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Remittances and Income Distribution in Peru

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Abstract

Objectives of research were to study the magnitude, dynamics, and impacts associated with remittances to Peru. The remittances grew exponentially in the last decade. The study examines the emigration of Peruvians, compares remittances received by families in Peru with those in countries in Latin America, and presents the income from remittances for families classified by socioeconomic strata. Conclusions are: Peru and Guatemala demonstrate greater growth in remittances during 2000-2005, and Peru shows a high concentration of remittances in the higher quintiles of the socioeconomic strata. This result is unexpected and different from that found in other countries such as Mexico.

Keywords: Latin-America, Peru, Migration, Remittances, Income-Distribution.

Introduction

Remittances have become a major source of foreign exchange and income in Latin American countries and developing countries in general. Given this fact, a wave of papers and documents has been written about the subject in recent times. In particular some publications of the World Bank (2006a, 2006b), the Inter-American Development Bank (IADB) (2004, 2005, 2006) and the International Monetary Fund (IMF) (2005, 2006) have addressed the growing importance of remittances and their impact on development. In the IMF (2005) report, significant attention was given to the determinants of workers remittances. In the World Bank (2006a) report, the economic implications of remittances and migration were discussed; The World Bank has also edited some volumes on remittance issues. In addition, the IADB has produced a number of publications on the flow of remittances (IADB, 2004, 2006). Finally, on an academic level, a number of research works have explored the impact of remittances on poverty, growth,

consumption, education, and labor supply (Fajnzylber and López, 2007).

Proceeding with the line of work of a previous study (Torres-Zorrilla, 2006), the objectives of this research are the following: (a) to study the magnitude, the dynamics and the importance of remittances from emigrants of Peruvian origin; and (b) to consider the impact of remittances upon emigrants from the country on the distribution of income at the national level. In this paper, information about the migration of Peruvians to the outside world after 2001 is presented. Second, the evolution of remittances of those Peruvian emigrants to their families in Peru is described. Third, the distribution of the flow of remittances among five socioeconomic strata is displayed. Finally, the conclusions of the study are discussed.

Migration from Peru

In the present section, the migration of Peruvians abroad during the most recent decade, namely from
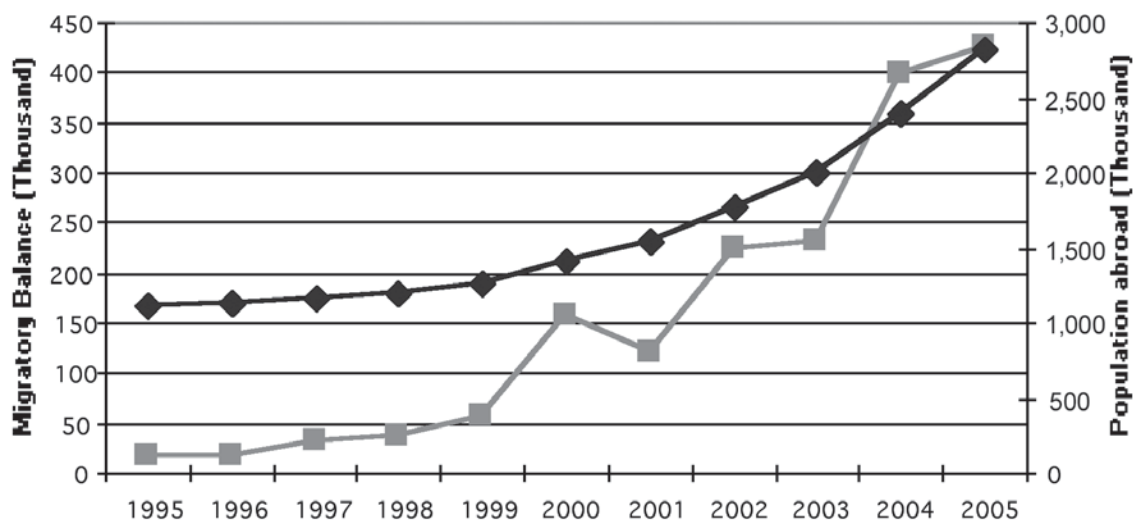
Figure 1. Migratory balance and Peruvian population abroad
Note. Estimated from data in Table 2.

1995 to 2005, is examined. This period includes the governments of Alberto Fujimori and Alejandro Toledo. The reason for choosing this decade is that during this period, regardless of the political or economic situation, migration became a real option for almost all social classes and cultural groups in Peru.

From the year 2001, the country recovered its political and economic stability, under the regime of Alejandro Toledo; nonetheless, the migratory balance demonstrated continuous growth (see Table 1). The migratory balance is the number of Peruvian who did not re-enter the country after traveling abroad.

The data show that from 2002 the magnitude of migration from Peru grew quickly, reaching a level of 400,000 Peruvian emigrants in 2004 and 425,000 in 2005. During the regime of Alberto Fujimori, migration appeared to have a political motivation, whereas during the period of Alejandro Toledo´s rule, the main reason to emigrate would seem to be of an economic character.

The increase in migration in the recent period 2001-2005 has both internal and external explanations. The internal explanations are unemployment and the lack of confidence in the economic reactivation of the country. The external reason is the strong demand for people in the labor markets of the developed countries due to the

stagnation of the workforce in the United States and the rich countries of Europe.

Assuming that the total number of Peruvians abroad in 1992 was approximately one million people (Altamirano, 2006), the total Peruvian population living outside of Peru is estimated by summing up the migratory balances between the years 1995 and 2005 in Table 1. Because of the constant and increasing migration registered after the year 2000, it is possible that by 2005, the number of Peruvians abroad will reach an estimated 2.8 million people (see Figure 1).

Nevertheless, the data from DIGEMIN in Table 1 represent only the official numbers of exits and entrances of Peruvians from and to the national territory, and capture only the movements through the international airports and the borders with Ecuador, Bolivia and Chile. Estimations of the number of Peruvians that leave the country illegally do not exist. Therefore, the number of Peruvian emigrants presented in Table 2 is an underestimation of the real numbers. Alternative estimates of Peruvians abroad indicate that those numbers could be nearer three million. The reason for this is that many Peruvians who have left the country have entered the United States and Europe, mainly through Spain, illegally.

Table 1

Migratory Balance per Thousand in Peru 1995-2005

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Entrances	514	493	544	617	552	679	619	734	710	1,190	908
Exits	530	510	577	654	608	837	740	959	942	1,588	1,333
Migratory Balance	16	18	33	37	57	158	121	225	232	398	425

Note. DIGEMIN (2006)

Table 2
Peruvian Population Per Thousand Abroad

Year	Migratory Balance	Population
1995	16	1,116
1996	18	1,134
1997	33	1,166
1998	37	1,203
1999	57	1,260
2000	158	1,418
2001	121	1,539
2002	225	1,764
2003	232	1,996
2004	398	2,394
2005	425	2,819

Note. Estimated from data in Table 1

Remittances to Peru

In economic terms, few indicators express the magnitude of the transformations and impacts of globalization in Latin America as much as do the remittances that the emigrants send to their countries of origin. According to data collected by the IADB (2006), in 2005, remittances sent towards Latin American countries reached $54 billion. This exceeded the combined amounts of direct foreign investment and official development aid. It would seem therefore that an important part of the Latin American economy is maintained with this economic injection of remittances sent by emigrants working, legally or illegally, in more developed countries.

Mexican citizens sent home $20 billion in 2005, making Mexico the paradigmatic example of this phenomenon. Brazil with $6.4 billion and Colombia with $4.1 billion are next. Although in a tie with some Central American countries (Guatemala, El Salvador and the Dominican Republic), Peru received $2.5 billion in 2005 from its compatriots according to the IADB (2006). Peru also registered a high rate of growth in remittances. The IADB (2005) estimated that, if present tendencies continue, the amount of Latin American remittances could reach $500 billion for the period 2001-2010.

In Peru, official statistics associated with the balance-of-payments only report the limited concept of "workers´ remittances" (IMF, 2006). Because a more integral understanding of remittances is based upon the transfer of money rather than the shipment of money of formal workers, in this study remittances will be considered as the value that corresponds to the transfer of money into the current account of the balance-of-payments (see Table 3).

The maximum value of the official numbers was reached in 2005 and equals $1,791 million. The rate of growth in the 1990s was 9.7% annual, but that rate of growth has accelerated in the last few years. That the previous numbers

Table 3
Peru: Evolution of Remittances in Million $: 1991-2005

Year	Remittances	Year	Remittances
1991	466	1999	992
1992	450	2000	1,008
1993	538	2001	1,050
1994	795	2002	1,052
1995	837	2003	1,227
1996	922	2004	1,461
1997	928	2005	1,791
1998	989		

Note. IMF (2006)

constitute official statistics of remittances is emphasized. The official remittances reported in the balance-of-payments statistics of the Central Bank of Reserve of Peru (BCR), and the figures reported by the IMF are limited because the institutions consider only payments made through commercial banks or specialized companies such as Western Union or MoneyGram.

Objective evidence and experiences demonstrate that the inflow of remittances to Peru does not escape the phenomenon of the informality of the Peruvian economy, and a substantial proportion of remittances are sent through informal channels. Daily, hundreds of Peruvians return to visit Peru bringing in cash that they and their close friends leave in the country. Therefore, it can be assumed that a serious problem exists for accounting in the official statistics and that the official statistics register amounts of remittances that are much smaller than the actual value of the remittances.

On the other hand, the IADB, through the Multilateral Investment Fund (MIF), has been studying the phenomenon of remittances since the beginning of the 2000s. MIF makes and reports alternative estimates of remittances for all Latin American and Caribbean countries. According to some experts, the information compiled by the MIF is more reliable because that institution considers the number of people who remit, the number of families who receive, and the average amount of the remittance. The numbers estimated by MIF for remittances by emigrants to Peru appear in Table 4 (see also Figure 2).

Table 4
MIF: Remittances to Peru

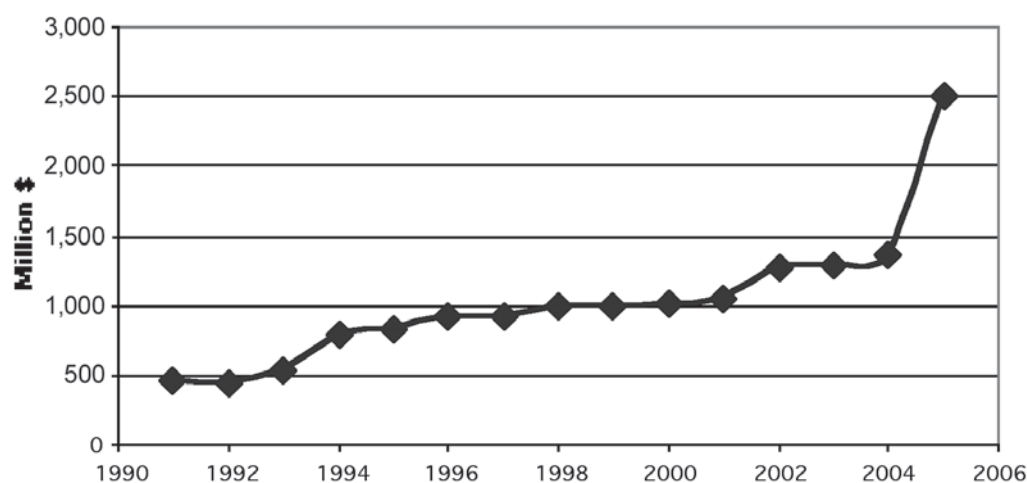| Year	Remittances in million $
2001	930
2002	1,265
2003	1,295
2004	1,360
2005	2,495

Note. MIF (2006)

Figure 2. Peru: Evolution of Remittances
Note. Balance of payment data and MIF figures.

The result is a revision of the amount of remittances for the year 2005 that is close to $2.5 billion. The MIF estimate exceeds the official balance-of-payments value by 39% in 2005 and reflects a record growth of 83% with respect to the previous year. Although the MIF statistics have only been recorded since 2001, the difference between these and the official figures is statistically significant.

To compare remittances to Peru with the amounts of remittances received in other Latin American countries is essential (see Table 5). The comparison suggests that Peru and Guatemala were the countries experiencing a greater growth of remittances, among the eight top receiving countries in the period 2001-2005. Other countries that were experiencing growth in remittances were Brazil, Colombia, and Mexico. The countries of medium growth included El Salvador, the Dominican Republic, and Ecuador.

Table 5 records the information about those eight countries in Latin America that have a great volume of annual remittances. The criterion adopted was to include all countries that had remittances over two billion dollars annually in 2005.

Remittances and socioeconomic strata

Remittances are additional economic income that is received by families in Peru. The additional income helps to cover the deficits between the expenses and income of the receiving families. A high proportion of the remittances are destined for final consumption in the receiving families. This section presents data about Peruvian families´ consumption in 2002, classified by socioeconomic strata. Their consumption is compared to all sources of income for these families, including the transfer of money received from the outside world.

First, the consumption of households in Peru in 2002 is presented. Second, the structure of consumption in Peruvian households is classified according to the five strata of income, namely, stratum A to E, for the year 2002. The basis for the analysis is data from the National Survey of Households (ENAHO), survey administered annually by the National Institute of Statistics and Information (INEI). The ENAHO (2002) survey was applied throughout the fourth quarter of 2002[1].

The main hypothesis is that the poorest families in the ENAHO (2002) survey, namely, strata D and E, were not

Table 5
MIF: Remittances by country in Million $

Year	Peru	Colombia	Ecuador	Guatemala	El Salvador	Mexico	Brazil	Dominican Republic
2001	930	1,756	1,430	584	1,911	8,895	2,600	1,807
2002	1,265	2,431	1,575	1,690	2,206	10,502	4,600	2,112
2003	1,295	3,067	1,657	2,106	2,316	13,266	5,200	2,217
2004	1,360	3,857	1,740	2,681	2,548	16,613	5,624	2,438
2005	2,495	4,126	2,005	2,993	2,830	20,034	6,411	2,682

Note. MIF (2006)

able to establish a balance between their incomes and their expenses; therefore, the families´ incomes were balanced through the transferences of money by family member who remitted money. Remittances are the most important transfers of money that Peruvian families receive from their relatives in the developed countries. The initial hypothesis is that most families who receive remittances are poor families.

The next step in the analysis was to disaggregate households´ consumption in terms of the five recognized segments of income and socioeconomic levels, stratum A to E. This required the classification of all families in the ENAHO (2002) survey to one of the defined strata. Second, it implied reworking the ENAHO survey to estimate the consumption of all goods so that families corresponded to the consumption patterns of the five strata. The final step was to obtain the structure of consumption of the households by socioeconomic level.

Classification of the sample of ENAHO (2002) families by recognized socioeconomic strata A to E is a contribution to the analysis of the distribution of income and the distribution of family expenditures in the Peruvian economy. The classification of 18,598 ENAHO households into the five socioeconomic strata is presented below in Table 6. The precise methodology for classifying each family into particular strata took into account the main characteristics that define the five socioeconomic levels in Peru. These characteristics included, in addition to family income, the education of the household head, the amount spent on food and education, the existence of a banking account for the family, the family´s affiliation to social security, the characteristics of the house (floor space, access to lights, water, baths, stoves, refrigerators, TVs, radios, washing machines, computers, telephones, and automobiles). Table 6 presents the classification of the 18,598 households of the ENAHO sample into the five socioeconomic strata.

The number of people in the sample was 83,000 people and on average there were 4.47 persons per household. Only 16% of the families fell in strata A and B, whereas 84% fell in strata C, D and E.

The families of ENAHO (2002) survey do not always manage to balance their expenses and incomes. Table 7 shows the comparison of total expenses and total incomes of these families in the fourth quarter of 2002.

A first result is that expenditure is less than income for the strata A, B and C, that is, a certain level of savings is found. The savings of stratum A is 23% of the income whereas in stratum B, it is 15%, and in stratum C, surprisingly, it is 24%.

A second result is that expenditures are greater than income for strata D and E, with a negative level of savings. Savings are estimated as -6% in stratum D and -34% in the stratum E. It seems that the family income for strata D and E adjusts and balances through the transfer of money and donations.

Table 6

Structure of ENAHO families by socioeconomic strata

Strata	A	B	C	D	E	Total
Families	458	2,654	6,256	5,115	4,115	18,598
Persons	1,480	8,572	25,321	25,046	22,683	83,102
Persons/ Family	3.23	3.23	4.05	4.90	5.51	4.47

Note. ENAHO (2002)

Table 7

Total Income and Expenditures by Strata (per Thousand Soles): Results of ENAHO (2002) Survey for the Fourth Quarter 2002

Strata	Total Expenditure	Total Income	Total Savings	Number of Households
A	9,259	12,093	2,834	458
B	15,797	18,615	2,818	2,654
C	16,600	21,939	5,339	6,256
D	14,655	13,794	-861	5,115
E	7,425	5,525	-1,900	4,115
Total	63,736	71,966	8,230	18,598

Note. Own estimations from ENAHO (2002).

Table 8

Remittances by Socioeconomic Strata

Strata	Transfers from abroad (Thousand Soles, IV Quarter)	Transfers from abroad (Thousand Soles, Year 2002)
A	125	500
B	246	983
C	128	513
D	23	91
E	2.5	10
Total	524	2,098

Note. ENAHO (2002)

Table 9

Receiving Families by Strata (Number of Families)

Socioeconomic strata	Transfers from abroad Receiving families	Total families
A	30	456
B	131	2,657
C	132	6,259
D	37	5,110
E	11	4,116
Total	341	18,598

Note. ENAHO (2002)

Remittances are indeed one of the most important transfers of money that many Peruvian families receive from Peruvian emigrants in the developed countries. The ENAHO (2002) survey asks, as one of its questions to the families, how much money each family receives in the way of money transfers from the outside world. Note that these are not official remittances. The distribution of remittances from ENAHO survey appears in Table 8.

The surprising result is that the strata A, B, and C receive 95% of the remittances. Those families that most need the extra income, that is, those families with negative savings (see Figure 3), receive only 5% of the remittances. Note that stratum B accounts for 47% of the remittances.

The number of families who receive remittances from the outside world appears in Table 9, which compares the receiving families with the total number of families.

The results demonstrate that in strata A, B, and C, 3% of the families receive remittances (293 families out of 9,372). In the strata D and E, where extra income is the most needed, only 0.5% of families receive remittances. Figure 4 displays the distribution of receiving families by strata.

The statistical results support a rejection of the null hypothesis about remittances and socioeconomic strata (The formal statistical analysis is presented in the appendix). The hypothesis suggested that the poorest families, namely, families in strata D and E, are not able to establish a balance between their income and their expenses and need the remittances in order to do so. The data suggest however that the remittances are not destined for the two lowest socioeconomic strata of the distribution of income but rather are destined for the three highest strata of the socioeconomic distribution.

This is a study of Peru about remittances and strata. The results are unexpected and different from the results found in other developing countries. For example, a study of Mexico showed that families with higher remittances belong to the lower quintiles of the distribution of income in Mexico (World Bank, 2006a). That document inspired this paper, which is an extension of the Mexican study to Peru (Fajnzylber & López, 2007)[2]

Conclusions

Two important conclusions arise out of the present study about remittances and their impacts on the distribution of income in Peru. In the first place, the discussion pointed out that Peru is one of two countries that are experiencing a higher growth of remittances among the receiving countries in the period 2001-2005. Guatemala is the other country in which the growth of remittances has increased the most. Other countries that have experienced a high growth in remittances are Brazil, Colombia and Mexico. Countries experiencing medium growth include El Salvador, the Dominican Republic, and Ecuador.

The second conclusion that can be reached is that Peru is a country where a high concentration of remittances in
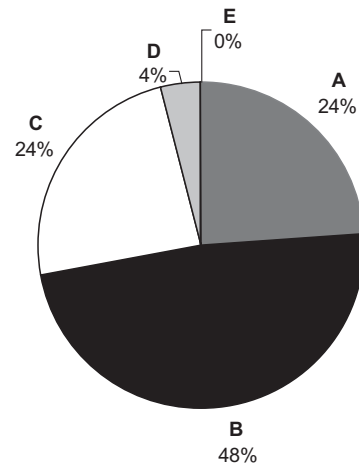
Figure 3. Distribution of remittances by strata.
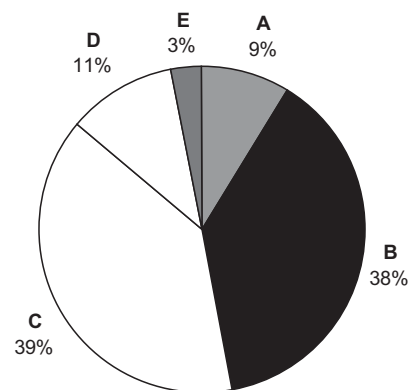*Note.* ENAHO (2002)

Figure 4. Receiving families by socioeconomic strata.
Note. ENAHO (2002)

the higher strata of income is apparent. This result was unexpected and is different from the distribution found for other countries. For example, a recent study shows that Mexico represents the opposite case, because the families with more remittances belong to the lower quintiles of the distribution of income in Mexico.

Appendix

The null hypothesis may be stated as such: The poor strata of income (stratum D and stratum E) constitute the majority of families (51% or more) who receive remittances. That is:

$H_0 : \pi \geq 0.51$
$H_1 : \pi < 0.51$

For statistical proof of the hypothesis, table z (normal distribution with zero mean and unit standard deviation) was used because a large sample (n>30) was used and the

test is one-sided. If the level of significance is 5%, the critical value of the statistic z is given by z_{α}=-1.645

The value of z corresponding to the statistics (p), from the test above, is calculated as follows: The value of p=0.14, that is, 14% of receiving families come from strata D and E.

$$z = (p-\pi) / \sigma_p$$

where the standard deviation, σ_p is calculated as:

$$\sigma_p = [\pi (1-\pi) /n]^{1/2} = 0.027$$

The value of z corresponding to p=0.14 is the following:

$$z = (p-\pi) / \sigma_p = (0.14-0.51)/0.027 = -13.704$$

Since this value of z is substantially less than -1.645, the null hypothesis is rejected:

$$H_0 : \pi \geq 0.51$$

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Footnotes

1 The 2002 ENAHO Survey was the most recent data set available at the time of this study.

2 Fajnzylber and López (2007) suggested that for Nicaragua and Peru, households with remittances come primarily from the upper part of the income distribution.

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