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The Impact of Labor Migration and Remittances on
Household Income and Welfare in Nepal

by

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Abstract

This study uses a nationwide household survey to analyze the impact of domestic and international remittances on household income and welfare in Nepal. The impact of remittances on income distribution and social welfare are analyzed by source decomposition of income inequality and by comparing the observed level of measures with the level of the complete termination of remittances. The empirical findings demonstrate that the aggregate impact of all remittances on overall income inequality is stable; however, the impacts of remittances by their sources remain diverse. Since most of the migrants to India originate from the lower end of the income distribution, the remittances from India retain an income equalizing effect on income distribution. In contrast, the impact of remittances from countries other than India is opposite. Meanwhile, the domestic remittances exhibit an almost constant effect on overall income inequality. Although, an unambiguous welfare gain is associated with all types of remittances, the magnitude of the welfare gain is depended on the degree of income inequality induced by the remittances. Nevertheless, the remittances from India are found to be the main contributors to net welfare gains in Nepal by increasing income and decreasing inequality.

Keywords: migration, remittances, inequality, social welfare, Nepal

1. Introduction

Poverty and income inequality are the two major economic problems of Nepal. About 31% of population is living below the nationally defined poverty line in 2003-04¹ and the income inequality is the highest among the countries in Asia.² The living standards of people in some geographic regions are far behind than those of people in

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¹ Based on fiscal year of Nepal. The fiscal year starts in July and ends in June.

² ADB (2007) shows the income inequality (0.473) of Nepal in 2004 is the highest in Asia. The Gini coefficients of its neighboring countries are shown as: India, 0.362 (in 2004), Bangladesh, 0.340 (in 2005), and Pakistan, 0.312 (in 2005).

other parts of the country. Likewise, the income levels of certain caste and ethnic groups are apparently lower than those of other ethnic groups. It is widely believed that the rampant poverty and persisting inequality, particularly between urban and rural areas, and social discrimination by castes are among the main causes of a decade long civil war (1996-2006) in Nepal.³

One cause of poverty is linked to Nepal's rain-fated subsistence agricultural economy, which accommodates about 80% of households and occupies about a 32% share of GDP (in 2006-07). Ironically, the agricultural production is mostly in subsistence level and Nepal depends on imports of foods to feed its population. On the other hand, the modern sector is far smaller in size and development to provide enough economic opportunities within the country for the huge mass of the ever increasingly economically active population. Thus, the work-migration inside and outside the country for economic opportunities is a normal phenomenon in Nepal, as in many other developing countries.

However, the work related migration from Nepal, especially the international labor migration, could be somewhat different from other countries. First, about three-fourths of its international migration is confined to a single country, namely India, which shares an open border with Nepal. Second, Nepal is among the top remittance recipient countries regarding its remittance share of GDP (15% of GDP in 2006-07). Third, international remittance is the main source of foreign exchange in Nepal – far surpassing the combined share of foreign exchange earnings from tourism, foreign aid, and exports, and fourth, Nepal has a surplus in its current account despite a large trade deficit (NRB, 2007).

At micro-level, despite a low economic growth and a decade long (1996-2006) political instability, Nepal enjoyed a remarkable reduction in poverty over the same period (from 42% in 1995-96 to 31% in 2003-04). About 32% of households received remittances in 2003-04 and this accounts for about two-thirds of their income. Thus, the migrants' remittances are considered one of the key factors behind the declining poverty rate in Nepal (CBS, 2006). On the other hand, the income inequality is increased at the same time from 0.34 in 1995-96 to 0.41 in 2003-04 (CBS, 2006).

Inequality matters because (1) extreme income inequality leads to economic inefficiency (Todaro and Smith, 2006). For example, when credit constraints bind more households to qualify for loans or other credits, (2) extreme incomes disparities undermine social stability and solidarity, and (3) higher inequality is considered bad for social welfare (Sen, 1973). If inequality falls during a growth spell, poverty generally falls by more than it would have if growth had been distribution-neutral (WB, 2005b)⁴. In addition, deterioration in the national income distribution caused by

³ ADB (2007) states "Some recent evidence of how inequalities (and poverty) can lead to conflict and thereby undermine growth comes from Nepal where a "people's war" was started by Maoist insurgents in 1996."

⁴ World Bank, *World Development Report 2006: Equity and Development* (Washington: The World

an increase in inequalities at the low end may have very different economic implications, particularly with regard to investment and consumption patterns, than a deterioration caused by an increase in inequality at the high end (Stark, 1991).

Likewise, the link between remittances and inequality is important, because a large proportion of households in less developed countries participate in migration and receive remittances. If remittances comprise a large share of household income, then the distribution of remittances in large part will determine the distribution of overall income inequality. On the other hand, remittances may play a significant role in smoothing consumption if it is targeted to poor households. It may indirectly affect household income through changes to the labor supply of those remaining behind, or by providing funds for credit-constrained households to invest in education, health, entrepreneurship and farming activities (WB, 2005a)⁵.

In this backdrop, this paper touches upon these three inter-related issues: remittances, income distribution, and social welfare. The main research question of this study is, “*What effects do remittances have, if any, on household income and welfare?*”, and the main objective of this study is to find out “*which source of remittances is good for Nepal, in the sense that it induces a higher increase in household welfare.*”

This paper proceeds in seven sections. Section 2 presents the data set used in this analysis. Section 3 describes the analytical framework which is used to analyze the impact of remittances on income distribution and social welfare. Section 4 outlines the scenario of migration and remittances in Nepal, and the characteristics of both remittance recipient and nonrecipient households. The effects of remittances by their sources on income distribution and welfare are analyzed in Section 5 and 6, respectively. Section 7 concludes the study leaving behind a list of references.

2. Data

This study is mainly based on micro data of Nepal Living Standards Survey 2003-04 (in short, NLSS 2003-04), conducted by the Central Bureau of Statistics (CBS), Nepal, from April 2003 to April 2004. It is a nationwide multi-topic survey collecting a comprehensive set of data on different aspects of household welfare including consumption, income, assets, housing, education, employment, remittances, health, access to facilities, and demography. It uses a two-stage stratified sampling scheme to select a nationally representative sample of 3,912 households.

The household total income is composed of seven sources: farm (agricultural) income (36.8%), wage income (27.6%), nonfarm enterprises income (10.9%), remittance income (11.3%), housing income (9.8%), property income (0.5%), and

Bank publication, 2005).

⁵ World Bank, *Global Economic Prospects 2006: Economic Implications of Remittances and Migration* (Washington: The World Bank publication, 2005).

other income (3.2%). The survey defines remittances as a transfer income in cash and in-kind received by household over the year preceding the interview (CBS, 2004). However, the majority of the remittances are in cash, only 6.2 percent of remittances are in-kind. The average amount of in-kind remittances is NRs.⁶ 2,164, whereas the average amount of cash remittance is about 15 times bigger than it.

Although, the incomes are collected on household level, the empirical analysis of this study is mainly based on per capita figure that is dividing household total income by its household size. The per capita measures, which take accounts of household size, are considered better measures of household welfare than household total income. The incomes are in nominal value with regional price adjusted.

3. Analytical Framework

3.1. Impact of Remittances on Income Distribution

In most cases remittances reduce poverty by increasing the income of the recipient households.⁷ Remittances also indirectly affect poverty in the recipient country through their effects on growth, inflation, exchange rates, and access to capital.⁸ In contrast to the link between poverty and remittances, the relation between remittances and inequality is not straight. In some cases, remittances disproportionately go to richer households with worsening income inequality (Oberai & Singh, 1980; Lipton, 1980; Adams, 1989), while in some other cases, remittances are found to equalize income distribution targeting less well-off households (Stark et al., 1986).

Generally two methods have been used to find out the effects of remittances on household income distribution. The first, by comparing income inequality with and without remittances (Lipton, 1980; Barham and Boucher, 1998; Oberai and Singh, 1980; Adams, 1989), and the second, by decomposition total income inequality by income sources (Stark et al. 1986; Rodriguez, 1998; Adams and Alderman, 1992). This study uses both methods to find out the impact of remittances (in aggregate level and by sources) on income distribution in Nepal.

3.1.1. First Method: Comparing Inequality With and Without Remittances

The first method is mainly concentrated on comparison of income distributions including and excluding remittances without imputing counterfactual income for the lost-labor by migration. The data lacks the local labor markets information for imputation of lost-labor income. In addition, it is assumed that in a country like Nepal

⁶ NRs. = Rupees (unit of Nepalese currency). US \$ 1 = NRs. 73.8 in 2003-04 (annual average).

⁷ The analysis of household survey data from selected countries shows that remittances do reduce poverty (Gustafsson and Makonnen, 1993; Adams and Page, 2005; Litchfield and Waddington, 2003; Prakash, 1998).

⁸ See WB (2005a) for a discussion on the indirect effects of remittances.

with a huge surplus labor and slim economic opportunities, there might be negligible variation in household's pre-remittance income in presence and absence of the migrant.⁹ Income distribution is said to have improved or worsened according to Lorenz domination (i.e., whether one Lorenz curve lies wholly above or below a previous one) or according to one or more measures of relative inequality, such as the income share of the poorest (lowest quintile) or the Gini coefficient (Fields, 1980).

3.1.2. Second Method: Gini Decomposition

According to Pyatt et al. (1980), the Gini coefficient (G) of the total income can be written as a function of the covariance between income and its cumulative distribution. That is,

$$G = \frac{2}{n\mu} \text{Cov}(y, r) \quad (1)$$

where n is the number of observations, μ is the mean income from all sources, y refers to the series of total income, and r refers to series of corresponding ranks of the total income. On this basis, the Gini coefficient of the k th source of income (G_k) can be expressed as,

$$G_k = \frac{2}{n\mu_k} \text{Cov}(y_k, r_k) \quad (2)$$

where y_k and r_k refers to the series of incomes from the k th source and corresponding ranks, respectively. Since total income is the sum of source incomes, the covariance between total income and its rank can be written as the sum of covariance between each source income and rank of total income. That is,

$$G = \frac{2}{n\mu} \sum_k \text{Cov}(y_k, r) \quad (3)$$

It can further extend as,

$$G = \sum_k R_k G_k S_k \quad (4)$$

where R_k is the rank correlation ratio (or Gini correlation) = $\frac{\text{Cov}(y_k, r)}{\text{Cov}(y_k, r_k)}$

⁹ In estimating remittance effects on poverty in Lesotho, Gustafsson and Makonnen (1993) also subtracted remittance income from household total income (expenditure) and compared the poverty situations. They argued that the chances to be employed and to enlarge household income in a country with limited local employment opportunities will be low, at least in the short run.

Thus, the total Gini is a product of three terms: Gini correlation between income component k and total income (R_k), Gini coefficient of the k th income source (G_k), and the share of k th income component to total income (S_k).

To express the contribution of the k th income source as a fraction of total inequality, equation (4) can be expressed as,

$$\sum S_k g_k = 1 \quad (6)$$

where $S_k = \frac{\mu_k}{\mu}$ is the income share of k th source and $g_k = R_k \frac{G_k}{G}$ is the relative concentration coefficient. If $g_k > 1$, the k th income source is inequality increasing and vice versa.

One advantage of Gini decomposition by income sources is to learn how changes in particular income source will affect overall income inequality. Let consider a small change in each household's income component k equal to eY_k , where e is close 1. Using the equation (4), Stark et al. (1986) showed that the effect of a small change in income from any source to the Gini index of total income as,¹⁰

$$\frac{\partial G / \partial e}{G} = \frac{S_k R_k G_k}{G} - S_k \quad (7)$$

where S_k , G_k , G , and R_k denotes the k th income share, Gini coefficient of the k th income source, Gini coefficient of total income, and Gini correlation before the marginal income change, respectively. It states that the relative effect of a marginal percentage change in income component k upon inequality equals the relative contribution of component k to overall inequality minus the relative contribution to total income. If Gini correlation (R_k) between income source k and total income is negative, an increase in remittances decreases inequality.

3.2. Impact of Remittances on Welfare

To analyze the impact of remittances on household welfare an abbreviated social welfare function (it is also termed as Sen's type social welfare function) is used in this analysis. Sen (1976) used Gini coefficient as a measure of inequality and proposed a functional form (distribution corrected real income) as a measure of social welfare. That is,

$$W = \mu(1 - G) \quad (8)$$

where μ is the mean income and G is the Gini coefficient of the total income. It

¹⁰ For a complete derivation see Stark et al. (1986).

considers both income and inequality in an income distribution to measure social welfare of a society. It is widely used in empirical works for cardinal welfare rankings of any two income distributions. Since the social welfare function is nondecreasing function of income, the welfare (W) increases if the income of any members of society increases leaving other incomes unchanged. But, the inclusion of inequality measures (Gini coefficient) in social welfare function does not assure that any Pareto improvements raise social welfare, it depends on the distributional effect of income. That is,

$$\frac{\partial W}{\partial \mu} > 0, \quad \text{and} \quad \frac{\partial W}{\partial G} < 0$$

4. Migration, Remittances and Household Characteristics

4.1. Migration in Nepal

The three major migration patterns in Nepal are: domestic migration, migration to India, and migration to third countries other than India. The main data sources of both internal and international migration in Nepal are the decennial population censuses conducted by Central Bureau of Statistics. However, the population censuses report only the stock of migrants and do not provide information on seasonal migration or about remittances. According to the last population census in 2001, about 13.2 percent (2.9 million) of the total native born population (22.1 million) in Nepal have migrated internally. The recent migrants, those staying in the destination less than 1 year and for 1-5 years comprised 4.9% (142,547) and 28.3% (830,259) respectively. These figures include all persons irrespective of their age. The major streams of internal migration are: rural-to-rural (68.2%) and rural-to-urban (25.5%). Furthermore, the census shows that about 11% of internal migrants are reported to have migrated for employment purposes.

On the other hand, about 3.3% (762,181) of the total population of the country has migrated to other countries. Among the total number of international migrants, 77.3% have migrated to India. Because of its proximity, free movement, and no work barriers, India is the main destination for international migration for Nepali people. However, recent trends in international migration show increasing numbers of migrants beyond India, especially labor migrants to labor-demanding countries like the Gulf countries, Malaysia, and South Korea. The population census of 2001 shows over two-thirds of Nepali overseas migrants have migrated for employment, mainly in private sectors.

The main data source for this study is the Nepal Living Standards Survey 2003-04, which provides information on migration and remittances. One limitation of this survey is that it only considers a household with migrant, if the household received

remittances in the survey reference period. There is no information about the households that would have migrants but did not receive remittances; they are treated like other remittance nonrecipient households. According to NLSS 2003-04, about 32% of households (1,201 households) received remittances from 1,490 migrants. The average migrant number per household is just above one person (1.2 persons). About nine out of ten migrants are male (89%). Exactly half of the all senders are either sons or daughters (mainly sons) of receivers, followed by husbands and wives (23%), fathers and mothers (11%), and brothers and sisters (9%). The majority of the migrants (82%) are in their prime working age (15-44 years); 45% are 15-29 years and 37% are 30-44 years of age.

4.2. Distribution of Remittances by Sources

Based on the remittance holding and source of the remittances, all households are grouped into five categories for the purpose of this study. They are: (1) households receiving remittances from inside the country – “Domestic recipient” (2) recipients from India – “from India”, (3) recipients from abroad other than India – “from Abroad”, (4) recipients from both domestic and India or abroad – “from Both”, and (5) households that do not receive remittances – “Nonrecipients”. The five categories are mutually exclusive.

Table 1. Size and Share of Remittances by Sources

Source of remittances	Recipient households (%)	Mean amount of remittances (NRs.)	Total amount of remittances (NRs.in billion)	Share of remittances (%)
Domestic	44.3	16,800	9.9	21.4
From Urban Nepal	21.3	19,024	5.4	11.6
From Rural Nepal	23.0	14,738	4.5	9.7
International	51.0	47,704	32.3	69.7
From India	34.7	22,120	10.2	22.0
From Abroad	16.3	102,377	22.1	47.7
From Both	4.7	65,342	4.1	8.9
Total	100	34,852	46.3	100

The distribution of remittances among remittance recipient households shows that about 44% of households received domestic remittances, whereas 35% of households received remittances from India, 16% from abroad, and the rest 5% from both domestic and international sources (Table 1). However, in amount of remittances the largest share of the remittances (48%) came from abroad (Saudi Arabia, Qatar, UAE, Malaysia, Hong Kong, and some other countries). The amount of remittances from India alone is equivalent to the remittances amount from domestic sources (about

22%). The mean amount of remittances is the highest from abroad followed by the mean amount of remittances from India and domestic. In total, Nepal received about 46.3 billion rupees as remittances and transfer income in 2003-04.

4.3. Distribution of Remittances by Recipients

The distribution of remittances by location of households shows that about one-thirds of the rural households received remittances compared to a quarter of urban households. The main differences between the two recipients are the mean amount of remittances and the sources of remittances from where they have received remittances. The urban recipients have received mostly from internal and other countries, whereas the rural households have received from internal sources and India. Since the average size of remittances is larger from other countries, the mean amount of remittances of urban recipients is higher than rural recipients (Table 2).

Table 2. Distribution of Remittances by Recipient Households' Characteristics

Category	Number of remittance recipient hhs [?] (N)	Share of hhs receiving remittances (%)	Mean amount of remittances among recipient hhs (NRs.)	Share of remittance on income of recipient hhs (%)	Source of remittances*			
					Domestic (%)	India (%)	Abroad (%)	Both (%)
Nepal		31.8	34852	35.6				
Urban	296	25.3	69253	39.2	55.4	15.6	23.0	6.0
Rural	905	33.2	29660	35.1	42.6	37.6	15.2	4.6
Poverty status								
Non poor	958	33.3	40509	36.6	46.5	29.5	18.8	5.2
Poor	243	27.3	15134	32.2	36.5	52.8	7.5	3.2
Agricultural land size								
No agri. Land	284	27.8	40166	37.0	52.1	26.8	15.1	6.0
< 0.5 ha.	443	32.3	28657	37.6	42.5	40.3	13.0	4.2
0.5 - 1 ha.	238	32.3	32928	35.1	40.1	37.8	17.1	5.0
1+ ha.	236	34.9	43380	30.8	44.2	28.7	22.9	4.3
Education level of head								
Illiterate	793	38.1	29570	36.4	41.1	39.2	14.7	5.0
Primary school	143	22.7	32124	29.4	49.9	33.1	13.9	3.1
Middle school	153	23.7	47591	38.5	50.1	22.1	24.9	2.9
High school	87	24.5	56742	31.4	60.2	10.9	20.7	8.3
University	25	14.1	155794	47.0	49.7	13.2	27.8	9.3
Employment status of head								
Wage emp. in agri.	68	25.1	15709	27.0	46.2	39.9	9.8	4.1
Wage emp. in non-agri.	125	15.4	27333	18.1	54.6	28.7	11.1	5.6
Self emp. in agri.	584	36.0	32100	34.2	42.3	36.5	16.4	4.8
Self emp. in non-agri.	95	17.2	42312	22.5	61.8	14.0	18.4	5.8
Not working	329	56.0	46335	50.4	39.6	37.3	19.0	4.1
Caste and Ethnicity								
Higher Castes	473	35.8	37598	34.6	44.0	39.5	12.1	4.4
Newar	80	22.3	31887	28.5	65.0	13.1	15.8	6.2
Hill Janajati	286	31.9	43056	34.8	47.9	20.2	26.0	5.9
Madhesi & Terai Janajati	169	27.9	25985	37.7	46.5	36.2	13.3	4.0
Muslims	54	33.7	30932	47.3	31.6	39.8	19.0	9.7
Dalit	139	31.7	25613	35.4	32.0	53.5	12.8	1.7

* Source of remittances = percent of households receiving remittances from the different destinations, ? hhs = households

Generally the poor people are in great needs of remittances for their livelihood. But, migration, especially the foreign labor migration is costly endeavor for the poor people. It seems also true in the case of Nepal; for example, compare to 33 percent of non-poor households, only 27 percent of poor households received remittances. The small amounts of remittances they have received were able to lift them out of poverty. It is clear from the figure that the migrants from the poor households mainly went to less costly destinations, India and within Nepal compared to 19 percent of migrants from the richer households who went to abroad. Similar to poverty status of migrants, the smaller land holders of Nepal are also depended on the India and domestic migration for remittances. The households in the category “no agricultural land” are mainly non-agricultural households and mostly located at urban areas. Therefore they are relatively richer households and have higher mean amount of remittances.

The survey shows that almost half of the household heads (about 48%) are illiterate. Since they are more in number, the share of households receiving remittances in the category is also higher than other categories of educated household heads. The educated household heads are probably less likely to send their members to hard working labor jobs. However, the share of migrants to foreign countries other than India and the mean amount of remittances are increasing in trends with the increases of household heads’ education.

Some interesting findings are obtained when the remittance recipient households are grouped by the caste and ethnicity of household head.¹¹ For example, the households with Muslims and Dalit household heads received higher share of remittances from international destinations than domestic sources. In fact, Nepal has a long history of social and economic discrimination based on caste and ethnicity of people that forces some groups of people like Dalit and Muslims to divert their job search efforts to outside the country, in India or in other countries. On the other hand, the people from Hill Janajati who have a long history of working in the British army have received more remittances from abroad. Likewise, a large percentage of households from Higher castes have enjoyed remittances from different sources.

¹¹ Nepal is extremely diverse, with more than 59 main ethnicities and 37 languages, but the Hindu is main religion of 81 percent of people. For Centuries Nepal’s economic and social matters are governed by the traditional Hindu philosophy and caste system. The Hindu system is based on a belief that certain groups due to their ancestry, occupations and practices have different levels of ritual purity. The system has four main groups (*varnas*) with the **Brahman** priestly caste at the apex and just beneath them the kingly (warrior) **Kshetriya** group. In Nepal these two groups call upper castes. The **Vaishyas** who serve as merchants and producers were next in the hierarchy with the **Sudras** beneath them as laborers. Beneath them all were the “untouchables” who used to be called “small caste”, now call “Dalit”.

The 1854 National Legal Code also supported this castes hierarchy creating similar divisions. It places the members of the Brahman, Kshetriya and some high-level Newars at the top. Beneath them were made up of Nepal’s indigenous groups who now call themselves Janajati. Lower down were Muslims and foreigners. The untouchable Dalits came at the very bottom and were forbidden to enter temples or to use water sources used by high caste groups. Later in 1963 when the legal code is revised the caste-based discrimination is formally abolished, but in practice still the traces of traditional discriminations can be seen (CBS, 2006).

4.4. Household Characteristics

Table 3 presents summary statistics on households' characteristics from the survey. The table shows that among the total households (3,912), about 69.3% of households (2,711) did not received remittances, 558 households (14.3%) received domestic remittances, 379 households (9.7%) received remittances from India, 209 households (5.3%) received remittances from abroad other than India, and 55 households (1.4%) received both domestic and international remittances. Since only a small number of households have received remittances from both sources and their many characteristics are not significantly different from remittance nonrecipient households, they are not reported in the Table 3.

Table 3. Selected Characteristics of Remittance Recipient and Nonrecipient Households

Variable	Households				t-statistic		
	Receive no remittance	Receive remittances from			nonremittance vs remittance from		
		Domestic	India	Abroad	Domestic	India	Abroad
Mean household size	5.5	4.5	5.2	5.4	7.93***	2.11**	0.35
Mean number of males in hhd over age 15 years	1.6	1.2	0.9	1.2	9.54***	13.39***	5.52***
Mean number of females in hhd over age 15 years	1.7	1.6	1.9	2.0	1.56	-3.06***	-4.41***
Share of children age 0-14 years in household	0.35	0.31	0.44	0.38	3.96***	-7.39***	-1.97**
Household head (Male=1, 0=Female)	0.90	0.66	0.51	0.58	15.20***	22.2***	13.81***
Household head (literate=1, 0=illiterate)	0.47	0.35	0.21	0.36	5.24***	10.37***	2.97***
Household head's Mean year of schooling	3.4	2.6	1.3	2.8	4.06***	9.56***	1.84*
Household in (Urban=1, Rural=0)	0.18	0.16	0.06	0.19	0.9	6.34***	-0.20
Household with (agri-land=1, 0=otherwise)	0.75	0.76	0.84	0.81	-0.31	-4.04***	-1.81*
Average size of agri-land owned by household in hectare	0.78	0.80	0.67	1.01	-0.3	1.71*	-2.36**
Poverty status (poor=1, 0=otherwise)	0.32	0.23	0.40	0.14	4.03***	-3.22***	5.51***
Mean annual per capita income (excluding remittances) in NRs.	15320	11911	7274	13552	1.17	2.56**	0.4
Mean annual per capita income (including remittances) in NRs.	15320	15688	11556	32862	-0.13	1.2	-3.89***
Mean annual per capita expenditure (including remittances) in NRs.	16023	15202	10854	22310	0.71	4.2***	-3.53***
Number of households (N)	2711	558	379	209			

Note: NRs. = Nepalese currency, Rupees

* Significant at the 0.10 level, ** Significant at the 0.05 level, *** Significant at 0.01 level

Analysis of some selected characteristics of remittance recipient and nonrecipient households (Table 3) shows some important contrasts between the four groups of households: remittance nonrecipients, remittance recipients from Domestic, India, and Abroad. The household size and the share of children below 14 years of age are relatively lower in domestic remittance receiving households than the other groups. About a 55% of the domestic remittances receiving households are located at urban areas. Comparatively, the domestic remittance recipient household heads have also a moderate literacy rate. The moderate literacy rate and the urban environment could be the causes for smaller share of children and family size in domestic remittance recipient households.

A striking difference could be seen in gender of household's head; about a 30% of remittances receiving households are headed by female heads as oppose to 10% of the remittance nonrecipient households. The fact is almost obvious due to out migration of their male partners. Comparatively more husbands are absent in international remittance recipient households (from India and Abroad). Likewise, the size of land is biggest in households which received remittance from abroad, followed by domestic, and the India. Consequently, the rate of poverty is higher at recipients from India and lowest at recipients from abroad.

After analyzing some selected characteristics, and the income and expenditure levels of the households, there appears to be a kind of "income hierarchy" among the four groups of remittance receiving and nonreceiving households. That is, the households receiving remittances from India have more children, less educated heads, mostly rural located with low average expenditure, and hence they are relatively poorer. Conversely, the households receiving remittances from abroad are comparatively richer, and the households receiving domestic remittances are in between them. While the households without remittances are nearer to households receiving domestic remittances.

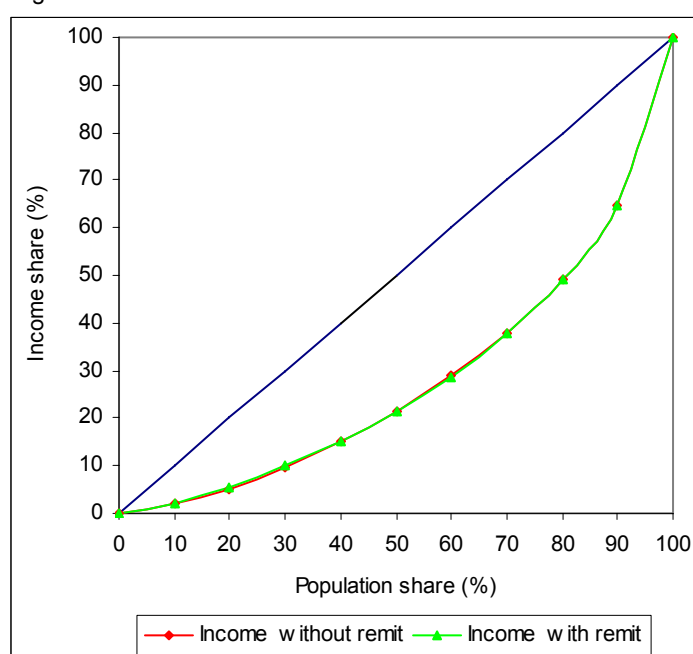
5. Impact of Remittances on Income Distribution

5.1. Including and Excluding Remittances

Since the purpose of this estimation is to find out remittance effects on overall income distribution, all households (not only remittance recipient households) are rank in income quintiles based on their per capita household income including remittances (observed income). Then income distributions are compared in including and excluding remittance regimes. Income distribution is then said to be improved or worsened according to Lorenz domination (i.e., whether one Lorenz curve lies wholly above or below a previous one) or according to one or more measures of relative inequality, such as the income share of poorest (lower deciles or quintiles) or the Gini coefficient (Fields, 1980).

Figure 1 shows that there is no clear domination of one Lorenz curve over another. In fact, they are crossed each other. If the Lorenz curves of two income distributions cross, then the inequalities of two income distributions cannot be compared using Lorenz criterion alone; an inequality measure (such as Gini coefficient) must be used to get answer (Fields, 2001). Therefore, based on Lorenz dominance criteria alone it is not cleared whether the overall income distribution is improved or not when remittance income is included in the household income. The Gini value without remittances (0.444) is almost same as the Gini value (0.443) when remittances are included in household income.

Fig. 1. Lorenz Curves of Incomes With and Without Remittances



However, a clear domination of Lorenz curve of income with remittances can be seen both at the bottom and top quintiles. Thus, it could be inferred that remittances have contributed to equalize the income distributions at the two extreme groups. The remittance from India is the main factor for the marginal improvement of income distribution in the poorest group, while the remittance from abroad is the main contributor in equalizing income distribution in the richest group. Likewise, a slight improvement could be observed in urban income distribution after remittances are included in household income, but the Lorenz ranking of rural income distributions, with and without remittances is ambiguous; they cross each other. Thus, all remittances have jointly contributed to equalize urban income distribution. In contrast, they have worsened the rural income inequality.¹²

¹² The changes in inequalities (Gini coefficients) with and without remittances by their sources are shown in Table 5.

5.2. Inequality Decomposition by Income Sources

The Gini decomposition of overall income inequality by its income sources offers two important pieces of information in inequality measures. First, it identifies the contribution of each income source to overall inequality. Second, it shows the effect of a small percentage change in any income component on total inequality. The impacts of remittances on overall income distribution are measured when the contributions of income components on total inequality are compared. The product of three terms: S_k , G_k , and R_k gives the absolute contribution of each category, but it is easy to define the contribution of each component in terms of percentage contribution (factor inequality weight of source income). Being the largest income component obviously the nonremittance income has the highest contribution on overall income distribution. It explains about 81% of total inequality. While, the remittance from abroad is found as the main contributor on total inequality among the four types of remittances. Due to its high income share and skewed distribution to the upper tail, it accounts for about 12% share of total inequality. On the other hand, the domestic remittances account for about 3.3% share of overall income inequality, whereas the remittances from India account for only 2.2% of total inequality (Table 4).

Although the orders of contributions of different types of remittances are almost similar in both urban and rural areas, their contribution weights are higher in rural areas than in urban areas. A part of the high contributions of remittances by source is explained by their higher shares in total income in rural areas and a part by higher correlation (compared to urban areas) of remittance incomes with total income. A richer analysis on whether an income source is inequality-increasing or inequality-decreasing is provided by the relative concentration coefficient of income component. The values on concentration coefficients show that the remittance income from abroad is inequality-increasing whereas the remittance income from India is inequality-decreasing. The concentration coefficient of domestic remittance is close to one; hence it is invariant to inequality. However, an enlarged share of domestic remittances leads to an increase in income inequality in rural areas.

In addition, the estimates of a small change in each of the remittance components in total inequality disclose the importance of remittance sources on overall income distribution. The last column of Table 4 shows that a one percent increase in remittances from India for all households reduces the overall income inequality by 0.01 percent. On the opposite, a 1 percent increase in domestic remittances and the remittances from abroad increases the total inequality by 0.002 and 0.053 percent, respectively. Although the effects of small changes in remittances from India and the remittances from abroad are in the same directions in rural and urban areas, the inequality-increasing effect of remittances from abroad is higher in rural areas. Whereas, the inequality-decreasing impact of remittances from India is larger in urban areas.

Table 4. Impact of Remittances by Sources on Income Distribution

Income sources by household location (Y_k)	Mean per capita income (μ_k)	Income share (S_k)	Gini coefficient (G_k)	Gini correlation (R_k)	Contribution to total Gini coefficient ($S_k R_k G_k$)	Concentration coefficient of source income [$g_k = R_k (G_k/G)$]	Factor inequality weight of source income (k) ($w_k = S_k g_k$)	Percent change in total Gini coefficient*
Nepal								
Nonremittance	12711	0.859	0.444	0.937	0.358	0.939	0.809	-0.051
Domestic remit	457	0.031	0.959	0.491	0.015	1.064	0.033	0.002
Remit from India	464	0.031	0.956	0.318	0.010	0.686	0.022	-0.010
Remit from Abroad	984	0.067	0.974	0.816	0.053	1.794	0.120	0.053
Remit from Both	174	0.012	0.994	0.658	0.008	1.477	0.017	0.006
Total	14790	1.000	0.44		0.44		1.00	0.00
Urban								
Nonremittance	24330	0.893	0.461	0.946	0.389	0.972	0.866	-0.027
Domestic remit	677	0.025	0.951	0.181	0.004	0.384	0.010	-0.015
Remit from India	222	0.008	0.984	0.146	0.001	0.320	0.003	-0.006
Remit from Abroad	1736	0.064	0.969	0.781	0.048	1.685	0.107	0.043
Remit from Both	294	0.011	0.995	0.616	0.007	1.364	0.015	0.004
Total	27260	1.00	0.45		0.45		1.000	0.000
Rural								
Nonremittance	10684	0.847	0.395	0.914	0.306	0.894	0.759	-0.088
Domestic remit	419	0.033	0.960	0.581	0.019	1.381	0.046	0.013
Remit from India	507	0.040	0.951	0.396	0.015	0.932	0.038	-0.003
Remit from Abroad	853	0.068	0.974	0.844	0.056	2.035	0.138	0.070
Remit from Both	153	0.012	0.993	0.658	0.008	1.617	0.020	0.008
Total	12614	1.00	0.40		0.40		1.00	0.00

* Percent change in total Gini coefficient, $\frac{\partial G_0}{\partial e} = \left[\frac{S_k G_k R_k}{G} - S_k \right]$

6. Impact of Remittances on Social Welfare

Although, the utility based social welfare functions are fine in theory, they can not be measured empirically. Thus a cardinal approach of utility is adopted in this analysis and it is assumed that the interpersonal utility comparison is possible. The social welfare is then expressed as a function of incomes (on which the data are available), instead of utilities. After expressing social welfare on vectors of household incomes, an abbreviated social welfare approach (or Sen's welfare function) is used for welfare rankings of income distributions in two different situations (with and without remittances).¹³ Since the social welfare function includes both mean income and a measure of inequality in its arguments, the increases in incomes through remittances tend to raise households' welfare. While, an increase of inequality would tend to reduce it. Therefore, it represents the trade-off between equity and efficiency a society face.

This study considers only incoming remittances (gross value of remittances); hence increases in income is rather obvious. However, the position of the remittance recipients and the magnitudes of the income increases could have a profound effect on overall income distribution and social welfare of the society. Table 5 presents changes in mean income, inequality and social welfare of urban and rural areas, and a whole country for different types of remittances. In national level, all remittances jointly contributed to raise the aggregate mean per capita income of households by 16.4% (from NRs. 12,711 to NRs. 14,490) without worsening the overall income distribution (the value of Gini without remittances, 0.444 is almost same as Gini, 0.443 with remittances). Consequently, the remittances contributed to raise the social welfare by 16.6% (from 7,068 to 8,238). The main contributor for this net welfare gain is found to be the remittances from India, which have contributed to raise the household welfare by increasing household income and decreasing income inequality.

Like national level, the social welfare of both urban and rural areas are also increased, however, the main contributors of the two areas have remained different. The domestic remittance is the main factor in urban welfare gain, while the remittance from India is the main contributor in rural welfare increase. In both areas the higher increases in mean incomes are observed by remittances from abroad accompanied with rises in inequalities; thus a loss of net welfare in both places. In fact, the net increase in welfare of rural area is mainly dragged by an increase in mean income, while the net welfare rise in urban area is shared by a rise in income and an equalizing income distribution.

¹³ $W = \mu(1-G)$. It is termed as "abbreviated" when social welfare function is expressed as a function of income (mean income) and some measure of inequality (Lambert, 1989). Fields (2001) also termed as "abbreviated social welfare function" with including poverty as a arguments of welfare function, i.e., $W = f(\text{mean income, inequality, and poverty})$.

Table 5. Changes in Social Welfare With and Without Remittances by Different Sources

Household location	Without all remittances	Income, Inequality, and Welfare* with remittance income					Changes in Income, Inequality, and Welfare by remittance sources (%)				
		Domestic	India	Abroad	Both	All	Domestic	India	Abroad	Both	All
Nepal											
Mean income (NRs.)	12711	13168	13176	13696	12885	14790	3.6	3.7	7.7	1.4	16.4
Gini coefficient	0.444	0.442	0.434	0.457	0.445	0.443	-0.5	-2.3	2.9	0.2	-0.2
Social welfare	7068	7348	7458	7437	7151	8238	4.0	5.5	5.2	1.2	16.6
Urban											
Mean income (NRs.)	24330	25008	24552	26066	24625	27260	2.8	0.9	7.1	1.2	12.0
Gini coefficient	0.461	0.449	0.456	0.468	0.459	0.449	-2.6	-1.1	1.5	-0.4	-2.6
Social welfare	13114	13779	13356	13867	13322	15020	5.1	1.8	5.6	1.5	14.3
Rural											
Mean income (NRs.)	10684	11102	11191	11537	10836	12614	3.9	4.7	8.0	1.4	18.1
Gini coefficient	0.395	0.398	0.388	0.413	0.397	0.404	0.8	-1.8	4.6	0.5	2.3
Social welfare	6464	6684	6849	6772	6534	7518	3.4	6.0	4.8	1.1	16.3

*Welfare = Mean income × (1-Gini)

7. Conclusion

Taylor and Wyatt (1996) pointed out that the impact of migrant remittances upon household economies in developing countries has become an important research and policy question, since the incomes of a large proportion of households in developing countries are linked with migrants' remittances. The findings from this study also show that the remittance income is an important source of household income in Nepal. It accounts for about 11 percent of all households' income and more than two-thirds of the remittance recipient households' income. Although, the chances of migrating and receiving remittances are distributed almost equally over the regions and over all caste and ethnic groups, the opportunities to migrate abroad and hence receive larger amounts of remittances are disproportionately centered to richer households. On the other hand, probably due to proximity, small transportation cost, and no work barriers, the labor migration, and hence the remittances from India are found prevalent in poor households of rural areas.

Although the aggregate impact of all remittances on overall income distribution is stable, an enlarged share of remittances leads to an increase in overall income inequality in Nepal. In particular, the remittances from abroad, which are disproportionately centered to the upper tail of income distribution, present an inequality worsening effect. On the other hand, the remittances from India retain an equalizing effect on overall income distribution because most of the migrants to India originate from the lower end of the income distribution. Meanwhile, the impact of remittances from domestic sources on overall income inequality is almost invariant.

Since social welfare is a nondecreasing function of income, an unambiguous welfare gain is associated with all types of remittances. However, the magnitudes of such increases in social welfare are controlled by the degree of income inequality induced by the remittances. In such cases, the income equalizing remittances from India are associated with comparatively larger welfare gains. While, the income worsening impact of remittances from abroad dampens the welfare gains despite a larger increase in income.

The findings from this study could have important implications for policy purposes. First, as long as extreme inequality leads to economic inefficiency in reducing poverty and is bad for social welfare, the increase of rural inequality through remittances needs early attention. Second, labor exports in general have received active support from the government in Nepal; however the labor migration to India is not receiving the priority it should. The work migration to India has been continuing for decades in an unorganized way. This study shows that the labor migration to India is a main destination for more than two-thirds of international labor migrants and a means for livelihood of many households from poor and unprivileged castes and ethnic groups. But, due to its small size, the increase in household income by the remittances from India is not significantly greater than the increase induced by

domestic remittances. The higher welfare gain in households receiving remittances from India was thus possible due to a reduction in inequality rather than by a higher increase in income alone. Therefore, the government's effort is necessary either to improve the skills of migrant labor to India for higher earnings or to ensure favorable participation of poor households in labor migration to countries other than India.

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