances received under normal circumstances is \$ 95,269 compared to \$ 42,306 for those received between December 2010 and April 2011. The average amount per remittances received during the crisis is \$ 381 compared to \$ 322 under normal circumstances (Table 2).

TABLE 2

Remittances received in general from the United States and Canada are the highest, albeit less frequent, than those received from the European Union countries. These remittances are valued at an average of US \$ 380 for the US against US \$ 330 and US \$ 236 for the EU and Africa respectively (Table 3).

TABLE 3

Level of information between recipients and providers, and amounts transferred

The level of information between recipients and providers also seems to be related to the level of the amounts transferred. When they are in touch on a regular basis, the amounts received are greater. For example, the average amounts received during the crisis are \$ 393 when the sender and receiver have regular contacts against \$ 293 otherwise. In addition, amounts transferred by friends and acquaintances average \$ 425 versus \$ 310 for parents. However, remittances sent

by family members are regular for one out of two recipients while they are casual and irregular for two out of three cases when they are from other people (Table 3).

Age, sex and remittances amounts

The sex of the recipient appears to affect the amounts transferred. When the recipient is a man, the sums transferred are more important than when she is a woman. The same is true for money remitters except for transfers received during the crisis where women averaged \$ 430 per remittance versus \$ 363 for men (Table 3).

The age group over 42 years receives more money per remittances than other age groups. In general, the amounts received and sent increase with age of recipients and emigrants. On the other hand, when the recipient has a paid activity, the amounts he receives per remittance are larger.

Length of stay of migrants, amounts and uses of sums transferred

The amounts received in normal and post-conflict situations increase with the length of stay of migrants in the host country. On the other hand, the amounts of remittance during the peak period of the post-electoral crisis have an irregular evolution. The average amounts by remittance are higher for those who emigrated after 2009 (less than 3 years of residence) and for those who emigrated between 1999 and end of 2004 (7 to 12 years of residence). The average amounts remitted are respectively \$ 531 and \$ 365 respectively for less than 3 years and 7 to 12 years of stay in the host country.

Most migrants provide guidance as to the usage of the funds (62%). In these cases, the amounts remitted are larger. On average, migrants send to their \$ 369 when they define the usages themselves against \$ 244 in the other alternative. The average remittance sent when the end uses are predefined, for the expenses of construction and repair of real estate are \$ 782, \$ 356 for small business, \$ 250 for education and training, \$ 232 for consumption (\$ 232) and \$ 160 for health care. Considering the frequency of use, migrants allocate funds to the following principal uses: consumption (44%), small business (16%), education and training (12%), travel and funeral (12%), health (7%), construction / rehabilitation of real estate (6%) and other uses (2%). During the crisis, the funds sent were used for consumption needs in 60% of the cases (Table 3).

Some of the variables presented in this descriptive analysis could be used as factors that determine the sending / receiving of remittances in Côte d'Ivoire.

V. ECONOMETRIC ANALYSIS

For the OLS model, the model validity tests show an absence of heteroskedasticity from the Breusch-Pagan / Cook-Weisberg test, a good specification of the model with the Ramsey RESET test, an absence of endogenous factor on variable linked to the uses of remittances, using the Durbin-Wu-Hausman test in a regression framework with instrumental variable and finally a normality of the residuals (Shapiro-Wilk test). In the ordered Probit model, when the latent model is assumed to be homoscedastic, the estimated parameters can be biased. In these cases, heterogeneous choice models are used to correct the bias. In this paper, we used the Ordinary Generalized Linear Models (OGLM) program developed by Williams (2010) to correct the heteroskedasticity of errors.

Variables related to age, sex of recipients, usage of remittances by recipients, specification of end use by the provider, migrant's length of stay in the host country and the conditions of leaving Côte d'Ivoire have a significant influence on the amounts transferred.

The probability of receiving high amounts increases with the age of the recipients and also with the end use for physical investment and human capital (health, education). This probability of obtaining high amounts decreases when the migrant does not specify the end use of the remittances he sent or when the recipient is a female or the emigration took place after the violent episodes of 2004 (Table 4).

With regard to age, each year's increase, all other things being equal, has a positive but moderate impact on the amount of funds transferred under normal circumstances. No age threshold effect was observed and the squared age variable was removed from the final model.

Under normal circumstances, providers tend to transfer more funds when they assign a pre-use to these sums. During the crisis, for amounts over \$ 200, the same behaviour was observed among migrants. However, when the amounts are relatively low and less than \$ 200, the probability of receiving money decreases with the migrant's predefined usage pattern. Indeed, during the crisis, the migrants are concerned about the possible decline in incomes of his family of origin or his friends and acquaintances. This leads him to regularly send small amounts without specifying their allocation, certainly for consumption purposes. On the other hand, even when the final usage is predefined, the relatively high sums transferred are used to finance education, small economic activities to maintain the household's standard of living and for health care.

Furthermore, being a woman during the crisis, reduces the probability of receiving very high amounts, and increases the probability of receiving low amounts of transfer. In this way, relatively small amounts are sent to women (< \$ 200) to cover the needs of the household, while in investment (education, health, small business, construction and rehabilitation of destroyed homes) priority is given to men. In the situation before the crisis, sex is not determinant in the propensity to receive money transfers.

Similarly, when the usages are for investment purposes, the amounts transferred in the normal situation are relatively larger than in the case of consumption or pure altruism. During the conflict, when one moves from altruism / consumption to investment, the probability of being in the highest remittance class ($Y_i = 5$) increases while that of being in the least ($Y_i = 1$) or to receive the smallest amounts decreases. Thus, the use for investment purposes increases the amounts transferred while the use for consumption reduces the amounts transferred. However, during the conflict, consumption usage are most predominant because the opportunities and incentives to invest remittances received are reduced (Table 5).

Moreover, the conditions under which migration has taken place have an influence on the amounts transferred in situations of armed conflict. The propensity to transfer high amounts decreases when emigration has occurred after the 2004 violence and increases when the departure has occurred before that period. Indeed, a minimum of time is necessary for the migrant to settle, integrate and find work in the host country. Without this, he cannot reasonably transfer large sums of money to his family members remained in the home country. However, the altruistic desire and insurance is present even for those who emigrated after 2004, as the propensity to transfer small amounts increases for this category of migrants while it decreases for others. The extraordinary manifestation of altruism and the insurance against the risk of the decline of incomes of the family of origin, concerns all migrants including the most recent, probably function of the capacities of each one. Moreover, sums transferred under normal circumstances increase with the length of stay of migrants in the host country. This result, contrary to the theoretical predictions of the extinction of altruism over time, can be explained by the fact that 84% of migrants have maintained close ties with their correspondents, with whom they communicate regularly.

As a result, the altruism developed by Ivorian migrants resists over time by means of regular communication with their correspondents in the home country.

TABLE 4

TABLE 5

V. DISCUSSIONS & CONCLUSION

This paper analyses the characteristics and the determinants of remittances during the post-electoral crisis peak in Côte d'Ivoire and allows us to show the Ivorian evidences. The main results show that the crisis has been a factor in mobilizing and demonstrating social capital beyond kinship in two ways. On the one hand, the amounts sent during the crisis are on average higher than the amounts received before the peak period of the post-election crisis. On the other hand, the proportion of friends and acquaintances remitting more than doubled from 14% to 37%. This extraordinary manifestation of social capital in times of crisis was observed in Tunisia (Edelbloude et al., 2017) and in the former Yugoslavia (Koczan, 2016) and more generally in countries in crisis (Fagen, 2006).

The funds received have been used for various purposes, the main ones being consumption needs. In this sense, the funds received during the crisis played an insurance role against the decline in income and economic opportunities linked to the climate of insecurity and armed conflict. These findings are consistent with those of Fransen and Mazzucato (2014) and the theoretical predictions of the New Economics of Labor Migration (Taylor, 1999, Stark, 1978, 1991, Lucas and Stark, 1985; and Bodvarson, 2009). However, the fact that the amounts transferred for physical investment and human capital motives exceed those sent for consumption purpose, is consistent with the results of Arun and Ulku (2011).

The study also showed, contrary to Funkhouser (1995) that the altruism of the Ivorians does not die out over time since the funds provider's length of stay affects positively and significantly the amounts transferred. This situation could be related not only to the fact that the massive emigration from Côte d'Ivoire is recent, but also to the fact that migrants providing funds have maintained close relations with their correspondents in Côte d'Ivoire, with whom they have regular contacts by the means of information and communication technologies (ICT).

The period of emigration has also an influence on the decision and the amounts transferred during the crisis. This result confirms that of Arestttof et al. (2012) on the influence of departure conditions on the amounts transferred, although not necessarily for the same reasons.

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Notes:

2. The ratio of the stock of migrants in relation to the population evolved from 15.2% to 11.2% from 1975 to 2010.

3. On November 6, 2004, one of the shells of the dignity operation launched by the Ivorian army for the conquest of the centre, the north and the west zones controlled by rebel forces to President Laurent Gbagbo, reached the French military base in Bouaké. In reaction the French army destroyed all the aircraft of the Ivorian army. These led to violent street demonstrations against France, French interests and the pillage of companies and major brands. There were several injured and dead. Several residents of foreign nationality and Ivorians left the country after these events.

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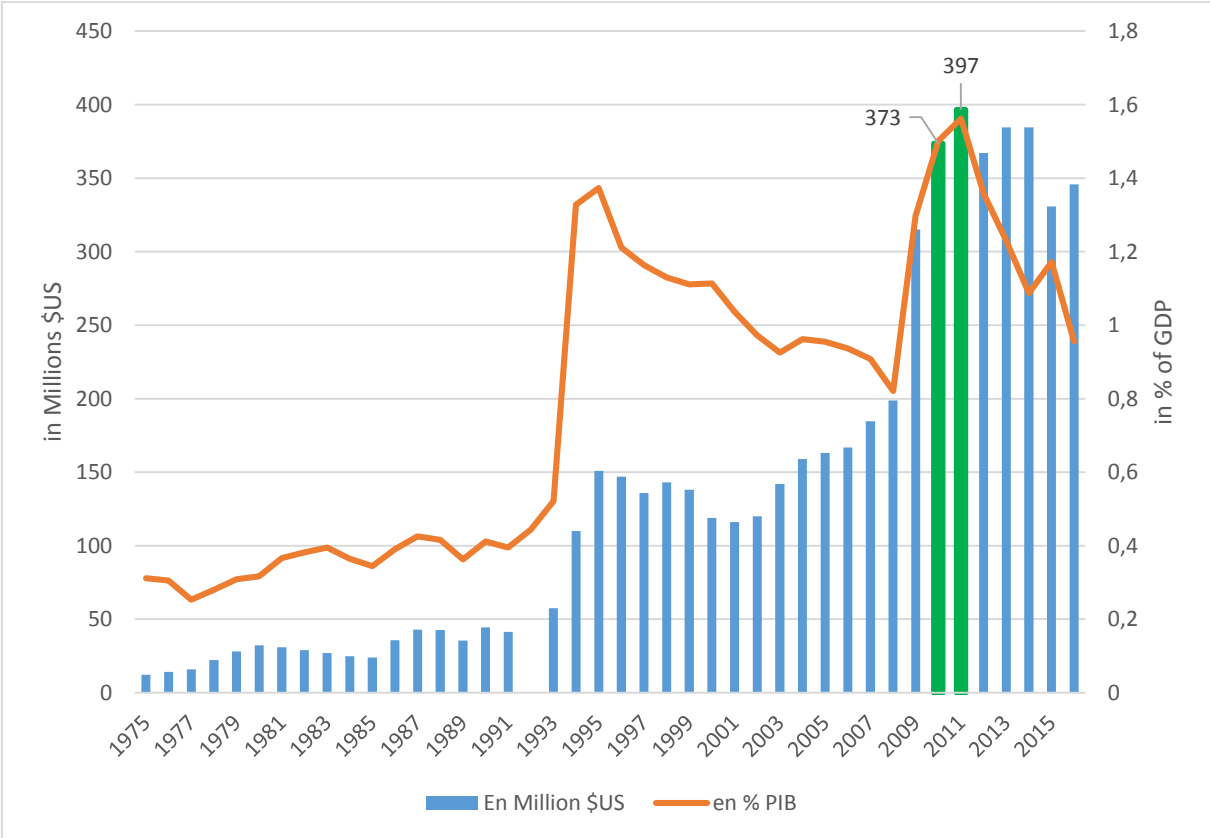
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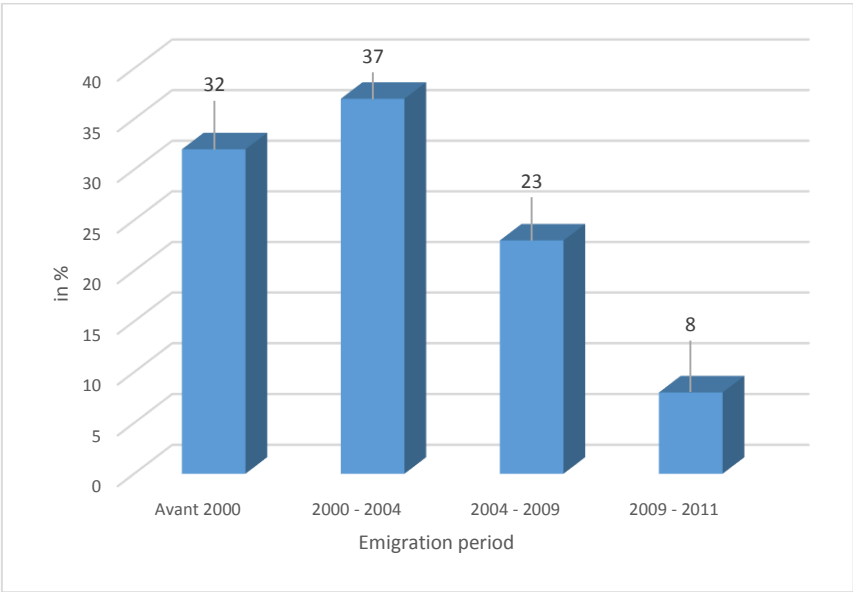
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Figure 1: Trends of incoming remittances to Côte d'Ivoire in volume (US \$ million) and as a share of GDP (in%) from 1975 to 2016.



Source: Author using data from the World Bank on remittances, update 2016.

Figure 2: Distribution of remitters (in %) during the crisis by year of emigration



Source: Author

Table 1 : Descriptive statistics of sample

Variables	Categories			Variables	Categories		
Final end-user	Yes	227	76.17	Contact with sender	Frequently/Regularly	251	84.23
	Non	71	23.83		Scarcely/ Irregularly	47	15.77
Formal Network	Yes	254	98.83	Frequency of remittance sending by relatives	Never	20	6.76
	No	3	1.17		Occasional	121	40.88
	Don't know/missing	41	13.76		Regular	155	52.36
Network	Formal	258	86.58	Remittances in Nature	Yes	93	33.21
	Informal	11	3.69		No	187	66.79
	Missing	29	9.73	Number of remittances			
Sex recipient	Male	154	51.68		0	10	3.47
	Female	144	48.32		1	37	12.85
Sex sender	Male	192	65.31		2	40	13.89
	Female	102	34.69		3	26	9.03
Age Receiver	16 to 27 years	88	29.53		4	175	60.76
	28 to 32 years	68	22.82	Remittances sent by non-relatives	Yes	111	37.63
	33 to 41 years	74	24.83		No	184	62.37
	42 years and more	68	22.82	Frequency of transfer	Every month	16	14.41
	Average Age	35 years			Every 3 months	16	14.41
Age Sender	18 to 32 years	79	26.51		Every Semester	5	4.5
	33 to 39 years	80	26.85		Occasionnaly	74	66.67
	40 to 45 years	77	25.84	Number of remittances			
	45 years and more	62	20.81		1	21	19.63
	Average year	39	13.09		2	24	22.43
remunerated activity	Yes	186	62.42		3	20	18.69
	No	112	37.58		4 and more	42	39.25
Wage	Yes	118	63.44	Relationships in transfer made in normal situation	Brother/ Sister	130	52
	Other means of remuneration	68	36.56		Others	120	48
Duration of stay	Less than 3 years (after 2009)	24	8.05		Relatives	216	86.4
	from 3 to 7 years (2004-2009)	68	22.82		Non relatives	34	13.6
	From 7 years to 13 years (1999-2004)	110	36.91	Relationships in transfer made during crisis	Brother/Sister	92	40.53
	More than 13 years (before 1999)	96	32.21		Others	135	59.47
	Average duration of stay	12 years			Relatives	142	62.56
Destination countries	UE	208	69.8		Others	85	37.44
	<i>dont France</i>	126	41.95	Specification of end-uses of transfer	Yes	186	62.42
	USA/ CANADA	42	14.09		No	112	37.58
	ECOWAS	26	8.72	Alternatives if the receiver doesn't receive any transfer	Savings	69	97.18
	Others	22	7.38		Borrowing	54	76.06
Possible use of eventual surplus of transfer received	Dépenses de maison	45	20.55		Income	59	83.1
	Construction	11	5.02		Use of money lended for other issues	19	26.76
	Small business	42	19.18		No urgent needs	50	18.38
	Savings	70	31.96		Others	21	7.72
	Personal needs	32	14.61	Specified end-use by remitter in normal situation	Altruism/ Consumption	119	58.91
	Others (Education. Health. other option)	19	8.68		Investment / Human Capital	83	41.09
Frequency of reception during crisis	1	28	26.42	Specified end-use by remitter in crisis situation	Altruism/ Consumption	122	60.1
	2	29	27.36		Investment / Human Capital	81	39.9
	3	13	12.26	level of interaction between receiver and sender	Scarce/rare	47	15.77
	4	36	33.96		Often/ regular	251	84.23
End-use of remittances (priority 1)	Personal/House expenses	145	48.99	End-use of remittances as defined by remitter	Personal/House expenses	90	44.33
	Education	41	13.85		Education	25	12.32
	Build/ Repair	23	7.77		Build/ Repair	12	5.91
	Small Business/ savings	42	14.19		Small Business/ savings	33	16.26
	Health	15	5.07		Health	14	6.9
	Travel/ Funerals	10	3.38		Travel/ Funerals	24	11.82
	Others	20	6.76		Others	5	2.46

Source : Author's computations from IRPI-TWAC survey

Table 2: Descriptive statistics of remittances received on the whole and during the 2010 crisis

Do you receive remittances from people other than a	Variable	Sum (in USD \$)	Cv	Mean	SD	Min	Max
Remittance received from friends	Amount in general	30,619	1.00	276	275	40	1,700
	Amount in crisis	16,336	1.13	333	293	70	1,300
Remittance received from kinship	Amount in general	64,650	1.07	349	328	50	1,200
	Amount in crisis	25,970	1.14	419	366	40	1,600
Total	Amount in general	95,269	1.04	322	311	40	1,700
	Amount in crisis	42,306	1.13	381	337	40	1,600

Source: Author from Survey data IRPI-TWAC, October 2011

Table 3 : Amounts remitted according to socio-demographics characteristics of recipients and senders

Variables	Categories	Average Amount in Normal situation (USD)	Average Amount in crisis situation (USD)	Average Amount the day of Survey (USD)	Variables	Categories	Average Amount in Normal situation (USD)	Average Amount in crisis situation (USD)	Average Amount the day of Survey
Number of children for receivers					Specified end-use by remitter				
	0	284	353	2.37		Personal/House	231		2.05
	1	251	334	2.47		Education	250		2.25
	2	301	294	2.44		Build/ repair	782		2.72
	3	406	479	2.61		Small Business/ Savings	357		2.70
	4	378	533	2.80		Health	161		2.08
	5	413	573	2.65		Travel/ Funerals	342		2.54
Age of receiver						Others	340		2.40
	16 to 27 years	252	348	2.26		Altruism/ Consumption	258		2.17
	28 to 32 years	313	297	2.56		Investment/ Human	350		2.68
	33 to 41 years	355	379	2.57	Country of residence of remitters				
	42 years and more	386	535	2.68		EU	330	370	2.55
Age Sender						USA/CANADA	380	505	2.62
	18 to 32 years	294	319	2.38		Africa and others	236	306	2.19
	33 to 39 years	304	344	2.46	Frequency of reception of remittances				
	40 to 45 years	334	507	2.57		Never	359		
	45 years and more	364	358	2.63		Scarce/Rare	296		
Number of relative who migrated						Often/ Regularly	338		
	0	412	278	2.38	Level of interaction between sender and remitter				
	1	315	428	2.43		Scarce/ Rare	302	293	2.35
	2	345	577	2.52		Often/ Regular	326	393	2.53
	3	247	259	2.40	Duration of stay				
	4	334	335	2.62		Less than 3 years (After	224	531	2.08
	5	331	333	2.55		from 3 to 7 years (2004-	282	295	2.34
Relationships						From 7 years to 13 years	328	429	2.58
	Brother/Sister	324		2.58		More than 13 years	368	365	2.63
	Other	327		2.52	Sex of receiver				
	Unknown	303		2.37		Male	339	388	2.63
	Relatives	310		2.59		Female	304	373	2.36
	Non relatives	425		2.46	Sex of Sender				
	Unknown	303		2.37		Male	329	363	2.51
Waged activity						Female	314	430	2.50
	Yes	355	425	2.61	Age of receiver				
	No	270	299	2.34		16 to 27 years	252	348	2.26
Final end-use of remittances 1st Priority						28 to 32 years	313	297	2.56
	Personal/House expenses	287	401	2.29		33 to 41 years	355	379	2.57
b18	Education	257	384	2.41		42 years and more	386	535	2.68
	Build/ Repair	616	531	3.64	Age of sender				
	Small Business/ savings	365	448	2.78		18 to 32 years	294	319	2.37
	Health	225	409	2.27		33 to 39 years	304	344	2.46
	Travel/ Funerals	450	357	2.90		40 to 45 years	334	507	2.57
	Others	301	380	2.32		45 years and more	364	358	2.63
Specification of end-use by remitter									
	Yes	369	443	2.67					
	No	245	365	2.22					

Source : Author's computations from IRPI-TWAC survey

Table 4 : Econometric results from OLS and Ordered Probit Models

	Remittances in normal situation <i>(modèle 1)</i>	Remittances received in conflict times <i>(modèle 2)</i>
Age of money transfer recipient's	0.0155* (2.02)	0.0157† (1.88)
Number of transfers received from correspondents	0.1000 (1.43)	0.0841 (1.07)
Did the sender precise the end use of money received (ref. Yes)		
Non	-0.434** (-2.74)	-0.583** (-2.89)
Main Job (ref. Civil servant)		
Waged job in the private sector	0.0707 (0.24)	0.259 (0.82)
Independent job	0.0199 (0.07)	0.314 (1.04)
Other (students, retired person, etc.)	-0.319 (-0.97)	-0.511 (-1.30)
Sex of recipient (ref. : Male)		
Female	-0.0676 (-0.42)	-0.368† (-1.90)
Sex of sender (ref. : Male)		
Female	-0.112 (-0.68)	0.0594 (0.31)
End use of remittances (ref. : Altruism/ consumption)		
Investment/ Human Capital	0.381* (2.36)	0.585** (3.05)
Sender's Duration of stay	0.0154* (2.01)	
Departure date from Côte d'Ivoire (réf. : entre 7 et 13 ans)		
From January 2009 (Less than 3 years)		-0.973** (-2.88)
Between 2005 and 2009 (between 3 et 7 years)		-0.473† (-1.83)
Before 1999 (more than 13 years)		-0.0915 (-0.41)
Intercept	10.51*** 22.17	
Number of Observations	136	142
R-square	0.202	
Adjusted. R-square	0.138	
AIC	365.9	403.4
BIC	397.9	450.7

t statistics in parentheses † p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Model 1 : OLS ; Model 2 : Ordered Probit (Ordinary Generalized Linear Model)

Table 5 : Marginal effects of the ordered Probit for all the categories of the dependant variable

	Prob (y _i =1)	Prob (y _i =2)	Prob (y _i =3)	Prob (y _i =4)	Prob (y _i =5)
Age of money transfer recipient's	-0.00451† (-1.86)	-0.00156 (-1.55)	0.00291† (1.76)	0.00199† (1.73)	0.00118 (1.63)
Number of transfers received from correspondents	-0.0241 (-1.07)	-0.00837 (-0.99)	0.0156 (1.05)	0.0106 (1.05)	0.00629 (1.00)
Did the sender precise the end use of money received (ref. Yes) (d)					
No	0.179** (2.72)	0.0369† (1.75)	-0.111** (-2.58)	-0.0673** (-2.60)	-0.0376* (-2.28)
Main Job for recipients (ref. Civil servant) (d)					
Waged job in the private sector	-0.0713 (-0.86)	-0.0299 (-0.71)	0.0458 (0.86)	0.0340 (0.78)	0.0214 (0.73)
Independent job	-0.0892 (-1.05)	-0.0323 (-0.96)	0.0571 (1.05)	0.0401 (1.01)	0.0243 (0.96)
Other (students, retraité, etc.)	0.167 (1.18)	0.0156 (0.66)	-0.102 (-1.26)	-0.0540 (-1.53)	-0.0272 (-1.59)
Sex of recipient (ref. : Male) (d)					
Female	0.107† (1.86)	0.0339 (1.61)	-0.0682† (-1.80)	-0.0457† (-1.76)	-0.0270† (-1.67)
Sex of sender (ref. : Male) (d)					
Female	-0.0170 (-0.31)	-0.00604 (-0.30)	0.0109 (0.31)	0.00755 (0.31)	0.00450 (0.31)
End use of remittances (ref. : Altruism/ consumption) (d)					
Investment/ Human Capital	-0.158** (-3.16)	-0.0686* (-2.13)	0.0985** (2.84)	0.0768* (2.48)	0.0511* (2.12)
Departure date from Côte d'Ivoire (ref. : between 7 and 13 years) (d)					
Before 1999 (more than 13 years)	0.0267 (0.40)	0.00853 (0.43)	-0.0172 (-0.40)	-0.0114 (-0.41)	-0.00662 (-0.42)
Between 2004 and 2009 (between 3 et 7 years)	0.150† (1.69)	0.0231 (1.38)	-0.0929† (-1.74)	-0.0526† (-1.93)	-0.0277† (-1.83)
From January 2009 (Less than 3 years)	0.343** (2.64)	-0.0331 (-0.55)	-0.188** (-3.03)	-0.0838** (-3.22)	-0.0386* (-2.45)
N	142	142	142	142	142

Marginal effects; t statistics in parentheses
(d) for discrete change of dummy variable from 0 to 1
† p<0.10, * p<0.05, ** p<0.01, *** p<0.001

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