

# Transfer Payments, Individual Income Composition and Inequality in Bosnia and Herzegovina

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*This article assesses the impact of different categories of transfer payments on income inequality in Bosnia-Herzegovina, by analyzing individual income composition at different income levels. Transfer payments typically occur in the form of publicly provided social benefits, support from friends or relatives, remittances from abroad, or humanitarian aid. The challenge is to account for the difference that access to or exclusion from transfer payments makes for a person's position in the overall income distribution given low income levels and high unemployment. I find that familial support tends to be a supplemental income source for people at the lowest end of the income distribution without altering their income rank, unlike publicly provided social benefits. Inequitable accessibility increases inequality within the low-income part of the population. Notably, support from relatives within the country targets the poorest income groups much more effectively than remittances do.*

## Introduction

The distributional aspects of transfer payments have not been very widely examined in the context of developing and post-conflict societies. For the Bosnian case, there is no previous research this article could draw upon. Inequality in general, however, has received a lot of attention in the past in the context of development policy. As it will be argued in the next section, in Bosnia and Herzegovina inequality is also connected to many of the challenges that put state building and conflict transformation in the Bosnian post-war society at risk. As far as remittances are concerned, while they are widely lauded as a means of reducing poverty in developing countries, previous research has shown that their impact on inequality is ambiguous and unspecified a priori (González-König and Wodon, 2002; Stark, Taylor and Yitzhaki, 1986; Taylor et al. 2005).

The empirical literature on inequality in Bosnia and Herzegovina is likewise rather thin in English-language publications. Research on the determinants of income inequality in Bosnia and Herzegovina has up to now only been conducted by Marcelo Bisogno and Alberto Chong (2002a and 2002b). They analyze the influence of household characteristics, ethnic and regional differences on inequality. On the consequences of inequality in Bosnia and Herzegovina some research has been done by Yusuf Bangura (2004) who covers Bosnia and Herzegovina within a comparative study on inequality, multi-ethnicity and state capacity. Robert Kunovich and Randy Hodson (2002) reflect the role of inequality in the outbreak of the war in Bosnia and Herzegovina.

The data used in this study stems from the 2004 wave of the annually conducted longitudinal Bosnian household living standards survey, which is administered by the Agency for Statistics of Bosnia and Herzegovina<sup>1</sup> and based on the World Bank LSMS survey of 2001. The dataset extracted from the survey includes 4103 individuals with a monthly net income ranging from 10 Convertible Marks (KM) to 7000 KM (the KM is pegged to the Euro at the fixed rate of 0.51129 KM/€). Mean

income of the selected group is 343 KM per month, the median income is 270 KM per month. According to the UNDP poverty profile for Bosnia and Herzegovina, the relative poverty line, estimated on the basis of the LSMS surveys, corresponds to a monthly income of 185 KM (UNDP, 2004).

After summarizing facts on inequality in Bosnia and Herzegovina and describing the different categories of transfer payments (sections 3 and 4), an approach will be developed to compare the distributional impact of the transfer payments (section 5 and 6). The results and conclusions will be represented in the subsequent sections, stating that there are considerable differences in the extent to which the different categories of transfer payments function as supplementary incomes for people at the bottom of the income distribution and in their overall impact on inequality.

## Why inequality matters for development policy in Bosnia and Herzegovina

High prevalence of poverty and pronounced social inequality with respect to income, assets and economic opportunities are a characteristic aspect of Bosnia and Herzegovina's postwar society. The Bosnian civil war of 1992-1995, in addition to the fact that it had caused the death of 200,000 people and the displacement of another two million in a country of originally about 4.5 million inhabitants, had been responsible for an extreme decline in living standards and a sharp rise in inequality.

Before its independence in 1991/92, the Yugoslav republic of *Bosnia-Herzegovina* had a structurally weak economy but a relatively egalitarian society (Bangura, 2004: 28). Despite the region's economic backwardness, the development of Bosnia-Herzegovina had been a central priority of Jozip Broz Tito's authoritarian development strategy for Yugoslavia. His dirigistic industrialization policy was mainly designed to ensure the supplies for the arms industry. It transformed the economic structure of Yugoslavia's mountainous heartland from subsistence agriculture into heavily subsidized industrial production

within only a few decades. With the Olympic Winter Games of Sarajevo in 1984, Bosnia-Herzegovina's unprecedented level of development had culminated symbolically.

The collapse of the Yugoslav state eventually hit Bosnia-Herzegovina very hard. An immense economic breakdown coincided with the collapse of the multiethnic society (see for instance Kaldor 2001 on the social consequences of the economic collapse). The ensuing civil war had the effect that a large majority of the population was thrown back to the economic existence minimum or below, even though people in different regions were affected to varying degrees. On the other hand, a small number of individuals were able to take advantage of the increased scarcity of vital goods and supplies and accumulated personal wealth as a result of the conflict economy. The armed conflict had economic consequences beyond the mere demolition of most productive structures and the redistribution of economic assets into the hands of a few powerful people: Most importantly, the civilian population's patterns of coping with the circumstances became increasingly dependent on the tenacious system of patronage into which the power structures within the ethnic groups and nationalistic parties had evolved.

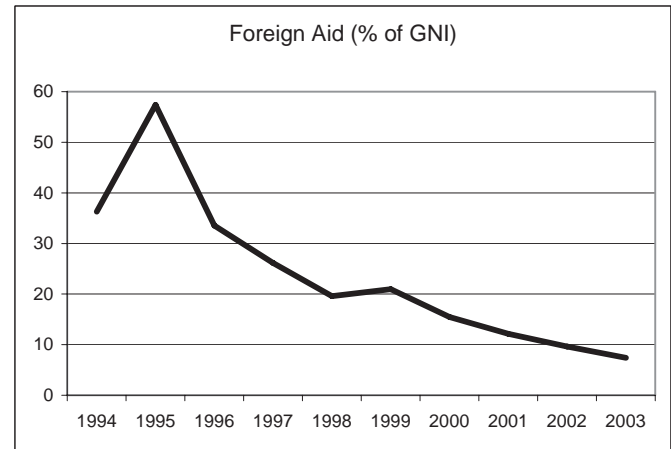
When the Dayton Peace Accords were signed in 1995, they initiated a process of peace building, state building and conflict transformation that the Bosnian society has been undergoing since then. This process faced a severe risk of failure from the beginning on, due to a pressing level of poverty and patterns of social inequality perpetuating the societal transformations of the war period. The new Bosnian state had inherited a fragile society and lack of confidence with its complicated institutional structure and with the democratic procedures. More than most other aspects, the reduction of poverty and inequality is therefore a crucial component of entrenching popular support for the political structures and creating a viable post-war order in Bosnia and Herzegovina (see Sambanis, 2004 and Tommasoli, 2003).

Still eleven years after Dayton, some key functions of the multiethnic Bosnian state are not viable without support and intervention from the international community. This concerns in particular, but not exclusively, the aid dependency of the current system, respectively its capacity to sustain itself economically, the social safety net and the efficiency of public institutions (cf. Bieber, 2002). Since 2002 however, partly also as a result of changes in the management and the strategy of the international community's involvement, some essential reforms have been carried out in Bosnia and Herzegovina and have contributed considerably to the functioning and the capabilities of the Bosnian state. But this positive trend is put into perspective by the rapid decline of foreign aid inflows in the past years (see Figure 1), which is aggravating the need for public institutions that take a more comprehensive role in providing at least a basic level of social security and equitable opportunities. This is

being said in view of very high poverty headcount ratios in both entities of Bosnia and Herzegovina<sup>2</sup>, namely of 21% in the *Republika Srpska* and 15% in the *Federacija BiH* (UNDP Poverty Profile Bosnia and Herzegovina 2004).

Figure 1

#### Annual Foreign Aid Inflows as % of GNI



(Source: WDI online.)

Besides its linkage to social stability and state capacity, there is yet another aspect of the relationship between inequality and development in Bosnia. Already in communist times, social power and influence tended to be monopolized by elite networks, a phenomenon known as *nomenklatura* system. The war and the collapse of the state had the effect of aggravating the existing patrimonialism and throwing individual inhabitants into far-reaching dependence on local elites. One of the biggest encumbrances the Bosnian post-war institutions have to overcome is the continuing *clientelism*, which stands for the dependence of individuals on contacts to persons with public influence for access to employment, to various public services or simply to avoid harassment by public institutions. As Robinson and Verdier's model of clientelism suggests, inequality might be highly conducive to clientelism (Robinson and Verdier, 2002).

#### Facts on Income Inequality in Bosnia and Herzegovina

The only currently available measure of household income inequality in Bosnia and Herzegovina is the Gini coefficient computed on the basis of the World Bank-led 2001 Living Standards Measurement Survey (LSMS) and the subsequent annual household panel surveys based on a subset of the households contributing to the LSMS survey. The Gini coefficient 2001 was 0.26 (in both entities) and 0.27 in 2004 (0.26 in the *Republika Srpska* and 0.28 in the *Federacija BiH*), according to the UNDP Poverty Profile for Bosnia and Herzegovina. However, as the 2004 survey represents only individuals falling into the income range from 10 to 7000 KM per month, it does not reflect the extremely high, often informal or illegal

incomes of a very small number of people in the society who are indeed unlikely to be available for participation in income surveys. Evidence for this phenomenon should be sought in the vast body of literature on organized crime, privatization abuse and humanitarian aid abuse that has been written on the case of Bosnia and Herzegovina (see for example Vučetić, 2002, Donais, 2001 or Ehrke, 2003).

In Bisogno and Chong's (2002a) study on inequality in Bosnia and Herzegovina, a Gini coefficient of 0.45 had been computed for the distribution of male adult incomes.<sup>3</sup> Compared to other transition countries, this reflects a very high inequality, narrowly surpassed only by Russia (Bisogno & Chong, 2002b: 320f.). In the 2004 wave of the Bosnian Living Standards Survey the Gini coefficient for the male and female over 20 year old income-earning population was 0.43, that is, practically at the same level as Bisogno and Chong's measure in 1997.

To sum up, inequality in monthly net incomes is very high in Bosnia and Herzegovina in comparison to other post-communist countries. Beyond that, the household panel surveys are subject to potentially high selection bias in measuring inequality, leading to an underestimation of income inequality. The by far lower Gini coefficient for household incomes indicates that it is likely that household inequality is mitigated by the presence of several contributing household members in the poorer households. Over all however, as sociological literature (Bićanić and Franičević, 2004) and some measures of public perception<sup>4</sup> suggest, inequality is nevertheless an inherent aspect of the Bosnian post-conflict society, and, as pointed out in the previous section, connected to several of its essential functional problems.

The roots of economic inequality in Bosnia reach back to both the pre-war period and the consequences of the war itself. Some general causes of the inequality include: (1) the lack of self-sustainability of the Bosnian economy and as a consequence a high unemployment rate around 43% in the past years (UNDP, 2006: 71), (2) poverty and social marginalization, (3) a large shadow economy due to dysfunctional public institutions, residual structures of the war economy and as a consequence of post-communist transition problems, (4) clientelism and individual dependence on local power structures, and as an important cause also (5) the displacement of people and the loss of property as a result of the war. Moreover, the war itself had affected individuals with differing severity, leading to an unequal distribution of chances, opportunities and physical capabilities to earn income in the post-war period.

### Categories of Transfer Payments and Productive Incomes

From the Bosnian Living Standards Survey, individual data on a variety of transfer payments can be extracted. They can be categorized as either (1) publicly provided social welfare payments, (2) remittances from abroad, (3) financial support from relatives or friends within Bosnia

and Herzegovina and (4) humanitarian aid.

(1) Social Benefits – Because the distribution of individual net incomes rather than of household incomes will be relevant for further analysis<sup>5</sup>, the category of social welfare income will comprise only such payments that depend on individual characteristics of a person influencing their access to productive incomes. Included are therefore unemployment benefits, veterans' pensions, war disability pensions, survivors' pensions, old age pensions and disability pensions. Excluded are such payments as children's benefits and others that are related to household characteristics. In most cases, and unlike the other categories of transfer payments, social benefits are the only source of or almost the entire income for its recipients (see Figure 2).

(2) Remittances – Remittances are understood as support received from relatives or friends living outside of Bosnia and Herzegovina. Remittances play an extremely important role in the Bosnian economy. Annual remittances to Bosnia and Herzegovina add up to 22.5 % of the Bosnian GDP (World Bank Global Economic Prospects, 2006: 90). This is an extraordinarily high figure and is surpassed only by very few other countries in the World. At present, there are still about one million natives of Bosnia and Herzegovina living abroad. The largest diaspora groups are living in Germany and other EU countries, but also in Croatia and Serbia for the respective ethnicities. In the 2004 Living Standards Survey, remittances tend to account for either almost the entire income of a recipient or for only a small part below 20 percent (see Figure 2).

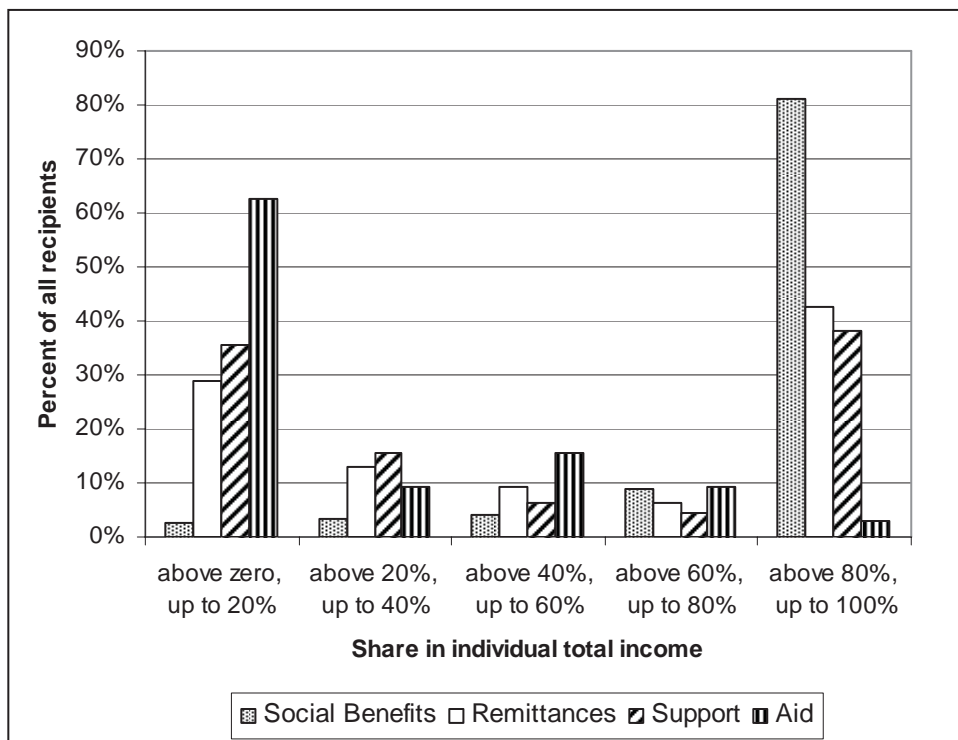
(3) Support from within Bosnia and Herzegovina – Like Remittances, the support from relatives or friends within the country accounts for either a small or a very large, but seldom a medium proportion of an individual's income. This suggests that both remittances and support from within the country are a supplementary source of income for many recipients. This however does not define yet whether the recipients are in greater need for supplementary incomes than others who do not have access to this form of transfer payments.

(4) Humanitarian Aid served as a major source of income during and immediately after the civil war. Since then, it had constantly lost its importance for households' livelihood strategies, which is supported empirically by Stites' et al. (2005) household livelihood study. In the 2004 Bosnian Living Standards Survey only a very small number of respondents were receiving humanitarian aid. Because of its insignificance it will therefore not be included in the further analysis.

(5) Productive incomes – The residual component of the individual net income without the incomes from transfer payments are summarized as "productive incomes". These include incomes earned from private or public sector employment, ownership of an enterprise, self-employment in form of free professions or so-called "small business", work for international organizations and farming. The incomes earned from this category

vary considerably. Notably, the salaries earned from employment in international organizations are far above those in other sectors, but this is consistent with the observation that the participation of international organizations and NGOs in the Bosnian economy might account for about one third of the Bosnian GDP (Ehrke, 2003). Also notable is that farming can account for either medium-high or very low incomes even below those from transfer payments. In Bosnia and Herzegovina exists a very low-productivity if not subsistence agriculture sector alongside with more advanced agriculture (Boijnec, 2005). Often, agriculture is only a secondary income. Rural poverty is widespread and has been caused by the capital loss and farmland degradation during the war (IFAD, 2005).

Figure 2  
Frequency distribution of the share of different transfer payments in the total individual income



(Source: 2004 Bosnian Living Standards Survey.)

### How Income Inequality is Related to Transfer Payments

There are two possible ways of looking at income inequality: at the household level and at the level of income-earning individuals. Household level analysis is very widespread in poverty-related research on inequality and for the measurement of living standards. More generally, whenever the social and economic effects of inequality are in the center of attention, households would appear to be the natural unit of reference. If the research is related to the causes of inequality though, then individual characteristics might be of interest that could become undistinguishable in a household context.

For the purpose of assessing the efficiency of different forms of transfer payments in reducing income inequality it is sensible to choose income-earning individuals as the level of analysis, because the individual access to transfer payments is by itself unequally distributed and depends on the social characteristics of a person. Household income figures, adjusted for an equivalent household size, are also ignorant of the income differences between the individual members of a household. Whether the person with relatively higher or the household companion with relatively lower total income has better access to transfer payments makes a difference that should not be neglected. By the design of the Bosnian Living Standards Survey it is possible to identify the amount of various transfer payments that every household member receives on monthly average.

This study considers individuals aged 20 or older in the year of the survey and receiving an average monthly net income of at least 10 KM. Genuinely

economically dependent people are consequently not included, although they certainly consume parts of another person's income. This however would not happen as a result of transfer payments but merely by participating in the overall household consumption. Therefore, they obtain access to incomes and transfer payments through some other person. What matters for the efficiency of transfer payments in mitigating income inequality is rather this other person's access to transfer payments in relation to her or his income level. Nonetheless, it should be noted that under this notion of income inequality a person's position in the income distribution does not necessarily correspond with its rank in terms of living standards, but rather with its capability (and

theoretically also its willingness) to generate a certain personal income under circumstances where the access to income generating activities is distributed unequally.

In view of unemployment rates far above 40%, the assertion that access to formal employment is distributed unequally in Bosnia and Herzegovina does not need much further motivation. The question is, whether these roughly forty percent of the adult independent population tend to be identical with the two lowest-income quintiles of the income distribution.

A normal situation would exist if the individuals who rely most on transfer payments as an income source were increasingly concentrated towards the lower end of the income distribution. This would imply that transfer payments compensate individuals for the lack of access

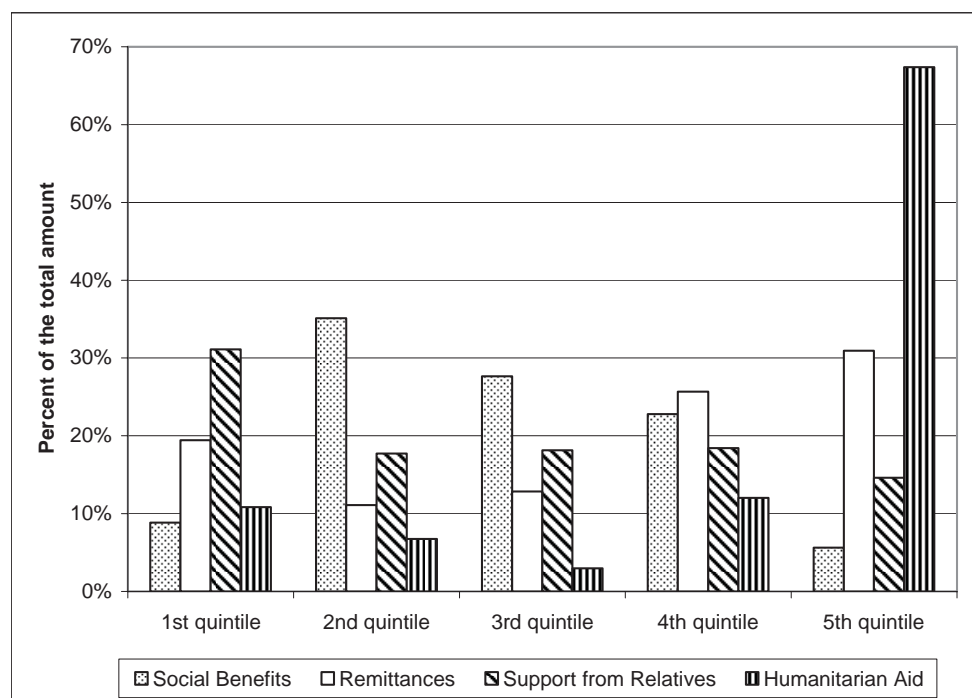
to productive income generating activities. However, if the individual access to transfer payments is unequal and not motivated by need, then the outcome can be much different. A number of effects ought to be taken into consideration for a careful analysis of the relation between transfer payments and income inequality.

First of all, a considerable proportion of the poorest individuals could be excluded either from all or from some forms of transfer payments. In that case, for the lower end of the income distribution a higher share of transfer incomes in the individual income composition would be correlated with a higher income rank. Second, the amount of an individual transfer income could be larger than the amount earned from certain productive incomes or from other forms of transfer incomes. Under these conditions, a positive share of this transfer income in the individual income composition would tend to coincide with a higher income rank of the recipient compared to individuals who depend more on those alternative sources of income. Third, the absolute amount of transfer incomes received by an individual on a certain level of income explains less about the quality of the transfer payments as a determinant of the individual income rank than their share relative to the incomes earned from other sources does. In the aggregate, transfer payments have the effect of reducing inequality in net incomes as long as the amount allocated to a lower-income subset of the population is higher than the amount allocated to a higher-income subset.<sup>6</sup>

In a comparison across equally sized subsets of the population based on the income quintiles in the 2004 Bosnian LSMS dataset, the allocation of the aggregated total amount of transfer payments exhibits an interesting pattern, suggesting that all of the three aforementioned effects take place. Figure 2 compares the four categories of transfer payments and enables the following conclusions: 1) The population ranked below the lowest-income quintile seems to be excluded from access to the publicly provided social welfare payments, as less than 9 % of the total social welfare spending is received by the lowest-income 20 % of the adult independent population. For the second quintile however, this figure is the highest of all, suggesting that access to social benefits would shift a large number of individuals upwards in their income rank. This would imply that the unequal access to social benefits increases income inequality among the lowest-income 40 % of the population (first effect). 2) The amount of remittances and support from within the

country allocated to the first quintile is higher than the amount allocated to the second quintile. This suggests that both forms of transfer payments do not change the income ranking in the two lowest-income quintile as much as social benefits, but contribute to reducing the income difference between individuals of higher and lower rank in the income distribution. 3) The amount of remittances per quintile increases from the second quintile on. This suggests that despite their leveling effect within the lowest two quintiles, remittances increase the overall income gap between the higher and the lower income quintiles. This is not the case with support from relatives and social benefits. 4) Humanitarian Aid finally is distributed in a very questionable way, accruing above all in the highest-income quintile. However, as noted before, the number of aid recipients in the survey is very small and humanitarian aid has become very insignificant as a source of income in Bosnia and Herzegovina, so essentially the information obtained about it is not relevant for this study on transfer incomes.

Figure 3  
*Distribution of the total amount of transfer payments across income quintiles*



(Source: 2004 Bosnian Living Standards Survey.)

All of these results should be understood in the light of the fact that for the empowerment of individuals it is most important that in the two lowest-income quintiles nobody is left behind. This is where Economic and Social marginalization occurs, which, as mentioned initially, is among the highest risks for the peace building process in Bosnia and Herzegovina.

## Approach to Measuring the Efficiency of Transfer Payments in Reducing Income Inequality

Comparing the efficiency of Social Benefits, Remittances and Support from within the country in mitigating income inequality requires a measure of how a particular form of transfer payment is distributed across a ranked list of individual incomes, controlling for the change in income rank induced by the access to the transfer payment. The crucial question is, whether a high share of the respective transfer payments in an individual's income composition tends to coincide with a low rank of the individual's overall net income, including the transfer payments component. The more this is the case for a particular form of transfer payment, the more efficient is it in narrowing the income gap without changing the individual income rank substantially.

A way to evaluate this quality of the different forms of transfer payments is an ordered probit model where the probability for an individual of belonging to a particular income quintile is the dependent variable and the shares  $x_i$  of each of the different transfer payments in the individual total income serve as explanatory variables.

$$\begin{aligned}
 P(\text{'Quintile} = 1') &= \phi\left(\mu_1 - \sum_{i=1}^K \beta_i \cdot x_i\right) \\
 P(\text{'Quintile} = 2') &= \phi\left(\mu_2 - \sum_{i=1}^K \beta_i \cdot x_i\right) - \phi\left(\mu_1 - \sum_{i=1}^K \beta_i \cdot x_i\right) \\
 P(\text{'Quintile} = 3') &= \phi\left(\mu_3 - \sum_{i=1}^K \beta_i \cdot x_i\right) - \phi\left(\mu_2 - \sum_{i=1}^K \beta_i \cdot x_i\right) \\
 P(\text{'Quintile} = 4') &= \phi\left(\mu_4 - \sum_{i=1}^K \beta_i \cdot x_i\right) - \phi\left(\mu_3 - \sum_{i=1}^K \beta_i \cdot x_i\right) \\
 P(\text{'Quintile} = 5') &= 1 - \phi\left(\mu_4 - \sum_{i=1}^K \beta_i \cdot x_i\right)
 \end{aligned}$$

If a form of transfer payment not only changed the total income of the recipient, but also shifted the recipient into a higher income rank, then the access to this transfer payment would have a positive marginal effect on the probability of belonging to a high-income quintile. The strength of an ordered probit model is that it can evaluate this effect. Ordered probit models are not uncommon in research on the causes or determinants of inequality and have been used for instance by Bisogno and Chong (2002a) who tested a variety of social characteristics as determinants of inequality in Bosnia and Herzegovina.

As argued before, it is sensible to use the shares in the total individual income rather than the absolute amounts of transfer incomes, because they convey information on how much a person depends on transfer payments. If the result were that a person who relies very strongly on the income from a transfer payment belongs to a high-income quintile with high probability, then the corollary would be

that the access to this transfer payment moves a person towards the upper end of the income distribution and is therefore among the causes of the existing inequality. If however a high share of a transfer payment in the individual income predicts a high probability of belonging to a lower-income group, it follows that in absence of the transfer payment people in the lower income ranks with access to the transfer income would be even worse off and thus the transfer payment mitigates inequality.

## Results

Significant results at the 95% confidence level were obtained for all of the three coefficients for the share of social benefits, the share of remittances and the share of support from within the country in the total individual income from the ordered probit regression (see Annex B for the statistical results). A likelihood-ratio test rejected joint insignificance of the coefficients.

Relevant for the interpretation of the results are the marginal effects of a transfer payment's share in the total income on the individual probability of belonging to a particular income quintile. If the access to transfer

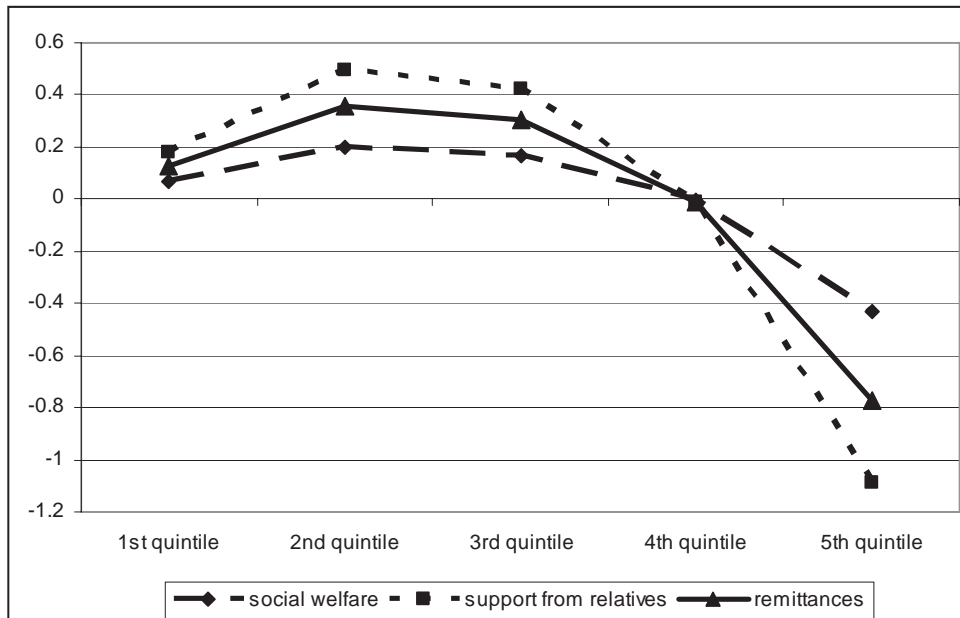
payments as a source of income is in focus, these marginal effects have to be evaluated at zero. They express by how much a marginal increase from zero, i.e. receiving access to a transfer payment, affects the probability of an individual of belonging to each of the income quintiles.

Figure 4 represents on the one hand some similarities between the three categories of transfer payments: First, receiving transfer payments, regardless of their form, has a negative marginal effect on the probability of belonging to the fourth or the fifth income quintile. Consequently, all of them are effectively targeted at the less wealthy 60 % of the population. Second, for all three forms of transfer payments the marginal effect is higher for the second quintile than for the

first quintile. This suggests that a considerable proportion of the members of the first quintile are excluded from receiving some or all forms of transfer payments.

But most interestingly, the three categories of transfer payments appear to differ with respect to the extent to which access to them favors people with low total income. Notably, support from within the country surpasses remittances in this quality and both surpass publicly provided social benefits. This can be concluded from the higher marginal effect of the income share of support from within the country compared to the income shares of remittances and social benefits on the probability of belonging to one of the three lower-income quintiles and the lower (and negative) marginal effect on the probability of belonging to the two higher-income quintiles. The hypothesis that all of the three coefficients were equal was rejected by a likelihood ratio test.<sup>7</sup>

Figure 4  
Marginal effect of the income shares of transfer incomes on the probability of belonging to each of the income quintiles



( Source: Author's statistical estimation.)

## Conclusions

While the transfer payments of all three categories have been found to be targeted particularly at the lower-income parts of the population, the extent to which this is the case differs between them. Positive marginal effects of access to each of the transfer incomes on the recipient's probability of belonging to a lower income quintile and negative marginal effects on the probability of belonging to a higher income quintile indicate that these are supplementary sources of income, mitigating the consequences of unequal access to productive incomes. The results suggest that both remittances and support from relatives or friends within the country are better targeted at people with low incomes than publicly provided social benefits are. A comparison of remittances and support from within the country indicates that the support from within the country is in turn better targeted towards the people in need of supplementary income than remittances.

Contrary to the social benefits, remittances and support from within the country tend to be merely supplementary, not a sufficient income. But they come into play where people are excluded from the access to other income sources. This would suggest that both remittances and support were more efficient at reducing income inequality. However, the distribution of the absolute amounts of the transfer payments across income quintiles (see Figure 4) shows that only social benefits and support from within the country contribute to closing the income gap between the higher-income and the lower-income quintiles. In contrast, a large share of the remittances actually flows to the higher-income quintiles, even if

there they form only a smaller share in the individual incomes there, which had been confirmed by the ordered probit regression. Therefore, remittances do not reduce income inequality overall, but do indeed reduce inequality among the population with low incomes.

The inequality within the three lower-income quintiles is not without relevance, however. The lower income ranks are where social marginalization occurs, where the consequence of exclusion from access to income-generating activities become apparent. Between the first and the second income quintile there is a clearly recognizable effect that access to transfer payments determines the individual income rank. At the same time it is apparent that remittances and support from within the country are targeted more at those left behind by the public social benefits.

While social benefits, based on their sheer magnitude, have the largest effect in reducing income inequality, remittances and support from within the country have the effect of mitigating the consequences of inequality within the lower income ranks and hence should not be underestimated as a force that prevents further social marginalization and exclusion for some of the poorest.

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## Appendix

### Annex A. Income Quintiles

	Income Range	Mean Income
1st Quintile	10 KM to 130 KM	62 KM
2nd Quintile	131 KM to 220 KM	177 KM
3rd Quintile	221 KM to 320 KM	275 KM
4th Quintile	321 KM to 500 KM	417 KM
5th Quintile	501 KM to 7000 KM	851 KM

### Annex B. Ordered Probit Regression Coefficients, dependent variable: P (quintile)

Variable	Coefficient	Standard Error	95% Confidence Interval	
Income Share of Social Benefits	-1.179806*	0.0402464	-1.25869	-1.10092
Income Share of Support from BiH	-2.977295*	0.0994679	-3.17225	-2.78234
Income Share of Remittances	-2.122305*	0.0769626	-2.27315	-1.97146

N=4103, Likelihood Ratio Test Statistic  $-2\ln\lambda \sim \chi^2(3) = 2117.2$ ,

Pseudo R<sup>2</sup>=0.1606

\* indicates significance at the 95% confidence level

## End Notes

1 [http://www.bhas.ba/download\\_eng.htm](http://www.bhas.ba/download_eng.htm)

2 The Dayton Peace Accords in 1995 established the two 'entities' and that constitute together with the jointly administrated Brčko District the sovereign state 'Bosnia and Herzegovina'. The comprises 51% of the area and approximately 62% of the population of Bosnia and Herzegovina, the Republica Srpska 49% of the area and approximately 38% of the population. 92% of the inhabitants of the are of Serbian ethnicity, while in the approximately 73% are Bosniaks and approximately 22% are Croats.

3 According to a 1997 survey carried out by CIET International on commission of the World Bank.

4 Over 68% of the population strongly agreed in the survey for the 2005/#4 UNDP Early Warning Report that the country "belongs to the rich and offers no help to the poor" (UNDP, 2005: 28).

5 This will be motivated in the next section.

6 Of course, this is only true with respect to the inequality in the distribution of incomes, which is being analyzed here. It should not be ignored though that the source of transfer payments is taxation, which in turn has an effect on the income inequality.

7  $H_1: \beta_1 = \beta_2 = \beta_3$ , LogLikelihood of restricted model: -5783.42, LogLikelihood of unrestricted model: -5533.36, Likelihood ratio  $\lambda = 2.5299E-109$ , test statistic  $-2\ln\lambda \sim \chi^2(2)$ .