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Social Assistance Transfers in Bosnia and Herzegovina

Moving Toward a More Sustainable and Better-Targeted Safety Net

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US 1.00 = KM 1.44

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ABBREVIATIONS AND ACRONYMS

BH	Bosnia and Herzegovina
CEPOS	Center for Policy Studies
CSW	Center for Social Work
CVW	Civilian Victims of War
ECA	Europe and Central Asia
EU	European Union
FBH	Federation of Bosnia and Herzegovina
GDP	Gross domestic product
HBS	Household Budget Survey
HMT	Hybrid means-testing
IT	Information technology
KM	Bosnian mark
LCU	Local currency unit
LSMS	Living Standards Measurement Survey
MT	Means-testing
NWI	Non-War Invalids' Benefit
O&C	Oversight and controls mechanisms
OECD	Organisation for Economic Co-operation and Development
PAE	Per-adult equivalent
PC	Per capita
PMT	Proxy means-testing
RS	Republika Srpska
VAT	Value-added tax
VMT	Verified income and asset-tested programs

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SOCIAL ASSISTANCE TRANSFERS IN BOSNIA AND HERZEGOVINA: MOVING TOWARD A MORE SUSTAINABLE AND BETTER-TARGETED SAFETY NET

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EXECUTIVE SUMMARY

Bosnia and Herzegovina (BH) spends 4 percent of its gross domestic product (GDP) on non-insurance social protection cash transfers.[1] With such a significant share of the country's GDP going to these transfers, BH is one of the highest spenders in the Europe and Central Asia (ECA) region (Figure ES.1). By comparison, the regional countries' expenditure average is 1.6 percent of GDP, and the Organisation for Economic Co-operation and Development (OECD) nations' average is 2.5 percent. This level of spending on non-insurance social protection cash transfers is fiscally unsustainable, particularly given the impacts of the global financial and economic crisis on public revenues.

Figure ES 1: International Comparisons of Public Spending on Social Assistance

Source: Lindert and others (2008).

For historical reasons, social benefits in BH have been heavily dominated by "rights-based" programs designed to protect war veterans or their surviving dependents ("veteran-related

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[1] Health, pension, and unemployment insurance programs are examples of insurance-based schemes. A significant proportion of the ostensibly insurance-based benefits (for example, special pensions) are also financed through the general government budget.

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benefits"). Veteran-related benefits absorb about three-quarters of total spending on non-insurance social protection cash transfers. The share is slightly lower in the Federation of Bosnia and Herzegovina (FBH) than in Republika Srpska (RS)—the two Entities that make up Bosnia and Herzegovina.

Both Entities also operate a number of civilian benefits that account for about one-quarter of total spending on non-insurance social protection cash transfers. These include means-tested programs such as Social Assistance Benefits and the Child Protection Allowance. In addition, FBH has two rights-based disability benefit programs that have increased significantly over time (Figure ES.2).

Figure ES 2: Upsurge in Rights-based Benefits in FBH

Source: Authors' calculations using HBS 2007 data.

Despite significant fiscal outlays on non-insurance social protection cash transfers, their coverage of the poor is low. Moreover, when viewed in the aggregate, non-insurance social protection cash transfers are *regressive* in nature; that is, a higher share of overall expenditure on these benefits is going to people in the richer quintiles of BH's population. In contrast, those in the poorest quintile receive only 18 percent of overall non-insurance social protection cash transfers—a smaller proportion than their share of the total population of BH (each quintile represents 20 percent of the population ranked by consumption) (Figures ES.3 and ES.4).

Figure ES 3: Regressive Distribution of Social Protection Benefits in BH

BiH: Targeting Accuracy of Social Protection Benefits
(Distributional Incidence; 2007 HBS)

All Social Protection

All Social Insurance
(Pensions)

All Social Assistance
(Veterans+Civilian)

Source: Authors' calculations using HBS 2007 data.

Figure ES 4: Targeting Accuracy of Social Assistance Benefits – International Comparison

Weak Targeting Accuracy of Social Assistance Benefits:
BiH, FBH, RS with International Comparison

Source: Nguyen and Lindert (2009) and authors' calculations using HBS 2007 data (for BH).

Within the sphere of non-insurance social protection cash transfers, veteran-related benefits are the most regressive, with 27 percent of veteran-related benefits going to people in the richest quintile of the population, while those in the poorest quintile receive less than 15 percent of veteran-related benefits. Civilian benefits are somewhat better targeted. Twenty-six percent of the expenditure on the Child Protection Allowance (which is means-tested) and 30 percent of the expenditure on the Social Assistance Benefit (also means-tested), Non-War Invalids' Benefit, and Civilian Victims' of War Benefit reach the poorest quintiles of the BH population. Nevertheless, these outcomes are not very good when compared with other countries.

Means-tested benefits are better targeted in RS, where those in the poorest quintile receive 48 percent of Social Assistance benefits and 35 percent of Child Protection Allowances. This performance is reasonable by international standards for poverty-focused programs, although there is certainly room for improvement since some programs in new European Union Member States in the ECA attain targeting accuracy outcomes of 70 to 80 percent (on a par with means-tested programs in the United States and Brazil).

The poverty-reduction impact of non-insurance social protection cash transfers is quite limited and falls short of regional and international norms. As mentioned, BH spends, on average, about 4 percent of GDP on these benefits. However, coverage of the poor is low (about 15 percent of those in the bottom quintile report receiving veteran or civilian benefits) and benefits are generally regressive (those in the poorest quintile receive 18 percent of total non-insurance social protection cash transfers in BH). Given those patterns, it is not surprising that poverty-reduction impact is negligible. Indeed, the poverty headcount rate is estimated in the 2007 Household Budget Survey (HBS) at about 18 percent of the population *with the transfers* counted in total consumption (incomes). *Without the transfers*, the poverty headcount would increase only slightly to 19.2 percent of the population (so transfers reduced poverty by only 1.2 percentage points, or 6 percent). By way of contrast, the poverty impact of social insurance benefits (pensions) is much higher—without these transfers poverty would increase to 25.8 percent of the population.

The opportunity costs of public spending on generally regressive transfers are also high. Public expenditures on non-insurance social protection cash transfers absorb a huge share of the Entities' respective budgets. This level of spending requires buoyant public revenues. However, public revenues will be under continuing pressure in view of the impending economic crisis. Moreover, devoting a large proportion of public funds to social transfers has the effect of crowding out resources that could be devoted to public investments—which will be increasingly needed to stimulate growth as the economy begins to sag under the impact of the world economic crisis. In addition, there is evidence that some rights-based programs create disincentives for employment.

This situation is fiscally unsustainable, economically inefficient, and socially inequitable. BH needs to completely overhaul its non-insurance social protection cash transfer programs. There are many ways in which BH could reform these programs and put in place measures aimed at developing a social safety net that is: (a) less of a burden on public resources, (b) more efficient, and (c) better targeted to the poor. Specifically, it is recommended that the governments in BH consider a three-pronged approach with measures to:

- Improve and introduce targeting mechanisms to better channel resources to the poor;
- Strengthen benefits administration and beneficiary registry systems; and,
- Rationalize disability-related benefit schemes.

An increasingly widespread recognition of the need for rationalization of the non-insurance social protection cash benefits is discernible in both the decision-making circles and in the public discourse in BH. This is a new development. In FBH, in particular, it is increasingly clear to decisionmakers that the unsustainably large portion of these social transfers in relation to the rest of the FBH budget is counterproductive to the objective of adequately protecting those in acute

need, especially in view of the meager coverage of the poor by the current programs. This realization has provided a new impetus for reform and given a new context for debate on this issue. In turn, this has led to a policy dialogue. In the past, this dialogue was almost completely absent or, at best, quite weak. In earlier years, there was no political or institutional will for such dialogue, and public debate remained clouded in the politically and emotionally charged debates.

The Government of FBH has recently taken some important steps toward rationalizing its existing non-insurance social protection cash transfer programs, with the announcement of the "Social Pact." The Pact essentially sets out a commitment by key stakeholders (including trade union representatives and employers) to push for reforms to rationalize the safety net in FBH on a number of different fronts, including improved targeting, fiscal restraints, improved benefit registries, oversight and controls, improvements to the Medical Examinations Institute (responsible for overseeing certification for disability benefits), and so forth. Quite unexpectedly, and under mounting fiscal pressure, the Parliament of FBH has, at the government's initiative, adopted amendments that significantly reform the area of the Non-War Invalids' Benefits program. Thus, the non-war invalids' program will dispense benefits only to invalids who are certified as being 90 percent and 100 percent disabled. This is in contrast to the previous practice whereby invalids whose disability ranged from 60 percent to 100 percent were all eligible for benefits. Moreover, if further amendments are adopted, the program would also cover congenital invalids of a lower percentage of disability until age 18 or, if in full-time education, until age 27. While the reform was heralded as quite substantial, it is estimated that it will be fiscally neutral in 2009 and, owing to the arrears that have been accumulated, the full effects will probably not be felt until 2010 or even 2011. For the purposes of this paper (and the proposed Bank project) the reforms in question are not material because: (a) the effects will be rather limited in the medium term, and (b) they do not represent a fundamental change in the official thinking but are merely a temporizing measure designed to reduce the government deficit for the time being.

Given this new "window of opportunity" for reforms—and increasing pressure to rationalize the safety net—the government has requested assistance in developing updated tools that could be used to improve the targeting of non-insurance social benefits. An improved targeting mechanism will help raise the issues above the politically expedient rights-based approach to a more neutral needs-based approach that enhances benefits for those who are socially and economically vulnerable. Using proxies to estimate the welfare of a household, such as the Proxy Means Testing (PMT) and Hybrid Means Testing (HMT) methods, is one way to improve the targeting mechanism. These methods have been proven to work particularly well in countries with a high level of informality and where personal and household income is difficult to verify.

To contribute to an ongoing debate in this area, this Policy Note simulates a PMT model using the latest microdata for BH—the 2007 Household Budget Survey (HBS)—and finds that the potential improvement over the current means-testing (MT) programs is substantial. This Note updates the scoring formula based on HBS 2004 done in June 2008. The PMT model predicted distribution with the HBS 2007 data remains as strong as was estimated with the 2004 data. The PMT model is comparable to, and by some measures an improvement over, previous BH-related PMT models. It also appears to be comparable to the performance of PMT models in other countries. Should the PMT scheme be implemented well, the empirical predictions suggest that a substantial improvement over the results achieved by means-tested programs in BH during 2001–07 is to be expected. Currently, the targeting accuracy, as measured by funds disbursed to

the poorest 20 percent of the population, of the BH MT programs such as the Child Protection Allowance and benefits awarded via the Centers for Social Work is around 25 percent, while the forecasted targeting efficiency—should PMT be used—is above 55 percent. In other words, implementing PMT for the two abovementioned sets of benefit schemes would double the efficiency with which the authorities can target the poor who are the most in need of these benefits.

Nevertheless, despite relatively good PMT simulation results, empirical simulations, similar to any analytic forecasts, have certain limitations as predictors of actual success of proposed reforms in this sphere. Above all, the biggest limitation is the fact that a great deal of success of any PMT program depends on how well the reforms are implemented on the ground (see Castaneda and Lindert 2003). On the technical estimation side, the limitations of the predictions include: (a) inadequate income data from the HBS, (b) lack of disaggregated social protection transfer information, and (c) lack of administratively feasible proxies in the HBS data. Furthermore, a comparison between MT, PMT, and HMT methods is not possible due to underreported income—that is, because we do not have correct information on income, we cannot say how well income does as a predictor of welfare.

Reforming safety nets is usually an iterative and ongoing process that takes place over a significant period of time. Initial measures could involve the development of technical tools (for example, targeting mechanisms) and legislative reforms to pave the way for implementing improved benefit targeting and benefit administration and management.

While there are ample technical opportunities for strengthening and reforming the safety net in BH (many of which are discussed in this report), the Entity Governments will need to strike a careful balance between fiscal pressures for reform (which are increasing under the global crisis) and political support for such measures. Such a balance will need to come into play in decisions about (a) which programs to target, (b) how narrow to target them (setting levels of thresholds that focus narrowly on the poor or more broadly on "lower-income groups," for example), and (c) how fast to proceed (bold, broad-sweeping, and fast reforms versus a more gradual approach).

A strategy for continued consultations and clear communication of the rationale and need for reforms will also need to accompany any technical strategy for improving the system to balance political support for reforms with the fiscal, efficiency, and equity objectives for overhauling the system.

SECTION 1:

AN ASSESSMENT OF EXISTING NON-INSURANCE SOCIAL PROTECTION TRANSFERS IN BOSNIA AND HERZEGOVINA

This section assesses existing non-insurance social protection cash transfers in Bosnia and Herzegovina (BH) with an overview of public spending on such transfers (very high), the composition of spending (biased toward rights-based transfers to the detriment of needs-based benefits), coverage and targeting accuracy (weak), and poverty impacts (negligible). It also notes that these high levels of spending on untargeted transfers likely crowd out resources for public investments—which will be increasingly needed to help stimulate the economy in the face of the global economic crisis. There is some evidence suggesting that they also dampen incentives for adult employment. The section concludes with recommendations for overhauling the system of social transfer benefits in BH.

1.1. OVERVIEW OF PUBLIC SPENDING ON NON-INSURANCE TRANSFERS IN BH

Bosnia and Herzegovina spends a significant share of its gross domestic product (GDP) on non-insurance social protection transfers. Public spending on transfers has averaged about 4 percent of GDP (Table 1.1). The BH economy grew by about 40 percent during 2002–08, as did expenditures on non-insurance social protection cash transfers. Since the overall spending on non-insurance social protection cash transfers has continuously grown during this period, it is reasonable to suppose (given its size) that this form of expenditure has tended to crowd out other forms of expenditure in BH. On the whole, while this form of public spending may have boosted somewhat the aggregate consumption of consumer goods and services over the period in question, it has done little to enhance the country's growth prospects, or, indeed, to reach many of the poor. The opportunity cost of spending a large proportion of GDP today on social transfers also implies foregoing greater competitiveness of the BH economy and higher-yielding opportunities for this capital—opportunities that could increase the overall wealth and welfare of BH citizens in years to come. Hence, spending 4 percent of today's GDP diverts the resources from investments that could produce greater GDP growth in the future. By devoting a significant proportion of its resources to consumption, BH society is, implicitly, putting a very low price on the wealth and welfare of the coming generations.

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Table 1.1: Expenditure on Non-insurance Social Protection Cash Transfers in BH, as Percent of GDP							
	2002	2003	2004	2005	2006	2007	2008
Civilian Benefits	0.9	1.0	1.0	0.8	1.5	1.4	1.4
Veterans' Benefits	3.1	3.0	2.8	2.6	2.6	2.6	2.5
Total as % of GDP	**4.0**	**4.0**	**3.8**	**3.4**	**4.1**	**3.9**	**3.9**
Note: Nominal BH GDP in million KM	13,736	14,505	15,786	16,928	19,106	21,641	22,831

Source: Central Bank of BH and World Bank staff estimates.

In fact, BH is among the highest spenders in the broader region (Figure 1.1). On average, countries in the Eastern Europe and Central Asia (ECA) region spend about 1.6 percent of GDP on non-contributory social protection transfers while, on average, Organisation for Economic Co-operation and Development (OECD) member states spend 2.5 percent of their respective GDP. With the exception of Croatia, Bosnia and Herzegovina outspends all countries in the region.

Figure 1.1. International Comparisons of Public Spending on Social Assistance

Source: Lindert and others (2008).

BH's high level of spending on non-insurance social protection transfers is fiscally unsustainable, particularly given the impending impacts of the global financial and economic crisis on public revenues. As a result of the global crisis, the country is likely to experience a contraction in remittances, exports, employment, and the availability of credit.

During 2008, the effects of the global financial and economic crisis were not immediately apparent in BH. However, it is now clear that the BH economy will feel the impact of the global crisis, the effects of which are likely to be transmitted through four main mechanisms: (a) a credit squeeze, (b) a fall in demand for BH exports and/or a fall in their prices, (c) a drop in the size of remittances from the BH diaspora, and (d) a reduction in bilateral donor assistance. The credit crunch and a substantial reduction in the growth of exports are already evident from the official statistics for the fourth quarter of 2008. While the impact of reduced remittances has not yet emerged, the size of remittances is likely to fall during 2009 and in subsequent years.

Like all other countries in Europe, BH is almost certain to experience a reduction in its rate of growth and, consequently, a fiscal contraction. In 2009, the rate of real GDP growth is likely be halved and the recovery is expected to be slow even after the eventual trough. On the one hand, unemployment is expected to rise as the private sector sheds jobs in the coming months. On the other hand, poverty is likely to be exacerbated further as job losses in other countries translate into reduced remittances for households in BH. Moreover, the authorities are likely to face a significant fall the size of their revenues as the expected slowdown of economic activity negatively affects tax collection, especially since the bulk of the BH public revenues come from indirect taxes, which are particularly vulnerable to falls in consumption. Furthermore, the continued liberalization of trade with the European Union (EU) will also put a dent in tax revenues.

The projected fall in revenues will render high spending non-insurance social protection transfers even more untenable. High levels of spending on transfers (4 percent of GDP) are unlikely to be sustainable and will continue to crowd out spending on investments (as discussed in more detail below), which are crucially needed to help stimulate the economy. At the same time, improving the efficiency and targeting of social benefits to those in real need would be a much more effective way to protect the vulnerable (and would create fiscal space for public investments) than scaling-up the existing programs. As such, the crisis will further create pressures for a rationalization of the social safety net (as discussed in more detail below).

1.2. COMPOSITION OF PUBLIC SPENDING ON TRANSFERS IN BH

For historical reasons, non-insurance social protection transfers in BH have been heavily dominated by measures designed to protect veterans and/or their surviving dependents. Veteran-related benefits in Republika Srpska (RS) absorb about three-quarters of total spending on non-contributory cash transfers (Figure 1.2), and this share has been fairly steady during 2005–09. In the same period, veteran-related benefits in FBH absorbed an average of 66 percent of spending on the abovementioned transfers (Figure 1.2), though this share has declined from 82 percent of the total in 2005 to 57 percent by 2009. Since 2006, FBH's overall spending on non-insurance social protection cash transfers was largely driven by the allocations made for demobilized soldiers and non-war invalids' benefits. The introduction of the benefits for demobilized soldiers and non-war invalids (in 2006) has produced exponential growth in both types of benefits with spending on civilian benefits rising almost threefold during 2006–08.

Figure 1.2: Composition of Spending on Non-insurance Cash Transfers: Average for 2005–09 (Percent of total)

Source: Entity budgets and World Bank staff estimates.

In both Entities, veterans and their survivors benefit from a plethora of legislatively mandated benefits (Figures 1.3 and 1.4), including:

- *Military Invalids' Benefit (Veterans):* Legislation gives the right to benefits on the basis of individuals' physical disability, regardless of their financial means and/or employment status. These benefits are rights-based (rather than needs-based).

- *Survivor Dependents' Benefit (Survivors):* Legislation gives the right to benefits on the basis of individuals' relationship status to the deceased person, who could be classified as a fallen soldier or deceased military invalid (veteran), regardless of their financial means and/or employment status. These benefits are rights-based (rather than needs-based).

- *Demobilized Soldiers' Allowance:* FBH legislation mandates the right to benefits on the basis of individuals' wartime involvement, regardless of their financial means. These benefits are rights-based, though dependent on formal unemployment status. This benefit is particular to FBH.

- *Medal Holders' Allowance:* Legislation mandates the right to benefits on the basis of individuals' receipt of the highest military decorations. These benefits are rights-based.

A detailed overview of the benefits and spending thereon is given in Annex B.

Figure 1.3: Veteran-related Benefits in FBH   **Figure 1.4: Veteran-related Benefits in RS**

FBH: Composition of Veterans-Related Benefits
(% of spending on Vets Benefits, Period average 2005-09)

RS: Composition of Veterans-Related Benefits
(% of spending on Vets Benefits, Period average, 2005-09)

Source: World Bank Benefit Survey. (Between January and April 2008, the World Bank mounted a survey of all public authorities' benefit programs in BH [Entity and sub-Entity], which yielded significant results. These results have been summarized in a table in Annex B. Updates to the original data were made in late 2008 and early 2009. World Bank Benefit Survey thus refers to this exercise.)

Both Entities operate a number of civilian benefits, though these receive relatively less funding than veteran-related benefits. Civilian benefits account for about one-third of total spending on non-insurance transfers in FBH and about one-quarter of such outlays in RS (Figure 1.2). Some civilian benefits—such as the Social Assistance Benefit Program and the Child Protection Allowance program, are means-tested. FBH also operates two types of disability benefits for non-war invalids and civilian victims of war, which are rights-based. Civilian benefits include:

> o *Social Assistance:* According to FBH legislation, it is up to Cantonal social protection laws to set the amounts and criteria for regular social assistance, while in RS, the legislation determines the amount based on family size and income. Eligibility for a permanent cash benefit may be awarded to a person with no other source of income, no family support network, and no ability to work. One-off social assistance is also provided on an as-needed basis to persons in temporary difficulty. Receipt of this benefit does not constitute an entitlement to regular benefits. These benefits are means-tested.

> o *Child Protection Allowance:* Legislation prescribes means-tested benefits in cash and in-kind for mother and child.

> o *Non-War Invalids' Benefit (NWI) – Disability Benefits:* FBH legislation gives the right to benefits on the basis of individuals' physical disability, regardless of their means and/or employment status. These benefits are rights-based and are particular to FBH.

> o *Civilian Victims of War (CVW):* FBH legislation gives the right to benefits on the basis of an individual's physical disability (or relationship status to the deceased person who could be classified as a CVW), regardless of their financial means

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and/or employment status. These benefits are rights-based and are particular to FBH.

The current composition of civilian beneficiaries is illustrated in Figure 1.5.

The composition of civilian benefits has evolved in favor of rights-based disability benefits in FBH. With the introduction of benefits for non-war invalids and civilian victims of war, the composition of civilian benefits has changed significantly over the past five years (Figure 1.6). Whereas in 2005, means-tested social assistance and child protection benefits dominated, by 2009, these accounted for only 15 percent and 17 percent of spending on civilian transfers. Disability benefits for non-war invalids increased substantially, accounting for over half of spending on civilian-related non-contributory transfers by 2009.

Owing to mounting fiscal pressure, the FBH Parliament has, at the government's initiative, adopted amendments that significantly reform the area of Non-War Invalids' Benefits program. Thus, the benefits program in question will cover only the 100 percent and 90 percent non-war invalids, as opposed to the 60 percent to 100 percent invalids, as previously. Moreover, if further amendments (discussed at the time) are adopted in the near future, the program would also cover congenital invalids of a lower percentage of disability until age 18 or, if in full-time education, until age 27. While the reform was heralded as quite substantial, it is estimated that it will be fiscally neutral in 2009 and, owing to the arrears that have been accumulated, the full effects will probably not be felt until 2010 or even 2011. Nevertheless, while they appear substantial on paper, the reforms in question are not material because: (a) the effects thereof will be rather limited in the medium term, and (b) they do not represent a parametric change in the official thinking but are merely a temporizing measure designed to reduce the government deficit for the time being. While this step is a far cry from the sequenced and measured approach advocated in this Note, the sheer fiscal necessity posed by the worsening fiscal situation in FBH has led to this dramatic action. Therefore, it is important that the authorities reform other benefit programs on time and before circumstances force them to adopt crude and socially unpopular reform measures that may still leave behind the most vulnerable members of society. Therefore, substantively, the reforms in question have altered neither the fiscal outlook nor the policy landscape in a meaningful manner.

Figure 1.5: Composition of Civilian Benefits

Figure 1.6: Changing Composition of Civilian Benefits in FBH

Source: World Bank Benefit Survey.

This shift in composition of benefits in FBH has also been accompanied by an expansion in the overall envelope for both veteran-related and civilian benefits. Broad trends discernible in Figures 1.7 and 1.8 indicate that, over the years, expenditures on non-contributory cash transfers grew at a faster rate in FBH than in RS.

Overall, there has been an increase in spending on rights-based benefits in FBH (Figure 1.8). Since 2006, FBH's overall spending on non-insurance social protection cash transfers was largely driven by the allocations made for demobilized soldiers and non-war invalids' benefits. The introduction of the benefits for demobilized soldiers and non-war invalids (in 2006) has produced exponential growth in both types of benefits with spending on civilian benefits rising almost threefold during 2006–08 and spending on veteran-related benefits nearly doubling in the same period. So far, RS has largely resisted pressure to introduce similar benefits, even though 2007 saw the introduction of a token annual benefit for demobilized soldiers whose cost at KM12 million per year (first budgeted in 2008) is manageable, even though policy implications thereof are a cause for potential future concern. Meanwhile, the amounts devoted to the military invalids' benefits, although they remain very high, have been stagnating somewhat in both FBH and RS.

Figure 1.7: Spending on Benefits is Fairly Steady in RS

Source: World Bank Benefit Survey.

Figure 1.8: Upsurge in Rights-based Benefits in FBH

Source: World Bank Benefit Survey.

Over time, the proliferation of right-based benefits has led to increased beneficiary numbers at the expense of means-based programs, especially in FBH. During 2002–06, the number of "persons not having sufficient income to support themselves" in BH has risen from 168,890 to 174,330 while the number of recipients of permanent social assistance has declined by 30 percent, from 19,779 to 13,819 (BHAS 2008). On the other hand, the same period has witnessed a near doubling in the number of "one-off" social assistance payments awarded. Bearing in mind that the maximums for most "one-off" social assistance payments are KM200 to KM250 and that these allowances cannot be claimed more than three times in a single calendar year, this is a very inefficient way of alleviating poverty, especially since "one-off" allowances are mostly dependent on the discretion of executive officeholders (for example, mayors) rather than an explicit, formal test of eligibility.

Right-based benefits have driven the overall increases in non-insurance social spending, especially in FBH. Thus, a notable trend has been the expansion of beneficiary numbers and resources devoted to the (right-based) non-war invalids' benefit in FBH. The open-ended nature of this benefit, its wide eligibility criteria, and the opportunities for double-dipping that it affords have resulted in the fivefold increase in the resource envelope devoted to this benefit—from KM30 million that was paid out in 2006 to nearly KM157 million that was budgeted for 2008.

Since the introduction of the NWI benefit in 2006, the number of beneficiaries has tripled. The authorities are struggling to process a backlog of some 100,000 applications, the slow processing of which is as much the result of their lack of administrative capacity as it is an attempt at fiscal restraint by indirect means. This would appear to indicate that, generally, the benefits in FBH have been a result of an organic growth process and based on the notions of right and reward rather than a demonstrable material need. As such, this has produced a vicious cycle that has resulted in either increases of the existing benefits or the introduction of new benefits—without any regard to the potential poverty alleviation impact of such schemes or even the overall fiscal balance.

Another example of how expansion in beneficiary numbers plays out in practice is the impact of the demobilized soldiers' benefit in FBH, introduced in October 2006. During 2004–06, prior to the introduction of this benefit, the number of unemployed demobilized soldiers registered with the Employment Bureaus had been around 60,000. As Figure 1.9 shows, the number of demobilized soldiers who are officially registered as unemployed has risen in the run-up to the passage of the relevant legislation and thereafter. Consequently, the Employment Bureaus have recorded a 46 percent increase in the number of people registered as unemployed demobilized soldiers between September 2006 and December 2007.

Figure 1.9: The Rise in Unemployed Demobilized Soldiers Following the Introduction of Benefits

Source: FBH Bureau of Employment.

Interestingly, the same law provided for social assistance benefits for those demobilized soldiers who were not eligible for a pension but were old enough (65 years of age) to be taken off the Employment Bureau rolls. The cash payment for this subcategory of the demobilized soldiers' benefit was subject to a means test. Information gathered through interviews with officials from the relevant authorities indicates that the take-up has been extremely poor, with fewer than 200 beneficiaries. Tentatively, this would suggest that even a simple means-test targeting applied to all potential claimants would have radically influenced the number of people eligible to claim this sort of benefit. As it is, the number of registered beneficiaries appears to be growing on a monthly basis.

1.3. PERFORMANCE OF SOCIAL SPENDING TRANSFERS: COVERAGE AND TARGETING ACCURACY AND THEIR IMPACT ON POVERTY

Household survey data allow for an independent analysis of patterns in the distribution of non-contributory transfers. The 2007 Household Budget Survey (HBS) provides a snapshot of the characteristics of the population through a representative sample at the country level (BH), as well as for each Entity. Data collection was conducted across the year, with 7,468 households divided into samples and interviewed at monthly intervals. Survey modules cover consumption, income, sociodemographic characteristics, and so forth. Fortunately, the 2007 HBS also included a fairly detailed module on receipt of benefits from social protection programs.[2] This allows for an independent analysis of the coverage, targeting accuracy and impacts of these programs. Typically, household survey data do a better job capturing the distribution of benefits across the population (quintiles) because such surveys present a representative sample according to key socioeconomic strata. They perform less well at capturing coverage of specific programs because

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[2] The module covers most programs, including a variety of contributory social insurance programs (various pensions) and a range of civilian and veterans non-contributory transfers (though two civilian benefits in the FBH were lumped together into a single category: NWI and CVW).

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they are not typically designed to be a representative sample of beneficiaries of specific programs.

Despite significant fiscal outlays (4 percent of GDP), coverage of non-contributory transfers is low. Overall, only 12.4 percent of the population reports receiving benefits from non-contributory social assistance transfers (civilian or veteran-related) in BH as a whole. The share reporting coverage of such benefits is slightly higher among the poorest quintile (15.1 percent) than the richest (9.7 percent). A much larger share of the population reports receiving social insurance benefits (40 percent), and about half the population reports receiving any type of benefits (contribution-based social insurance and/or non-contributory social transfers), as shown in Figure 1.10. As expected, coverage of veteran-related benefits is higher than civilian benefits, and coverage of veteran-related benefits is highest among the middle and upper quintiles than those in the poorest quintile.

Figure 1.10: Coverage of Social Protection and Social Assistance Benefits in BH, HBS 2007

Source: Authors' calculations using HBS 2007 data.

Targeting accuracy is fairly weak overall, with a higher share of benefits going to those in richer quintiles than poorer. Overall, the distribution of social protection benefits is regressive in BH. Those in the poorest quintile (representing 20 percent of the population) receive 16.9 percent of total social protection benefits (similar for social insurance and total social assistance benefits), as shown in Figure 1.11. The distribution of overall social assistance benefits is slightly progressive in RS, where those in the poorest quintile receive about 25.7 percent of non-contributory social benefits, compared to 14.1 percent for those in the poorest quintile in FBH. However, even this slightly progressive outcome is relatively weak compared to outcomes in many countries in the ECA region (Figure 1.12).

Figure 1.11: Regressive Distribution of Social Protection Benefits in BH

BiH: Targeting Accuracy of Social Protection Benefits
(Distributional Incidence; 2007 HBS)

Source: Authors' calculations using HBS 2007 data.

Figure 1.12: Targeting Accuracy of Social Assistance Benefits – International Comparison

Weak Targeting Accuracy of Social Assistance Benefits:
BiH, FBH, RS with International Comparison

Source: Nguyen and Lindert (2009) and authors' calculations using HBS 2007 data (for BH).

Within the sphere of non-contributory social benefits, veteran-related benefits are the most regressive, with 26.7 percent of veteran-related benefits reaching those in the richest quintile of the population, while those in the poorest quintile receive less than 15 percent of these benefits. Civilian child protection allowance (which is means-tested) and other benefits (SA+NWI+CVW) are somewhat better targeted overall, with 25 to 30 percent of such benefits going to the poorest quintile, respectively, though these outcomes are not very good compared with those in other countries (Figure 1.12).

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Means-tested benefits are better targeted in the Republika Srpska, where those in the poorest quintile receive 47.7 percent of CSW benefits and 35.4 percent of child protection allowances (Figure 1.13). This performance is reasonable by international standards for poverty-focused programs (Figure 1.14), though there is certainly room for improvement (some programs in ECA attain targeting accuracy outcomes of 70 to 80 percent—on a par with means-tested programs in the United States and Brazil).

Figure 1.13: Weak Targeting Accuracy of Specific Social Benefits Programs: FBH and RS

Source: Authors' calculations using HBS 2007 data.

Figure 1.14: International Comparison of Targeting Accuracy

Source: Lindert and others (2006); Nguyen and Lindert (2009).

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1.4. IMPACT OF BENEFITS ON POVERTY

With low coverage and weak targeting accuracy, it is not surprising that the poverty impacts of non-contributory social benefits are negligible. As discussed, the whole country spends, on average, about 4 percent of its GDP on non-contributory social benefits. However, coverage of the poor is low (about 15 percent of those in the bottom quintile report receiving veteran-related or civilian benefits) and benefits are generally regressive (those in the poorest quintile receive 18 percent of total non-contributory benefits in BH overall). Given those patterns, it is not surprising that poverty impacts are negligible. Indeed, HBS 2007 estimates the poverty headcount rate at about 18 percent of the population *with the transfers* counted in total consumption (incomes). *Without the transfers*, the poverty headcount would increase only slightly to 19.2 percent of the population. Therefore, transfers reduced poverty by only 1.2 percentage points, or 6 percent. When this poverty-related impact of the non-insurance cash transfers is compared to the poverty-related impact of insurance-based benefits (pensions) there is a stark contrast: without pensions, poverty would increase to 25.8 percent of the population.

1.5. OPPORTUNITY COST OF SOCIAL SPENDING: CROWDING OUT OF PUBLIC INVESTMENTS

Public expenditures on non-insurance social assistance benefits absorb a large share of the Entities' respective annual budgets. When the public expenditures on non-insurance social protection cash transfers are expressed as a proportion of the Entities' respective annual budgets, the staggering proportion of resources that authorities in FBH devote to these transfers is revealed (see Table 1.2). Such transfers absorb 41 percent of total budgetary spending in the FBH, compared with 14 percent in RS. Hence, it would appear that non-insurance social protection cash transfers currently account for some 19 percent of FBH's consolidated expenditures and 7 percent of RS's.

Table 1.2: Spending on Non-Contributory Social Assistance Cash Transfers in BH as Percent of Budgets						
	2002	2003	2004	2005	2006	2007
Federation of BH	35.1	35.3	36.6	42.9	39.0	41.0
Republika Srpska	13.6	13.7	14.7	15.8	13.9	13.9

Source: Official budgets and World Bank staff estimates.

This high level of spending requires a high level of revenue collection. On the revenue-gathering side, the authorities are burdening the private sector and individuals with high taxes thereby reducing the scope for private investment and job creation. Consequently, tax burdens (particularly in FBH) have remained stubbornly high in relation to OECD/EU-8 averages.[3] For instance, during 2004–07, the size of overall BH public revenues collected on the basis of direct taxes and social contributions rose by 0.1 percent and 0.3 percent of GDP, respectively,

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[3] World Bank's BH Fiscal Update.

while the introduction of the value-added tax (VAT) in 2006 resulted in a 4.2 percent year-over-year, rise.[4]

High spending on benefits has the effect of crowding out resources that could be devoted to public investments. On the expenditure side, public investment represents only 6 percent of the country's GDP, which means that the prospects for economic growth and job creation are limited. Public investment as a percentage of GDP is even lower in FBH—far lower than other countries in the region (Figure 1.15). Though it is difficult to put this expenditure in a contrasting counterfactual scenario, a greater proportion of public expenditures devoted to investments and capital goods would have had the potential to stimulate the country's economic growth.

Figure 1.15: Public Investments as a Percentage of Total Public Expenditures (2006

Source: World Bank BH Fiscal Update 2008.

The combination of high public outlays on regressive social transfers with low public investments puts BH in a particularly difficult situation with the onset of the global economic and financial crisis. Given that BH has a high current account deficit and, given its orthodox fixed-exchange rate regime, there are few macroeconomic policy options at its disposal to deal with economic downturns. In the face of economic contraction, targeted social transfers are needed to help protect the poor from the adverse effects of the crisis, and public investments are needed to stimulate economic activity and jobs. With the current allocation of public spending, BH will find itself handicapped for both of these crisis responses. Moreover, there is a risk that the authorities will be burdened with a set of claims and entitlements for (untargeted) social assistance benefits that would, if unchecked, absorb an even greater proportion of the (reduced) GDP as the economy contracts. This would leave authorities little room to maneuver to implement investment programs and other measures that would help the economy exit from any recession sooner.

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[4] Ibid.

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1.6. HIDDEN COSTS OF UNTARGETED BENEFITS – LABOR MARKET IMPLICATIONS

There is some evidence that untargeted benefit schemes in BH also produce disincentives and distortions in the labor markets. It is estimated that 57 percent of people capable of work in BH are economically inactive—some 1.5 million—in addition to those who are registered as unemployed, or, some 500,000 people as of December 2007.[5] This state of affairs cannot be the sole consequence of untargeted benefits, which are not generous enough to produce unemployment and economic inactivity by themselves.

In the "grey" economy, workers are frequently willing to work for low wages if remittances and untargeted social protection benefits supplement their generally unstable or insufficient earnings. In this way, both employers and employees profit jointly thanks to untargeted social benefit transfers—with the real losers being those who need to depend on social assistance payments as their sole source of income.

At present, one-quarter of all registered unemployed in FBH appear to be demobilized soldiers—as shown by the data presented in Table 1.3. Moreover, the veteran benefits system in BH extends to include beneficiaries of 20 to 40 percent disability range who are capable of working. Indeed, the system is dominated by this category of beneficiaries—as illustrated in Figure 1.16. For instance, in August 2007, in FBH, there were 26,155 such beneficiaries on the rolls (one-half of all disabled veterans' benefit claimants), accounting for KM1.5 million of the total monthly expenditures on disabled veterans' benefits that month.

Table 1.3: Demobilized Soldiers as Percent of Total Number of Unemployed in FBH, 2002–08						
2002	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
22.7	20.5	18.9	17.4	17.6	23.8	24.5

Source: FBH Employment Bureau.

Judging from the figures available, in August 2007, total payments to lower-category disabled veterans and the unemployed demobilized soldiers totaled KM14.5 million. It is worth noting that the two types of beneficiaries in question were, technically, capable of productive employment. Figure 1.16 illustrates what this meant in terms of the size of the individual benefits paid out and how they compare with the social assistance benefits paid out to civilians who are unable to work.

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[5] As indicated from the data released by the Employment Bureaus of FBH and RS.

Figure 1.16: Veterans Beneficiaries, by Disability Category

Source: WB Benefit Survey.

The right-based survivor dependents' benefits are available to spouses, children, parents, and grandparents of killed soldiers, according to defined conditions, which have nothing to do with employment status. In both RS and FBH, more than half of the beneficiaries under the veterans' protection system are members of the families of killed soldiers, and this constitutes a survivor family assistance scheme as much as it is an aid to disabled veterans. Moreover, the recent changes to the FBH legislation have awarded the survivor benefit rights even to widows who are younger than 45 years of age, thus providing further disincentives to employment and formal economic activity.

SECTION 2:

IMPROVED TARGETING OF SOCIAL ASSISTANCE BENEFITS:
PROXY-MEANS-TESTING MECHANISM BASED ON THE 2007 HBS SURVEY

This section develops a variety of technical tools that could further contribute to the debate regarding possible ways to improve the targeting of non-insurance benefits in Bosnia and Herzegovina (BH). It calibrates a new proxy-means-testing (PMT) model for BH using the 2007 Household Budget Survey (HBS). The results indicate that the PMT model is comparable to, and by some measures an improvement over, previous BH PMT models. It represents a substantial improvement over the present means-tested programs operated in BH in 2007. Currently, the targeting efficiency, as measured by the share of recipients who are in the bottom quintile of the population of the BH means-testing (MT) programs, is around 30 percent, while the forecasted targeting efficiency of the PMT model is above 55 percent. It also appears to be comparable to the performance of PMT models in other countries.

This update of the BH scoring formula includes a larger number of sensitivity tests. The tests checked the accuracy of the model across different specifications of the regression and for each domain (region) where HBS 2007 is representative. The parameters of any PMT model change over time, and countries revise the PMT weights after some years (as is done in Armenia and Chile, for example). Above all, the targeting accuracy of any program implemented in BH will depend not only on the design, but also on the quality of implementation.

2.1. RATIONALE FOR TARGETING AND OVERVIEW OF TARGETING INSTRUMENTS

A. Why Target? Targeting is a means of increasing program efficiency by increasing the benefit that the poor can receive within a fixed program budget. The motivation for targeting arises from three policy considerations: (a) *objectives* of reducing poverty and protecting the poor; (b) *limited resources* (budget constraints); and (c) *opportunity costs*, or tradeoffs between the number of beneficiaries and the level of transfers (Coady, Grosh, and Hoddinott 2004). Simply put, the rationale for targeting involves concentrating scarce resources on those who need them most.

B. Whom to Target? Whom to target is generally determined by need, that is, economic status (poverty, risks of poverty), but it can also relate to other aspects associated with vulnerability such as age (elderly, children), ethnicity (historically excluded groups of the population), or disability. Policy choices policymakers make in determining whom to target based on measures of need include the following:

- **Narrow vs. broader targeting.** In many countries, targeting based on "need" focuses social assistance resources on a rather narrow definition of "the poor" (as in Brazil, Mexico, and the United States), with higher benefits for the extreme poor and a gradual reduction in benefits as incomes rise. There is some evidence that the political economy of targeting in those countries favors such narrow targeting. In Brazil, for example, evidence suggests that politicians are penalized for perceived "leakages" of benefits to the non-poor and have a higher likelihood of reelection with "stronger" targeting of the poor (de Janvry and others 2006; Lindert and others 2007; Lindert 2008). In other countries, programs are targeted to a broader definition of "lower-income groups," possibly in part to bring in a broader political basis for support. Ultimately, the decision of what "threshold" to set for eligibility depends on a combination of fiscal and political economy considerations that are specific to each country. Regardless of the level at which such eligibility thresholds are set, however, the tools used for screening for eligibility (means tests, proxy means tests, hybrid means tests) and for managing benefits (unique registry system) should be standard, common, and transparent for all applicants.

- **Chronic vs. transient poor.** Another aspect of "whom to target" involves whether to target the chronic or transient poor. This depends partly on the objectives of the particular safety net program, but is also particularly relevant in times of crisis. Fiscal constraints mean that not all can be served as much as needed, giving rise to competing pressures. The logic of a crisis response program is to address the income losses caused by the crisis. However, while the newly poor are often politically vocal, they are not necessarily the poorest (Grosh and others 2009). The chronically poor are likely to become poorer as a result of the crisis and may be most at risk of suffering irreversible losses. These choices of target group also affect the type of targeting mechanism adopted, with "proxy-means testing" more appropriate for depicting chronic poverty, but less sensitive to changes in economic status (for example, crises).

C. How to Target? A number of mechanisms exist for channeling resources to a particular target group. Some require some sort of assessment of eligibility for each applicant (individuals or families). Others grant eligibility to broad categories of people based on single characteristics such as geographic location (geographic targeting) or demographic category. Needs-based targeting (where the target group is "the poor") generally adopts applicant screening methods (for individuals or families), but sometimes also combines these with geographic targeting. This review focuses on needs-based targeting via applicant screening methods (for individuals or families). An important aspect of targeting is the need to design program parameters (benefit levels, entry and exit criteria, and so forth) such that they avoid creating opportunities for "masquerading" or changing behaviors to become eligible for benefits or incentives for reducing adult work effort.

There are several methods for screening applicants (individuals or families) for eligibility, including: (a) means-testing (MT), (b) proxy means-testing (PMT), and (c) hybrid means-testing (HMT). The choice among methods generally depends on administrative capacities, degree of formality or "measurability" of incomes, and variation in other observable characteristics associated with "need." Table 2.1 provides an overview of these measures, the types of data that are collected, and their respective advantages and disadvantages, based on international practice.

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Currently, BH uses income and asset tests (means-testing, MT) to determine eligibility for the child allowances and social assistance program. Usually, countries with a large formal sector use verified income and asset-tested programs (VMT). This targeting method is found in most Organisation for Economic Co-operation and Development (OECD) countries, with notable examples in Australia, France, the U.K., and the United States. The success of the means-tested programs depends on extensive verification of information, which covers two aspects: (a) the identity of the applicant and family/household composition, and (b) the income and assets of the assistance unit. The information submitted by applicants is verified based on documentary evidence (the applicant presents documents and invoices), and via automated computer matches.

At the other extreme, countries with a large informal sector use indirect methods of estimating welfare, especially based on a proxy means test (PMT). PMT-based programs determine eligibility based on a multidimensional index of observable characteristics highly correlated with the welfare (consumption, income) of the household. Typically, these include information about location, housing quality, possession of assets/durables, education, occupation and income of the adults, and a variety of others (disability, health, and so forth). The variables are aggregated into a composite score (index) using weights determined using a regression model. Eligibility is determined by comparing the score of each household with an eligibility threshold. First developed in Chile, then used extensively in much of Latin America, PMT programs are now spreading to other parts of the world, such as Armenia, Georgia, Indonesia, the Philippines, and Turkey.

Between these two extremes, there are intermediate solutions that combine the elements of means-tested and PMT programs. We call this intermediate targeting method a hybrid means test (HMT). Under the HMT model, programs assess the welfare of the applicant based on a per capita income indicator that is the sum of verifiable income (from wages and social protection transfers) and the estimated unverifiable income. This model is being developed in some transition economies, notable examples of which are Bulgaria, Kyrgyzstan, and Romania.

Targeting those "in need" involves not only an assessment of "means" (incomes, proxies, imputed incomes) but also a "threshold" cutoff to distinguish between those who are eligible and those who are not. Such a threshold can be determined empirically—for example, a poverty line estimated using costs of basic food and non-food consumption. Or it can be determined more broadly to allow for inclusion of the near-poor (vulnerable) or lower-middle-income groups, depending on the objectives of the program and the political calculus for acceptability of the reforms/program. Regardless of the level of the threshold for eligibility, the "tools for targeting" should be standard, common, and transparent for all—namely, a consistent measure for estimating "means" (HMT, PMT) and a single registry of applicants.

E. Implementation Matters. Finally, in developing a targeting system, implementation matters. Beyond eligibility criteria and estimates of "need," programs need to be supported by adequate administrative capacity at all levels, registry, and information technology (IT) systems, oversight and controls mechanisms, clear institutional roles, and so forth. These are crucial inputs to strengthening the safety net in Bosnia, though the remainder of this Note focuses on the design aspects.

Table 2.1: A Spectrum of Targeting Instruments Based on Individual Assessment

	Data	Eligibility Criteria	Advantages/Disadvantages
Means-testing (MT)	• Self-reported income and assets collected through interviews. • Verified with certification, public information, cross-checks.	• Income < Threshold Income Cutoff Level. • Sometimes establish a higher cutoff level for program "exit."	• ADV: Can be very accurate (especially with verification); also, more responsive to transient changes (e.g., in crisis). • DISADV: Administratively demanding; challenging with informality; potential for work disincentives.
Proxy Means-testing (PMT)	• Alternative indicators of living standards. • Develop models usually with Household Surveys to identify indicators that are correlated with poverty + scoring formula. • Collect data on indicators through interviews and (usually) home visits.	• Score = $\acute{a}$ + βX + βX + βX. • Predicted values can establish weights and eligibility cutoffs (thresholds).	• ADV: Useful in situations with high degrees of informality; less potential for work disincentives; allows capturing multidimensional aspects of poverty (not just income poverty). • DISADV: Administratively demanding; eligibility criteria may need to change regularly as people learn to "game" the system; does not capture changes quickly (less responsive in crisis).

Hybrid Means-testing (HMT)	• Combination of the methods above.	• Predict incomes using:
		  o Easily measured income
		  o Imputed incomes (using proxies or other imputation methods)
		  o And/or use proxies to validate or cross-check data on reported incomes.
		• Estimated/predicted income < Threshold Cutoff Level.
			• ADV: Can be very accurate; optimizes use of information; possible with informality; fewer work disincentives; objective/verifiable; responsive to changes (e.g., in times of crisis).
			• DISADV: Administratively demanding.

Source: Lindert (2008).

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2.2. HOUSEHOLD SURVEY DATA USED TO DEVELOP TARGETING TOOLS

A. The Household Budget Survey (HBS). We use data from the 2007 HBS to develop options for tools that could be used to target social safety net programs in BH. For the foreseeable future, only HBSs—not Living Standards Measurement Surveys (LSMSs)—are likely to be conducted. A new round of an expanded HBS/Survey of Income and Living Conditions (SILC)-light is planned to be conducted in 2010. It is therefore important to continue updating the baseline PMT model based on the HBS, subject to further verification and improvement as data from future rounds of the HBS are made available. In addition, in its current form, the HBS is a rich source of information on both household consumption patterns and the demographic and socioeconomic characteristics of members of the household, physical characteristics of dwellings, and ownership of durables (see Annex C for more information). The availability of information on these variables makes the HBS a suitable database for calibrating a PMT model.

B. Shortcomings of the HBS data for PMT/HMT Simulations. The first shortcoming of the HBS is that, in its current form, it is unable to provide information on a number of indicators on "non-monetary" measures of living standards. Unlike the LSMS, the HBS does not have detailed modules on, for example, access to education or health services, agricultural activities, or labor market activities. The current HBS-based model is therefore unable to capture certain information that was used in previous models on agricultural activities, unlike the Bosnia PMT models of Braithwaite (2003) and CEPOS (2006) or the PMT models in Russia (World Bank 2007), or war-related variables, such as Bisogno and Chong (2001) and Braithwaite (2003) (for a review of previous models, see Annex C).

Second, the 2007 HBS resolves only some of the 2004 HBS's lack of disaggregated information on social assistance benefits received. For instance, two growing non-insurance and non-income-tested programs, NWI and CVW, are lumped together under one category—Center for Social Works (CSW) benefits—in the HBS questionnaire (see Annex F for the actual social protection module used in the HBS questionnaire). In 2004, the income module only asked survey respondents whether they receive "other fees and additions," including unemployment benefits, disability benefits, social and humanitarian benefits, and others. We are now able to better assess the targeting performance of the social assistance system and then compare it with PMT simulations. The 2007 HBS also has an improved capability to monitor living standards, including revisions to the reference periods associated with expenditures on selected goods (including utility expenditures) and an updating of the sampling frame.

Third, the income data in the HBS is severely underestimated, which prevents us from simulating an HMT model using the 2007 HBS data. In order to calibrate an HMT model and predict whether income is a good proxy of consumption, the household survey data should have high-quality income data. The quality of income data, generally a difficult variable to collect in household surveys, is a function of, first, the level of informality in the economy, and second, how the income question was asked. In BH, the level of

informality in the economy is high. In addition, the HBS questionnaire is not detailed enough to capture self-employed and agricultural incomes.

2.3. EMPIRICAL FRAMEWORK FOR THE PMT AND HMT ESTIMATION

This section presents the results of simulating a PMT model, which predicts the consumption of each household based on a limited number of variables, and explains why an HMT model cannot be calibrated with the HBS due to the underreporting of income in the data. These tools build on four previous documented efforts to calibrate proxy-means-testing (PMT) models for BH (see Annex C for more information).

A. New PMT Model Using the HBS 2007

This section calibrates a new PMT model or scoring formula for Bosnia and Herzegovina (HB). It draws on the 2007 Household Budget Survey (HBS) and builds on previous efforts to design a PMT model, including the World Bank 2004 PMT estimation. Means-tested and hybrid-means-tested models are not calibrated based on the HBS data set because of the weak income data.

Following the literature, the choice of explanatory variables for PMTs (and the imputed proxy aspects of HMTs) is guided by its statistical association with per capita consumption and its verifiability (that it, that it can be potentially cross-checked against other sources of information, or may be physically inspected or verified by a social worker, or that households are arguably less able or less likely to provide misleading or false information). The exercise starts from a large set of variables, which are then reduced to a much smaller subset using stepwise estimation techniques, that is, a subset of variables selected on the strength of their statistical association with per capita consumption and that together these variables maximize the fitness of the PMT model.

Our variables can be broadly classified under one of the following categories:

- **Household demographic and socioeconomic characteristics,** such as the number of members, their ages, the number of dependents, gender of the head of household, and the educational attainment of household members. It also includes labor market activities, such as the employment status, occupation, and sector of employment of the head of household, the number of employed members of the household, and the occupational status of the spouse. Of these characteristics, labor market activities may be the most difficult to verify, given the existence of a large informal sector.

- **Housing characteristics,** such as the availability of certain facilities (water, sanitation system, phones, and so forth), the types of appliances used, the manner by which heat is supplied, the year the dwelling was constructed, the number of rooms, construction type (multifamily, individual, other), whether owned or rented, and so forth.

- **Ownership of selected durable goods,** such as ownership of vehicles, telecommunications equipment, or selected appliances. This can be potentially assessed against administrative data, such as data on vehicle registration, or by visual inspection.

- **Location,** such as a household's entity of residence or whether the household lives in a rural or urban area.

- **The affordability of selected expenditures,** such as utility (water, heat, electricity, gas) expenditures, which in principle can be verified by the respective utility company.

- **Selected income sources,** such as whether the household receives pension income. Pension receipt and/or the level of pension income should be easily verifiable with the administrative records of the Pension Fund.

B. A Note on HMT and Income Data Quality

To calibrate an HMT (a mix of proxy- and income-tested eligibility) model, we need two conditions for the survey data: (a) income and consumption are highly correlated; and (b) income is not severely underestimated. These conditions are necessary to make the argument that income is a good approximation of the true welfare of the households (which is the theoretical concept of "permanent income," best approximated by consumption). In Ukraine, for instance, it was found that these conditions hold (Tesliuc and others 2009). In BH and Russia, on the other hand, this is not the case. In HBS 2007, income levels are one-third of the corresponding consumption levels (see Annex D).

First, we have done a number of tests to assess whether the quality of the income and consumption data collected in HBS is adequate. Income data, unfortunately, seem heavily underreported (Figure 2.1 and Annex D). Income is generally a difficult variable to collect in household surveys, but in BH there are several reasons why income might be underreported: (a) the income question on informal and self-employed income is not detailed enough, and experimental evidence from other countries has shown that less-detailed questions lead to underreporting compared to more-detailed questions. The question posed to survey respondents is only, "Do you have income from own company, craft, agricultural holdings, or freelance (employers and self-employees)"; (b) an agricultural income module is lacking; and (c) the recall period for income and consumption are different. Income uses annual recall while consumption uses biweekly recall; thus, when comparing the two, income will tend to have more of a downward bias than consumption.

Figure 2.1: Household Monthly Per Capita Income and Consumption over Quantiles of Income Distribution

A. Entire Population	B. Households with Hard-to-verify Income Share of Less than 20 Percent

Source: Authors' calculations using the 2007 HBS data.

Second, we use the HBS data to estimate the share of verifiable and unverifiable income (Figure 2.2). *Verifiable income* considers (a) salaries and benefits of public sector employees or employees on a permanent contract, (b) all public transfers except pensions from abroad, and (c) savings and rent of business premises. *Hard-to-verify income* includes salaries and benefits of all those not on a permanent contract or in the public sector, salaries paid by foreign employers (even though the sector is highly formalized, access to information is not readily available), and all rents and interests except savings and business premises.

Data from the HBS 2007 indicate that a slightly larger share of the incomes earned in urban areas can be verified, such as wages and social protection transfers (Figure 2.2). In rural areas, however, unverifiable income dominates. The share of unverifiable income does not decrease with higher welfare status, suggesting that income-based programs will be subject to errors.

Hybrid means-testing models combine information on <u>both</u> (a) verifiable income, and (b) proxy indicators that are incorporated into a prediction model to estimate the share of incomes that are hard to measure. Thus, because of the heavily underreported income data, we cannot use the HBS to simulate an HMT program for BH. In addition, the high level of hard-to-verify income suggests that income-based programs might run into difficulties, as is the case for the current FBH programs.

Figure 2.2: Composition of Household Income Over the Distribution of Welfare

| A. Entire Population | B. Urban Areas | C. Rural Areas |

Source: Authors' calculations using 2007 HBS data.

2.4. RESULTS: PROXY-MEANS-TEST MODEL USING THE 2007 HBS

A. Baseline PMT Model

Annex F Table AF.1 presents the results of the stepwise regression analysis. The final model consists of 25 variables, derived from an initial set of about 50 variables. For the dummy variables representing the entity of residence, the omitted category is Brcko.[6] The indicators of heating source are in relation to "other" sources of heat. Every variable is significant at the 1 percent level. A positive coefficient indicates that a household or dwelling characteristic is associated with higher per capita consumption; a negative coefficient, conversely, indicates that a characteristic is associated with lower per capita consumption.

The signs of the coefficients make intuitive sense or are consistent with existing analyses of poverty in BH, though the PMT model should not be interpreted in any causal sense.[7] For example, the 2003 Poverty Assessment and the 2005 Poverty Update suggested that poverty is lower (and thus per capita consumption is higher) among female-headed households[8] and among those with relatively more educated heads of households and that

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[6] Brcko District is an autonomous region, which, though part of the country, is separate from the two Entities that comprise BH.

[7] The coefficient estimates of the PMT model should not be interpreted in any *causal* sense, that is, that possessing a certain characteristic *leads* to higher poverty. Nor should we expect that the coefficients estimates and their signs would be necessarily consistent with our prior expectations, given the likelihood of co-linearity or the strong statistical association between independent variables. A coefficient estimate with an unexpected sign (for example, car ownership associated with *lower* predicted per capita consumption) may, in fact, serve a useful practical purpose. That is, it can be an important deterrent against any attempt to provide false information to the scoring formula or to the system.

[8] This phenomenon runs counter to the experience of other countries and is not well understood, even in BH, based on our consultations with our counterparts. Nonetheless, this statistical pattern holds up across various BH household surveys: the 2001 LSMS, the 2004 LSMS, and the 2004 HBS. They are also consistent with some recently published analysis of gender and poverty in BH (Smajic and Ermacora 2007).

poverty rises with the number of household members. These patterns are confirmed by the regression results in Annex F Table AF.1. In addition, the ownership of selected durable goods (cars, appliances, and so forth) is, as expected, positively associated with per capita consumption. Housing characteristics also have the expected signs: the use of firewood and coal stoves, typically associated with poorer families in remote areas, is negatively associated with per capita consumption.

The R^2 of the baseline model is equal to [0.488], compared with the [0.496] of the 2004 model.[9] This measure of the model's goodness-of-fit is an improvement over previous BH PMT models. The model in Braithwaite (2003), for example, yielded an $R^2 = 0.35$, while Bisogno and Chong (2001) obtained an $R^2 = 0.32$ in their best model.[10] This is also broadly comparable to or higher than the R^2 in the older PMT literature covering other countries. For example, the models for Latin American countries in Grosh and Baker (1995) yielded R^2 values up to, at best, 0.41; Grosh and Glinskaya (1997) obtained $R^2 = 0.2$ in Armenia; and the final model for Egypt in Ahmed and Bouis (2002) yielded $R^2 = 0.43$.

However, the baseline PMT model for BH does not perform as well as a few recent PMT models calibrated in some countries in the ECA and in other regions. For example, the PMT model for the Targeted Social Assistance program in Georgia had an $R^2 = 0.62$. The one calibrated for the Republic of Kalmykia in the Russian Federation has an $R^2 = 0.59$. Similarly, the PMT models considered in Sri Lanka obtained R^2 values up to 0.59 (Narayan and Yoshida 2005).

Figure 2.3 plots the actual per capita consumption values against those predicted by the baseline PMT model for 2004 and 2007 models.

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[9] In statistics, the coefficient of determination, R^2, is used in the context of statistical models whose main purpose is the prediction of future outcomes on the basis of other related information. It is the proportion of variability in a data set that is accounted for by the statistical model. It provides a measure of how well future outcomes are likely to be predicted by the model. In regression, the R^2 coefficient of determination is a statistical measure of how well the regression line approximates the real data points. An R^2 of 1.0 indicates that the regression line perfectly fits the data.

[10] The R^2 in CEPOS (2006) is not reported.

Figure 2.3: Baseline PMT Model – Actual and Predicted Values

A. 2004 Estimates

B. 2007 Estimates

Source: Authors' calculations using the 2004 and 2007 HBS data.

B. Some Sensitivity Tests for PMT

Using the poorest half of the population. Following the PMT literature such as Braithwaite, Grootaert, and Milanovic (1999) and Grosh and Baker (1995), one could argue that using only the poorest half of the population may be a better basis for calibrating a targeting model. The literature argues that this is far more realistic than making use of the full population, since members of the upper class and upper-middle class are not likely to bother to participate in social assistance programs. In practice, then, the proxy means test will likely apply only to those near the lower end of the welfare distribution. Following this line of argument in this section, we calibrate the baseline PMT model using only the poorest 50 percent and the poorest 40 percent of the population, respectively.

The new regression results are in the fourth and fifth columns of Annex F Table AF.1. The associated errors of inclusion and exclusion are also the second and third columns of Table 2.4.

Calibrating a more parsimonious PMT model. The baseline PMT model follows the standard structure of existing PMT models, that is, it uses information on household and housing characteristics. However, as previously suggested, some characteristics lend themselves more conveniently to inspection or verification than others. Employment status is, for example, difficult to verify in an environment where a large informal sector exists. What happens if we exclude this variable from the baseline model? The results suggest that the predictive power diminishes only slightly; the R^2 drops from 0.49 to 0.46. The errors of exclusion and inclusion are broadly similar to the baseline model.

Urban/rural variations. One could also assess how well the baseline PMT model performs across geographic boundaries. The urban area PMT model yields an $R^2 = 0.458$ while a rural area PMT model produces $R^2 = 0.46$ (Annex Table AF.3). These are associated with errors of exclusion of 79 percent and 57 percent, respectively, and errors

of inclusion of 2 percent and 6 percent, respectively. Thus, the urban model is relatively better able to predict the non-poor, but the rural model is relatively better at identifying the poor, similarly to the 2004 estimates.

Entity-level models. Considering the vastly differing results in program performance between the entities, we calibrate a PMT model for FBH and RS separately as a sensitivity check. The estimated regression for each entity remains basically unchanged from the national model without gaining any further precision (Annex F Table AF.2). The R^2 stays at .5 for each entity. The current programs' distribution of beneficiaries (percent of beneficiaries who constitute the poorest 20 percent of the population) in the RS is 39.4 percent for child protection and 46 percent for all other social assistance, and in the FBH it is 20.8 percent and 31 percent, respectively. Under the simulated PMT for each entity, the predicted distribution of beneficiaries is 57 percent and 54.31 percent[11] in FBH and RS, respectively, which is the same level as the predicted performance of the national model of 55.4 percent.

C. How well does the simulated PMT identify the poor?

A further test of our baseline PMT model is to see how well it predicts the poor and non-poor using the variables listed in Annex F, Table AF.1. For the purposes of this simulation, we identify the poor as those with monthly consumption per capita less than KM385.69 (the relative poverty line used by the Bosnia and Herzegovina Agency for Statistics [BHAS] in their 2007 poverty profile). Using actual monthly per capita consumption, data from the 2007 HBS indicate that the poverty headcount is about 18 percent and that there is essentially no extreme poverty (0.6 percent of the population).

In this section, we compare actual consumption per capita—and actual poverty status—with the predicted consumption per capita—and predicted poverty status—to see how well the baseline PMT model performs in identifying the poor and non-poor. The results are in Table 2.2, under the first column.

The results suggest that the baseline model correctly predicts 39.1 percent of the poor and 95.3 percent of the non-poor. This implies that the (a) error of exclusion—the percent of poor predicted as non-poor—and (b) the error of inclusion—the percent of non-poor predicted as poor—are 61 percent and 4.7 percent, respectively. In other words, the model performs very well in identifying the non-poor. It does not perform as well in identifying the poor, but is comparable in this respect to previous PMT models for Bosnia (Braithwaite 2003) or models calibrated for other countries (see, for example, Braithwaite, Grootaert, and Milanovic (1999) on baseline PMT models for Bulgaria, Hungary, and Poland, which correctly identified only 47, 13, and 17 percent of the poor, respectively). It is also comparable to the 2004 HBS estimates.

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[11] Percent of predicted recipients that are in the bottom 20th percentile of the Entities' distributions.

Table 2.2: PMT Errors of Inclusion and Exclusion

PMT Model	2004			2007		
	Baseline Using all HHS	Using Poorest 50%[a]	Using Poorest 40%[a]	Baseline Using all HHS	Using Poorest 50%[a]	Using Poorest 40%[a]
Percent correctly identified						
Poor identified as poor	41.0	56.4	71.6	39.1	59.9	73.6
Non-poor indentified as non-poor	94.5	90.0	82.4	95.3	88.2	79.5
Percent incorrectly indentified						
Poor identified as non-poor (error of exclusion)	59.0	43.6	28.5	60.9	40.1	26.4
Non-poor identified as poor (error of inclusion)	5.5	10.0	17.6	4.7	11.8	20.5

a. Using full sample predictions.
Source: HBS 2004, 2007; and authors' calculations. Weighted observations.

When the model is calibrated only on the poorest 50 percent or 40 percent of the population, its ability to predict the poor correctly is now substantially higher—the percent of poor correctly predicted as such rises to 59.9 (better performance than for 2004) when using the poorest half of the population and to over 70 percent when only the poorest 40 percent is considered. Because policymakers are likely more interested in reducing errors of exclusion, targeting only those at the bottom of the welfare distribution represents an improvement in our PMT model's performance. However, the errors of inclusion also rise as a result. When only the bottom 40 percent is considered, the percent of the non-poor correctly predicted falls from 95.3 percent to a little over 88.2 percent.

One drawback of the comparisons based on inclusion and exclusion errors is that they are sensitive to the coverage of the program. In general, the smaller the program, the higher the errors of exclusion and the lower the errors of inclusion, all else being held equal. One way to avoid such fallacies of composition is to present information about the coverage and the incidence of beneficiaries for a program of a given size by decile, as in Table 2.3. Given a total poverty rate of 18 percent, we present the simulated distribution of beneficiaries and the coverage for a program that targets the poorest 20 percent (quintile) of the population, using the three PMT and HMT models calibrated earlier. This is done by considering only the lowest 20 percent of the predicted values for consumption or income (the scores) by each model.

Figure 2.4: Incidence and Distribution of Inclusion Errors of Each Model

Source: Authors' calculations using 2007 HBS.

The distribution of simulated beneficiaries is progressive, or strongly pro-poor, for all the PMT model variations (Figure 2.4). For the baseline PMT model, 33 percent in 2007 (compared to 36 percent in 2004) of the projected recipients belong to the poorest decile of the population, with another 21.1 percent from the second decile; overall, 55.4 percent of the beneficiaries of the simulated programs belong to the poorest quintile. The PMT model predicted distribution remains as strong as was estimated with the 2004 data. For 2004, using prediction based on the subsample of the 40 percent or 50 percent poorest will improve this indicator, but only marginally (to 56.1 percent and 55.9 percent, respectively) and this remains the case for 2007, as well.

Any of the PMT model variations is a substantial improvement over the current distribution of benefits as found with the 2007 HBS data.

- **For the overall social safety net:** Overall, the distribution of social protection benefits is regressive in BH. Those in the poorest quintile (representing 20 percent of the population) receive less than 17 percent of total social protection benefits (similar for social insurance and total social assistance benefits—Figure 1.1);

- **For existing means-tested benefits:** In the RS, those in the poorest quintile receive 48 percent of social assistance benefits and 35 percent of child protection allowances (Figure 1.13). The FBH targeting accuracy is much lower—17 percent for child protection and 25 percent for other social assistance.

The simulated PMT model compares favorably in terms of targeting accuracy of the performance of other countries operating means- and proxy-means-tested programs (Figure 2.5). However, this comparison should be qualified: the targeting accuracy of any programs implemented in BH will depend not only on its design, but also on the quality of implementation (Castaneda and Lindert 2003).

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Figure 2.5: Share of Beneficiaries in the Bottom Quintile – International Comparisons

Source: HBS 2007 actual and simulated results, and Tesliuc and others 2009.

D. *Limitations of the PMT model*

The PMT model has several limitations stemming from the imperfect HBS data set on which predictions are made.

Due to limitations of the HBS dataset, the baseline PMT model seems not to perform as well as the models calibrated by CEPOS (2006) in correctly identifying the poor, with errors of exclusion ranging from 33 percent to 44 percent and errors of inclusion ranging from 4 percent to 7 percent. This is because of the difference in data sets that were used for calibrating the models. CEPOS used the LSMS 2004 data set while this PMT model calculated by the World Bank used the HBS 2007 data set. This mainly reflects the usefulness of LSMS-type data over HBS-type data for any welfare analysis. In addition, the CEPOS sample size is about half the size of the World Bank sample.

The HBS data set has further peculiarities that might make the PMT simulations in BH less precise. First, the HBS 2007 sample is scattered across the whole year; hence, consumption is measured in different months over the year. Consumption is highly seasonal. This seasonal effect reduces the fit of the PMT regression. Second, the variance of the per-adult-equivalent (PAE)[12] consumption is typically less than that of the per-capita (PC) consumption. It means that PAE consumption discriminates less than PC consumption. PC consumption picks up better correlates like household size and

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[12] For BH, the Bosnia and Herzegovina Agency for Statistics (BHAS) uses the OECD scale for adjusting the composition of households to account for economies of scale and better measurement of consumption of the individual within the household.

composition while PAE already adjusts for household composition. As discussed in section 2.2, some important predictors have not been collected in HBS 2007, such as agricultural income and assets and employment characteristics. Hence, the PMT model has less explanatory power on the right-hand side of the regression and thus less power to approximate the real data points.

Table 2.3: Distribution of Beneficiaries of the 2007 and 2004 PMT Models Covering 20 Percent of the Population, by Decile

	Total	Deciles of Per Capita Consumption									
		D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
						Absolute Incidence (%)					
2007 Baseline PMT	100.0	33.3	21.1	14.9	11.1	7.5	5.5	4.0	1.2	0.8	0.6
2004 Baseline PMT	100.0	36.0	19.6	14.0	9.4	8.4	5.4	2.6	2.7	1.4	0.4
						Coverage (%)					
2007 Baseline PMT	20.0	73.1	42.5	28.3	20.9	14.2	9.8	6.4	2.9	1.7	1.0
2004 Baseline PMT	20.0	72.1	39.2	28.0	18.8	16.8	10.9	5.2	5.4	2.8	0.9

Notes:
D1 to D10 are deciles of per-adult-equivalent consumption.
Absolute incidence is the proportion of beneficiaries in each group. Specifically, absolute incidence is: (Number of individuals in the group who live in a household where at least one member receives the transfer)/(Number of individuals living in beneficiary households).
Coverage is the portion of each group that receives the transfer; that is: (Number of individuals in the group who live in a household where at least one member receives the transfer)/(Number of individuals in the group).

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SECTION 3:

CONCLUSIONS AND RECOMMENDATIONS

This section presents conclusions and recommendations regarding non-contributory social assistance transfers in Bosnia and Herzegovina:

- Public spending on such transfers is extremely high (4 percent of GDP) and unsustainable, particularly in the face of the impending economic crisis.

- Transfers are biased toward rights-based benefits for veterans/survivors and non-war invalids. Although these rights-based transfers reflect the post-conflict situation, and likely serve important political and social stability functions, they are regressive, transferring a higher share of benefits to those in the middle and upper quintiles than those in the poorest quintiles of the population.

- Coverage of the poor by non-contributory transfers is quite low, meaning that the poor will receive limited protection with the onslaught of the looming economic crisis. As a result, high spending on social transfers also buys negligible poverty impacts.

- High spending on social transfers also likely crowds out resources for public investment—which will further cripple the governments' abilities to respond to the economic crisis or stimulate economic activity.

- There is also evidence to suggest that transfers may dampen adult work effort.

This situation is unsustainable, inefficient, and inequitable. An overhaul of non-contributory social assistance transfers is needed. Political and social constraints do need to be taken into account, and radical measures to terminate (regressive) veteran-related benefits are unlikely to have much political support. Nonetheless, there are many ways in which BH could reform its programs and systems to strengthen and develop a true social safety net that is (a) less of a burden on public resources, (b) more efficient, and (c) better targeted to the poor. Specifically, it is recommended that the government consider a three-pronged approach with measures to:

- **Improve and introduce targeting mechanisms to better channel resources to the poor.** The rationale for targeting benefits to the poor is to concentrate scarce resources on those who need them most. This concept is particularly important in times of crisis, where the poor are even more vulnerable to adverse effects of the economic downturn. From a *technical* perspective, developing and introducing improved targeting mechanisms could be done fairly quickly, with a rollout of revised eligibility mechanisms possible over a period of 6 to 12 months. This would involve an assessment of

institutional and implementation aspects of existing enrollment criteria and processes in each Entity (Republika Srpska [RS] and the Federation of Bosnia and Herzegovina [FBH]) and further diagnostics on proposed mechanisms to reform such criteria and processes. Such tools could be applied on a pilot basis for certain civilian and possibly war veterans' benefits in an initial phase. The tools developed in this paper could provide important inputs to these diagnostics. The results of the proxy-means-testing (PMT) modeling exercise indicate that the targeting accuracy would be substantially improved following reforms that would lead to an introduction of PMT formulas as a means of assessing the applications for some non-insurance benefits. From a *political* perspective, policymakers would need to determine the pace at which such reforms could be rolled out (rapid reforms versus a more gradual approach), the thresholds for eligibility to be established (more narrow focus on the poor versus a broader definition of low-income groups), and which programs would be selected for targeting based on need. Such political decisions would need to strike a careful balance between fiscal pressures and political support for such reforms, and should be accompanied by a strong consultative process and communications strategy to improve awareness in BH of the need for such reforms.

- **Strengthen benefits administration and beneficiary registry systems.** In many countries, modernizing and strengthening benefits administration is an important "hook" for progress on the safety nets agenda, with many benefits in terms of improved efficiency; reduced duplications, fraud, and errors; and improved transparency. The importance of such improvements is even more apparent in BH, given the high level of spending on such benefits (4 percent of GDP) and the plethora of non-contributory social transfer benefits in both Entities. In many cases, definitions of key parameters for these programs are inconsistent (for example, definition of the assistance unit, benefits calculations, eligibility criteria, and so forth). Registry systems are also weak, with little integration across cantons in FBH or across programs. This creates ample scope for errors, fraud, and duplicate benefits, both within and across programs. The introduction of automated, unified registries of social benefits programs is often a crucial first step toward improved efficiency, reduced duplications, and consolidation of safety net programs. Developing harmonized and consistent parameters is an important input for unified registries (and usually requires legislative reforms). Improved institutional capacity and information technology is also usually needed, both at central agency (ministry) levels and at local levels (centers for social work). Oversight and controls mechanisms (such as random-sample spot-checks, internal cross-checks, and so forth) are also usually important for reducing fraud and errors. Such improvements in benefits administration and registries are generally *medium-term measures requiring significant technical assistance and institutional/IT investments, though some initial actions could be taken in the short run (for example, mapping out and assessing information flows, institutional responsibilities, and so forth).*

- **Focus on rationalizing disability-related benefit schemes.** The apparent inability to impose restraint on the rapidly increasing expenditures on disability-related benefits is a key challenge facing authorities, especially in FBH. Notwithstanding the recent attempts to reform the area of non-war disability benefit programs whose effects will be limited at best, given the present sociopolitical conditions, it is difficult to expect that this whole

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segment can be subjected to radical reforms in the near future. The proposed measures, if taken in a measured and sequenced fashion, would eventually help the governments tackle the challenges in this segment by virtue of keeping the focus of disability benefit programs on the most vulnerable beneficiaries, while achieving savings to bring down the overall high non-insurance social transfer expenditures. Specific recommendations include:

- o Clarifying and strengthening systems for certifying and recertifying different levels of disability (such measures could be introduced relatively quickly, in the *short-run*, though they would require continuous oversight).

- o Introducing targeting-related eligibility criteria to better channel increasingly scarce resources to the *poor* disabled (those most in need). Politically, it would likely be more feasible to start by introducing targeting criteria (for example, some form of means-testing) to civilian disability benefits (Non-War Invalids benefits) rather than war veterans' benefits. This is also a most pressing concern from the point of view of fiscal sustainability, given that these expenditures have ballooned in recent years in the FBH. *Such measures could be introduced in the short to medium term,* once targeting tools are developed.

- o Improving benefits administration, registry management, and oversight and controls mechanisms for disability benefits (*medium-term measures*).

Reforming safety nets is usually an iterative and ongoing process that takes place over a significant period of time. Initial measures could involve the development of technical tools (for example, targeting mechanisms) and legislative reforms to pave the way for implementing improved benefit targeting, benefit administration, and management.

While there are ample technical opportunities for strengthening and reforming the safety net in BH (many of which are discussed in this Note), the Entity Governments will need to strike a careful balance between fiscal pressures for reform (which are increasing under the global crisis) and political support for such measures. Such a balance will need to come into play in decisions about (a) which programs to target, (b) how narrow to target them (setting levels of thresholds that focus narrowly on the poor or more broadly on "lower-income groups," for example), and (c) how fast to proceed (bold, sweeping, and fast reforms versus a more gradual approach). A strategy for (continued) consultations and clear communication of the rationale and need for reforms will also need to accompany any technical strategy for improving the system to balance political support for reforms with the fiscal, efficiency, and equity objectives for overhauling the system.

ANNEX A: PERFORMANCE OF THE CURRENT PROGRAMS: ADePTᵃ TABLES

The ranking variable used was per-adult-equivalent consumption and the reference period for monetary values was 2007.

Table AA. 1: Population Demographics

	Total	Quintiles of Consumption					Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	Urban	Rural	FBH	RS	Brcko
Share of Total Population	100.0	20.0	20.0	20.0	20.0	20.0	39.2	60.8	64.2	33.8	1.9
Share of Poor Population	100.0	100.0	0.0	0.0	0.0	0.0	24.9	75.1	59.8	37.5	2.8
Share of Urban Population	100.0	13.3	15.9	19.2	22.5	29.2	100.0	0.0	67.6	30.0	2.3
Share of Rural Population	100.0	24.3	22.6	20.5	18.4	14.1	0.0	100.0	62.0	36.3	1.7
Share of Total Consumption	100.0	7.8	12.6	16.9	23.0	39.7	46.1	53.9	67.2	31.0	1.7
Mean Consumption	9,083.8	3,563.7	5,725.9	7,668.3	10,445.2	18,012.2	10,687.2	8,051.7	9,509.5	8,330.3	8,137.0

a. ADePT is the World Bank Stata Software Platform for Automated Economic Analysis. More information can be found at: http://www.worldbank.org/adept.

Notes:

Data are (Number of individuals in group)/(Number of individuals in population), using household-size-weighted expansion factors to estimate numbers. Welfare aggregate expressed in local currency unit (LCU).

Table AA. 2: Average Transfer Value, Per Capita

| | All Households | | | | | | Poverty Status | | Area of Residence | | Regions | | |
| | Quintiles of Consumption | | | | | | | | | | | | |
	Total	Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBH	RS	Brcko
All Social Protection	823.0	699.5	775.7	881.2	907.8	850.5	700.4	850.2	995.2	712.1	851.5	772.0	766.9
All Social Insurance	705.8	587.1	671.0	758.5	792.8	719.6	585.5	732.6	879.5	594.0	733.1	666.0	498.3
Veterans' Pensions	25.4	15.5	24.6	25.8	31.5	29.4	14.5	27.8	26.2	24.8	28.5	19.3	27.3
Family Survivor Pension	160.2	155.6	155.0	166.8	179.0	144.6	153.2	161.7	170.3	153.7	172.1	143.1	65.8
Old-age Pension	405.9	315.8	367.9	444.6	468.4	432.8	316.4	425.8	544.3	316.8	420.1	382.6	341.7
Work Disability Pension	114.4	100.2	123.6	121.4	113.9	112.8	101.5	117.2	138.8	98.7	112.5	120.9	63.5
All Labor Market Programs	7.1	11.1	8.6	5.6	4.8	5.5	9.9	6.5	5.9	7.9	10.6	0.7	2.7
Civilian and Veteran Unemployment Benefits	7.1	11.1	8.6	5.6	4.8	5.5	9.9	6.5	5.9	7.9	10.6	0.7	2.7
All Social Assistance	110.0	101.3	96.1	117.0	110.3	125.4	104.9	111.2	109.8	110.2	107.8	105.3	265.9
Veteran: Military Invalids' and Survivor Benefits	78.7	58.7	68.3	78.5	85.2	102.7	59.0	83.1	75.2	80.9	80.5	78.4	24.2
Civilian: Child Protection Allowance	18.1	24.4	15.4	17.6	17.1	15.8	26.3	16.2	19.6	17.1	11.5	19.6	208.1
Civilian: CSW Benefits incl. SA, NWI, CVW	13.3	18.2	12.5	20.9	8.0	6.9	19.6	11.9	15.0	12.2	15.9	7.3	33.6

Notes:
Table entries are the average per capita transfer received by all households in a group. It includes households that did not receive the transfer.
Averages are calculated setting as expansion factor the household expansion factor multiplied by the household size.
Averages in LCU.

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Table AA. 3: Average Transfer Value, Per Capita, Beneficiary Households of Indicated Transfer Only

Direct and Indirect Beneficiaries

		Quintiles of Consumption					Poverty Status		Area of Residence		Regions		
	Total	Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBH	RS	Brcko
All Social Protection	1,655.4	1,211.9	1,471.1	1,742.0	1,881.1	2,165.8	1,211.3	1,774.6	1,989.7	1,438.1	1,783.2	1,463.0	1,251.4
All Social Insurance	1,762.6	1,327.5	1,565.7	1,848.5	1,967.7	2,262.1	1,328.4	1,871.3	2,090.1	1,533.6	1,898.0	1,537.7	1,654.5
Veterans' Pensions	1,345.4	1,014.9	1,504.6	1,225.6	1,360.7	1,597.4	1,079.9	1,384.8	1,421.3	1,298.4	1,343.0	1,360.0	1,258.1
Family Survivor Pension	1,374.3	1,125.7	1,322.4	1,423.2	1,458.1	1,652.9	1,133.7	1,438.6	1,563.4	1,265.1	1,539.7	1,106.0	1,247.8
Old-age Pension	1,930.7	1,422.9	1,625.4	1,956.7	2,269.1	2,556.8	1,414.2	2,054.8	2,305.9	1,636.3	2,067.4	1,701.7	1,820.4
Work Disability Pension	1,395.6	1,106.4	1,334.6	1,525.3	1,434.7	1,667.6	1,101.5	1,471.2	1,621.8	1,239.1	1,481.0	1,272.2	1,201.0
All Labor Market Programs	349.4	323.7	344.4	369.5	370.0	379.5	283.9	379.2	490.9	306.6	343.8	551.4	750.0
Civilian and Veteran Unemployment Benefits	349.4	323.7	344.4	369.5	370.0	379.5	283.9	379.2	490.9	306.6	343.8	551.4	750.0
All Social Assistance	886.2	670.0	800.8	857.6	953.0	1,288.0	669.1	951.0	945.4	852.1	1,038.9	714.3	677.8
Veteran: Military Invalids' and Survivor Benefits	1,213.6	1,026.6	1,185.3	976.3	1,296.7	1,623.8	1,020.7	1,251.0	1,323.9	1,156.1	1,378.1	1,004.6	512.1
Civilian: Child Protection Allowance	385.0	347.6	357.5	381.3	405.6	479.6	355.1	397.1	408.3	369.5	390.5	310.6	607.1
Civilian: CSW Benefits incl. SA, NWI, CVW	603.2	475.2	499.2	891.5	520.7	850.9	495.0	655.8	672.6	557.6	667.5	417.2	738.6

Notes:
Table entries are the average per capita transfer received. It excludes households that did not receive the transfer.
Sample of households with positive per capita transfer.
Averages are calculated across this sample, setting as expansion factor the household expansion factor multiplied by the household size.
All household members, recipients or not, are counted as beneficiaries.
For each household, per capita average transfer is estimated as (Total transfers received)/(Household size).
Averages in LCU.

Table AA. 4: Coverage

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption					Poverty Status		Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBH	RS	Brcko
All Social Protection	49.7	57.7	52.7	50.6	48.3	39.3	57.8	47.9	50.0	49.5	47.8	52.8	61.3
All Social Insurance	40.0	44.2	42.9	41.0	40.3	31.8	44.1	39.1	42.1	38.7	38.6	43.3	30.1
Veterans' Pensions	1.9	1.5	1.6	2.1	2.3	1.8	1.3	2.0	1.8	1.9	2.1	1.4	2.2
Family Survivor Pension	11.7	13.8	11.7	11.7	12.3	8.7	13.5	11.2	10.9	12.1	11.2	12.9	5.3
Old-age pension	21.0	22.2	22.6	22.7	20.6	16.9	22.4	20.7	23.6	19.4	20.3	22.5	18.8
Work Disability Pension	8.2	9.1	9.3	8.0	7.9	6.8	9.2	8.0	8.6	8.0	7.6	9.5	5.3
All Labor Market Programs	2.0	3.4	2.5	1.5	1.3	1.4	3.5	1.7	1.2	2.6	3.1	0.1	0.4
Civilian and Veteran Unemployment Benefits	2.0	3.4	2.5	1.5	1.3	1.4	3.5	1.7	1.2	2.6	3.1	0.1	0.4
All Social Assistance	12.4	15.1	12.0	13.6	11.6	9.7	15.7	11.7	11.6	12.9	10.4	14.7	39.2
Veteran: Military Invalids' and Survivor Benefits	6.5	5.7	5.8	8.0	6.6	6.3	5.8	6.6	5.7	7.0	5.8	7.8	4.7
Civilian: Child Protection Allowance	4.7	7.0	4.3	4.6	4.2	3.3	7.4	4.1	4.8	4.6	2.9	6.3	34.3
Civilian: CSW Benefits incl. SA, NWI, CVW	2.2	3.8	2.5	2.3	1.5	0.8	4.0	1.8	2.2	2.2	2.4	1.8	4.6

Notes:

Program coverage is the portion of population in each group that receives the transfer.

Specifically, coverage is: (Number of individuals in the group who live in a household where at least one member receives the transfer)/(Number of individuals in the group).

Program coverage is calculated setting as expansion factor the household expansion factor multiplied by the household size.

Table AA. 5: Coverage in Republika Srpska

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption					Poverty Status		Area of Residence	
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural
All Social Protection	52.8	64.5	55.1	54.4	47.7	42.3	64.6	49.8	51.9	53.2
All Social Insurance	43.3	49.8	46.9	45.5	39.4	34.9	50.0	41.6	44.8	42.5
Veterans' Pensions	1.4	0.9	1.0	1.6	2.5	1.0	0.9	1.5	1.1	1.6
Family Survivor Pension	12.9	16.2	14.7	12.2	10.4	11.3	16.4	12.1	10.7	14.1
Old-age Pension	22.5	25.6	23.4	25.9	20.2	17.4	25.3	21.8	25.9	20.7
Work Disability Pension	9.5	10.7	10.9	9.1	9.1	7.8	11.3	9.0	9.3	9.6
All Labor Market Programs	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.1	0.1	0.1
Civilian and Veteran Unemployment Benefits	0.1	0.1	0.1	0.4	0.0	0.1	0.1	0.1	0.1	0.1
All Social Assistance	14.7	22.9	11.2	14.3	12.2	13.2	22.7	12.7	12.3	16.0
Veteran: Military Invalids' and Survivor Benefits	7.8	8.4	5.8	7.9	7.4	9.4	8.3	7.7	7.9	7.8
Civilian: Child Protection Allowance	6.3	12.5	4.6	6.5	4.2	3.8	12.3	4.8	3.1	8.0
Civilian: CSW Benefits incl. SA, NWI, CVW	1.8	4.0	1.9	1.0	0.9	0.8	4.1	1.2	2.4	1.4

Table AA. 6: Coverage in Federation of BH

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption					Poverty Status		Area of Residence	
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural
All Social Protection	47.8	53.1	51.2	49.4	46.5	38.5	53.2	46.6	48.9	46.9
All social Insurance	38.6	40.3	41.5	40.3	40.3	30.8	40.7	38.2	41.3	36.8
Veterans' Pensions	2.1	1.7	2.4	1.8	2.6	2.1	1.6	2.2	2.2	2.1
Family Survivor Pension	11.2	12.6	11.1	11.1	12.7	8.5	12.1	11.0	11.2	11.1
Old-age Pension	20.3	19.8	21.8	22.4	21.1	16.5	20.5	20.3	22.6	18.7
Work Disability Pension	7.6	7.8	8.6	8.2	7.2	6.2	7.8	7.5	8.4	7.1
All Labor Market Programs	3.1	5.6	3.8	2.1	1.6	2.2	5.8	2.5	1.7	4.1
Civilian and Veteran Unemployment Benefits	3.1	5.6	3.8	2.1	1.6	2.2	5.8	2.5	1.7	4.1
All Social Assistance	10.4	10.4	11.2	12.5	9.2	8.6	10.2	10.4	10.6	10.2
Veteran: Military Invalids' and Survivor Benefits	5.8	4.4	5.4	8.1	5.8	5.5	4.3	6.2	4.8	6.6
Civilian: Child Protection Allowance	2.9	3.1	2.7	2.9	3.2	2.9	3.1	2.9	4.7	1.7
Civilian: CSW Benefits incl. SA, NWI, CVW	2.4	3.7	3.4	2.9	1.2	0.8	3.7	2.1	2.1	2.6

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Table AA. 7: Distribution of Beneficiaries

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption					Poverty Status		Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBiH	RS	Brcko
All Social Protection	100.0	23.2	21.2	20.4	19.4	15.8	21.2	78.8	39.4	60.6	61.7	35.9	2.4
All Social Insurance	100.0	22.1	21.4	20.5	20.1	15.9	20.0	80.0	41.2	58.8	61.9	36.6	1.5
Veterans' Pensions	100.0	16.3	17.3	22.3	24.6	19.5	12.9	87.1	38.3	61.7	72.3	25.5	2.2
Family Survivor Pension	100.0	23.7	20.1	20.1	21.1	15.0	21.1	78.9	36.6	63.4	61.6	37.6	0.9
Old-age Pension	100.0	21.1	21.5	21.6	19.6	16.1	19.4	80.6	44.0	56.0	62.1	36.2	1.7
Work Disability Pension	100.0	22.1	22.6	19.4	19.4	16.5	20.5	79.5	40.9	59.1	59.5	39.2	1.3
All labor Market Programs	100.0	33.7	24.5	14.9	12.7	14.2	31.3	68.7	23.2	76.8	97.6	2.0	0.3
Civilian and Veteran Unemployment Benefits	100.0	33.7	24.5	14.9	12.7	14.2	31.3	68.7	23.2	76.8	97.6	2.0	0.3
All Social Assistance	100.0	24.4	19.3	22.0	18.7	15.7	23.0	77.0	36.6	63.4	53.7	40.2	6.2
Veteran: Military Invalids' and Survivor Benefits	100.0	17.6	17.8	24.8	20.3	19.5	16.2	83.8	34.3	65.7	57.8	40.7	1.4
Civilian: Child Protection Allowance	100.0	29.9	18.4	19.7	18.0	14.0	28.8	71.2	40.0	60.0	40.3	45.5	14.2
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	34.7	22.7	21.3	14.0	7.3	32.7	67.3	39.6	60.4	69.1	26.8	4.0

Notes:

Beneficiaries' incidence shows the proportion of beneficiaries in each group.

Specifically, beneficiaries' incidence is: (Number of individuals in the group who live in a household where at least one member receives the transfer)/(Total number of direct and indirect beneficiaries).

Beneficiaries' incidence is calculated setting as expansion factor the household expansion factor multiplied by the household size.

Table AA. 8: Distribution of Beneficiaries in Republika Srpska

Direct and Indirect Beneficiaries

		Quintiles of Consumption					Poverty Status		Area of Residence	
	Total	Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural
All Social Protection	100.0	24.4	20.9	20.6	18.1	16.0	24.7	75.3	34.2	65.8
All Social Insurance	100.0	22.9	21.7	21.0	18.2	16.1	23.3	76.7	36.0	64.0
Veterans' Pensions	100.0	13.0	14.4	23.2	34.7	14.7	13.0	87.0	27.1	72.9
Family Survivor Pension	100.0	24.9	22.7	18.8	16.1	17.5	25.5	74.5	28.8	71.2
Old-age Pension	100.0	22.7	20.9	23.0	18.0	15.5	22.7	77.3	40.0	60.0
Work Disability Pension	100.0	22.5	22.9	19.1	19.1	16.5	24.0	76.0	34.1	65.9
All Labor Market Programs	100.0	19.9	9.8	60.0	0.0	10.3	19.9	80.1	29.2	70.8
Civilian and Veteran Unemployment Benefits	100.0	19.9	9.8	60.0	0.0	10.3	19.9	80.1	29.2	70.8
All Social Assistance	100.0	30.9	15.2	19.4	16.6	17.9	31.0	69.0	29.1	70.9
Veteran: Military Invalids' and Survivor Benefits	100.0	21.5	14.9	20.4	19.0	24.2	21.5	78.5	35.1	64.9
Civilian: Child Protection Allowance	100.0	39.4	14.5	20.5	13.5	12.1	39.4	60.6	17.2	82.8
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	46.0	21.9	11.8	10.6	9.7	46.7	53.3	46.9	53.1

Table AA. 9: Distribution of Beneficiaries in Federation of BH

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption					Poverty Status		Area of Residence	
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural
All Social Protection	100.0	22.2	21.4	20.7	19.5	16.2	18.9	81.1	42.2	57.8
All Social Insurance	100.0	20.9	21.5	20.8	20.9	16.0	17.8	82.2	44.0	56.0
Veterans' Pensions	100.0	16.2	22.5	17.4	24.1	19.8	12.8	87.2	42.4	57.6
Family Survivor Pension	100.0	22.5	19.8	19.9	22.6	15.2	18.4	81.6	41.4	58.6
Old-age Pension	100.0	19.5	21.5	22.0	20.7	16.3	17.1	82.9	45.9	54.1
Work Disability Pension	100.0	20.7	22.6	21.5	19.0	16.2	17.4	82.6	45.4	54.6
All Labor Market Programs	100.0	36.4	24.8	13.9	10.5	14.4	31.6	68.4	22.8	77.2
Civilian and Veteran Unemployment Benefits	100.0	36.4	24.8	13.9	10.5	14.4	31.6	68.4	22.8	77.2
All Social Assistance	100.0	20.0	21.6	24.1	17.7	16.5	16.6	83.4	42.0	58.0
Veteran: Military Invalids' and Survivor Benefits	100.0	15.1	18.6	27.6	20.0	18.8	12.4	87.6	33.8	66.2
Civilian: Child Protection Allowance	100.0	20.8	18.5	19.5	21.5	19.6	17.7	82.3	65.8	34.2
Civilian: CSW Benefits incl. SA, NW1, CVW	100.0	31.0	28.2	24.3	10.0	6.5	26.6	73.4	36.5	63.5

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Table AA. 10: Distribution of Benefits (Targeting Accuracy)

		Quintiles of Consumption				
	Total	Q1	Q2	Q3	Q4	Q5
All Social Protection	100.0	16.9	18.9	21.3	22.0	20.9
All Social Insurance	100.0	16.5	19.2	21.4	22.3	20.6
Veterans' Pensions	100.0	12.9	21.1	18.7	23.3	24.1
Family Survivor Pension	100.0	19.3	19.5	21.1	22.0	18.1
Old-age Pension	100.0	15.5	18.3	21.6	23.0	21.7
Work Disability Pension	100.0	17.0	21.6	21.6	20.1	19.7
All Labor Market Programs	100.0	30.7	24.3	16.0	13.8	15.2
Civilian and Veteran Unemployment Benefits	100.0	30.7	24.3	16.0	13.8	15.2
All social Assistance	100.0	18.3	16.8	21.0	20.6	23.3
Veteran: Military Invalids' and Survivor Benefits	100.0	14.7	16.6	19.7	22.4	26.7
Civilian: Child Protection Allowance	100.0	25.9	17.0	19.9	19.6	17.6
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	30.2	17.9	29.5	11.6	10.7

Notes:

Benefits' incidence is the transfer amount received by the group as a percent of total transfers received by the population.

Specifically, benefits' incidence is: (Sum of all transfers received by all individuals in the group)/(Sum of all transfers received by all individuals in the population).

Aggregated transfer amounts are estimated using household size-weighted expansion factors.

Table AA. 11: Distribution of Benefits (Targeting Accuracy) in Republika Srpska

		Quintiles of Consumption				
	Total	Q1	Q2	Q3	Q4	Q5
All Social Protection	100.0	6.1	6.4	6.9	6.5	6.1
All Social Insurance	100.0	5.9	6.6	6.9	6.7	6.0
Veterans' Pensions	100.0	5.0	6.8	3.9	8.3	4.0
Family Survivor Pension	100.0	7.3	6.5	5.9	4.8	5.5
Old-age Pension	100.0	5.5	6.4	7.4	7.2	5.8
Work Disability Pension	100.0	5.4	7.9	7.5	7.4	7.8
All Labor Market Programs	100.0	0.4	0.8	2.3	0.0	0.4
Civilian and Veteran Unemployment Benefits	100.0	0.4	0.8	2.3	0.0	0.4
All Social Assistance	100.0	25.7	14.4	20.4	15.7	23.8
Veteran: Military Invalids' and Survivor Benefits	100.0	21.4	15.4	19.6	15.9	27.8
Civilian: Child Protection Allowance	100.0	35.4	13.1	25.8	14.6	11.2
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	47.7	7.5	16.8	16.9	11.2

Table AA. 12: Distribution of Benefits (Targeting Accuracy) in Federation of Bosnia and Herzegovina

		Quintiles of Consumption				
	Total	Q1	Q2	Q3	Q4	Q5
All Social Protection	100.0	10.3	12.2	14.8	14.9	14.0
All Social Insurance	100.0	10.3	12.3	14.9	15.1	13.8
Veterans' Pensions	100.0	7.3	15.8	11.4	16.4	18.8
Family Survivor Pension	100.0	12.0	13.7	14.8	15.6	12.9
Old-age Pension	100.0	9.5	11.4	15.1	15.7	14.4
Work Disability Pension	100.0	11.6	13.1	15.0	11.6	11.7
All Labor Market Programs	100.0	30.8	24.3	13.6	12.0	14.8
Civilian and Veteran Unemployment Benefits	100.0	30.8	24.3	13.6	12.0	14.8
All Social Assistance	100.0	14.1	17.2	23.4	21.1	24.2
Veteran: Military Invalids' and Survivor Benefits	100.0	11.5	15.9	23.0	23.1	26.5
Civilian: Child Protection Allowance	100.0	17.2	13.5	16.9	25.7	26.6
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	25.1	25.9	29.2	8.6	11.2

Table AA. 13: Generosity

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption					Poverty Status		Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBiH	RS	Brcko
All Social Protection	29.6	44.8	32.1	27.9	22.1	15.8	45.8	25.2	30.0	29.3	29.9	29.3	26.5
All Social Insurance	31.1	48.3	33.9	29.3	22.9	16.5	49.3	26.5	31.0	31.2	31.4	30.5	32.0
Veterans' Pensions	23.7	40.8	34.5	17.5	15.0	13.2	44.8	20.1	22.0	25.0	20.3	31.7	17.6
Family Survivor Pension	27.6	45.4	29.9	24.6	18.7	13.1	46.7	22.5	25.7	28.9	28.4	26.4	27.3
Old-age Pension	32.9	51.3	34.7	31.0	25.8	18.6	52.0	28.3	33.0	32.8	33.2	32.2	34.0
Work Disability Pension	23.8	36.3	29.0	23.5	16.2	11.1	36.9	20.7	24.4	23.4	24.0	23.4	28.8
All Labor Market Programs	7.9	14.5	6.9	5.5	4.1	2.3	14.3	5.4	10.5	7.0	7.9	8.9	8.1
Civilian and Veteran Unemployment Benefits	15.3	24.9	15.8	12.9	11.1	8.3	14.3	5.4	13.9	16.2	7.9	8.9	8.1
All Social Assistance	15.3	24.9	15.8	12.9	11.1	8.3	25.3	12.3	13.9	16.2	16.2	14.2	14.9
Veteran: Military Invalids' and Survivor Benefits	18.5	33.0	22.8	15.2	14.8	10.4	33.6	15.7	18.6	18.5	19.5	17.5	9.0
Civilian: Child Protection Allowance	6.6	11.9	6.4	5.1	4.1	3.0	12.3	4.7	5.9	7.1	5.4	6.5	10.7
Civilian: CSW Benefits incl. SA, NWI, CVW	15.1	23.0	10.1	12.1	6.1	5.4	23.8	9.2	11.0	17.5	15.2	12.6	28.3

Notes:

Generosity is the mean value of the share transfer amount received by all beneficiaries in a group as a share of total welfare aggregate of the beneficiaries in that group.

Generosity is calculated setting as expansion factor the household expansion factor multiplied by the household size.

Generosity expressed in LCU.

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Table AA. 14: Undercoverage and Leakage

Direct and Indirect Beneficiaries

	Coverage of the Poor (1)	Under-coverage (2)	Leakage (# of beneficiaries) (3)	Leakage (benefits) (4)	Targeting Differential (5) = (1) – (3)
All Social Protection	57.8	42.2	78.8	84.5	-21.0
All Social Insurance	44.1	55.9	80.0	84.9	-35.9
Veterans' Pensions	1.3	98.7	87.1	89.6	-85.7
Family Survivor Pension	13.5	86.5	78.9	82.6	-65.4
Old-age Pension	22.4	77.6	80.6	85.8	-58.3
Work Disability Pension	9.2	90.8	79.5	83.9	-70.3
All Labor Market Programs	3.5	96.5	68.7	74.6	-65.2
Civilian and Veteran Unemployment Benefits	3.5	96.5	68.7	74.6	-65.2
All Social Assistance	15.7	84.3	77.0	82.7	-61.3
Veteran: Military Invalids' and Survivor Benefits	5.8	94.2	83.8	86.4	-78.0
Civilian: Child Protection Allowance	7.4	92.6	71.2	73.5	-63.8
Civilian: CSW Benefits incl. SA, NWI, CVW	4.0	96.0	67.3	73.2	-63.3

Notes:
Undercoverage is percent of poor individuals that do not receive transfer.
Leakage is percent of individuals that receive transfer and are not poor.
Sample of all households. Undercoverage and leakage are calculated across this sample, setting as expansion factor the household expansion factor multiplied by the household size.
The targeting differential is the difference between the coverage rate and the participation rate for non-poor.

Table AA. 15: Impact of Programs on Poverty and Inequality Measures – Simulating the Absence of the Program

	Poverty Indicator			Inequality			
	FGT0	FGT1	FGT2	Gini	GE(0)	GE(1)	GE(2)
Indicator	0.182	0.046	0.018	0.316	0.167	0.167	0.201
Indicator without Listed Transfer							
All social protection	0.271	0.096	0.050	0.356	0.333	0.213	0.252
All social insurance	0.258	0.088	0.045	0.350	0.286	0.206	0.244
Veterans' Pensions	0.184	0.047	0.019	0.317	0.171	0.168	0.202
Family survivor pension	0.201	0.056	0.024	0.324	0.189	0.176	0.210
Old-age pension	0.225	0.069	0.033	0.336	0.233	0.189	0.225
Work disability pension	0.194	0.053	0.022	0.322	0.182	0.173	0.208
All labor market programs	0.183	0.047	0.018	0.317	0.169	0.168	0.202
Civilian and veteran unemployment benefits	0.183	0.047	0.018	0.317	0.169	0.168	0.202
All social assistance	0.192	0.052	0.022	0.321	0.182	0.173	0.207
Veteran: Military Invalids' and Survivor Benefits	0.189	0.050	0.020	0.319	0.178	0.171	0.205
Civilian: Child protection allowance	0.184	0.047	0.019	0.317	0.169	0.168	0.202
Civilian: CSW benefits incl. SA, NWI, CVW	0.183	0.047	0.019	0.317	0.169	0.168	0.202

Note: The simulated impact is the change in a poverty or inequality indicator due to transfer, assuming that household welfare will diminish by the full value of that transfer.

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Table AA. 16: Coady-Grosh-Hoddinott (CGH) Indicator

Direct and Indirect Beneficiaries

	Bottom			
	10%	20%	30%	40%
All Social Protection	1.17	1.16	1.12	1.11
All Social Insurance	1.03	1.10	1.09	1.09
Veterans' Pensions	1.00	0.81	0.79	0.84
Family Survivor Pension	1.14	1.19	1.16	1.10
Old-age Pension	0.96	1.06	1.05	1.07
Work Disability Pension	0.93	1.10	1.11	1.12
All Labor Market Programs	2.20	1.69	1.46	1.45
Civilian and Veteran Unemployment Benefits	2.20	1.69	1.46	1.45
All Social Assistance	1.46	1.22	1.14	1.09
Veteran: Military Invalids' and Survivor Benefits	0.87	0.88	0.91	0.89
Civilian: Child Protection Allowance	1.91	1.50	1.30	1.21
Civilian: CSW Benefits incl. SA, NWI, CVW	2.42	1.74	1.56	1.43

Notes:
CGH indicators compare the portion of the transfer budget received by a population quintile divided by the portion of population in that quintile.
Larger numbers indicate that a program is more progressive.
A program with even targeting (where every individual received the same transfer) would have CGH indicators of 1.0.
The indicator is calculated at the household level, setting as expansion factor the household expansion factor multiplied by the household size.

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Table AA. 17: Coady-Grosh-Hoddinott (CGH) Indicator, Benefits' Incidence

	Bottom				Concentration Index
	10%	20%	30%	40%	
All Social Protection	0.78	0.85	0.88	0.90	0.0434
All Social Insurance	0.73	0.83	0.87	0.89	0.0460
Veterans' Pensions	0.85	0.61	0.76	0.79	0.1032
Family Survivor Pension	0.88	0.97	1.00	0.97	0.0028
Old-age Pension	0.68	0.78	0.80	0.84	0.0682
Work Disability Pension	0.67	0.88	0.99	0.98	0.0150
All Labor Market Programs	1.82	1.56	1.34	1.38	-0.1611
Civilian and Veteran Unemployment Benefits	1.82	1.56	1.34	1.38	-0.1611
All Social Assistance	1.05	0.92	0.92	0.90	0.0402
Veteran: Military Invalids' and Survivor Benefits	0.70	0.75	0.81	0.81	0.1073
Civilian: Child Protection Allowance	1.78	1.35	1.18	1.10	-0.0878
Civilian: CSW Benefits incl. SA, NWI, CVW	2.13	1.37	1.19	1.15	-0.1827

Notes:
CGH indicators compare the portion of the transfer budget received by a population quintile divided by the portion of population in that quintile.
Larger numbers indicate that a program is more progressive.
A program with even targeting (where every individual received the same transfer) would have CGH indicators of 1.0.
Sample of households with positive per capita transfer. The indicator is calculated across this sample, setting as expansion factor the household expansion factor multiplied by the household size.
The concentration index indicates how unequally transfers are distributed; it is the area between the concentration curve of a transfer and the diagonal among which everyone receives the same amount.

Table AA. 18: Transfer Duplication in Each Population Group (%)

	Total	Quintiles of Consumption					Poverty Status		Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FbiH	RS	Brcko
Number of Transfers Received by a Household													
0	58.2	52.5	54.9	57.9	58.6	67.0	52.6	59.4	57.0	59.0	58.7	56.6	69.5
1	37.1	41.7	40.3	37.2	37.4	29.2	41.5	36.2	39.2	35.9	35.7	40.3	28.7
2	4.3	5.6	4.7	4.4	3.6	3.4	5.6	4.0	3.6	4.8	5.1	3.0	1.7
3	0.3	0.2	0.2	0.4	0.4	0.2	0.2	0.3	0.2	0.3	0.4	0.1	0.0
4 or more	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.1*	*0.0*	*0.1*	*0.1*	*0.0*	*0.1*	*0.0*	*0.0*

Notes:
Share of population participating in social programs by population group.
Households are weighted using household weights multiplied by the household size.

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Table AA. 19: Social Program Overlap (%)

Beneficiaries of program listed in this row that also receive program listed in column:	BFT_SP	BFT_SI	BFT1	BFT3	BFT4	BFT5	BFT_LM	BFT8	BFT_SA	BFT2	BFT6	BFT7
BFT_SP: All social protection	100	81	4	23	42	16	4	4	25	13	9	4
BFT_SI: All social insurance	100	100	5	29	53	20	1	1	11	6	4	2
BFT1: Veterans' Pensions	100	100	100	14	13	8	2	2	15	9	8	0
BFT3: Family survivor pension	100	100	2	100	4	5	0	0	14	8	6	1
BFT4: Old-age pension	100	100	1	2	100	5	1	1	7	4	2	2
BFT5: Work disability pension	100	100	2	8	13	100	0	0	12	6	5	3
BFT_LM: All labor market programs	100	13	2	2	9	2	100	100	19	8	4	7
BFT8: Civilian and veteran unemployment benefits	100	13	2	2	9	2	100	100	19	8	4	7
BFT_SA: All social assistance	100	34	2	13	12	8	3	3	100	52	38	18
BFT2: Veteran: Military Invalids' and Survivor Benefits	100	36	3	15	12	7	3	3	100	100	9	3
BFT6: Civilian: Child Protection Allowance	100	33	3	15	9	8	2	2	100	13	100	5
BFT7: Civilian: CSW benefits incl. SA, NWI, CVW	100	35	0	8	20	10	7	7	100	9	10	100

Notes:

BFT = Benefit.
LM = Labor market.
SP = Social protection.

Share of households that had received other programs. Specifically, overlap is: Number of households receiving transfer from program X given that they have received transfers from program Y. Households are weighted using household weights multiplied by the household size.

Table AA. 20: Social Program Overlap, by Income Quintile (%)

			Quintiles of Consumption				Poverty Status		Area of Residence		Regions		
	Total	Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBH	RS	Brcko
Percent of Households that Received:													
No transfer	50.3	42.3	47.3	49.4	51.7	60.7	42.2	52.1	50.0	50.5	52.2	47.2	38.7
Only social insurance programs	35.6	39.6	38.6	35.9	35.8	28.3	39.1	34.9	37.3	34.5	34.9	37.9	22.1
Only labor market programs	1.5	2.8	2.0	0.7	0.8	1.0	2.8	1.2	0.9	1.9	2.2	0.1	0.0
Only social assistance programs	7.9	10.3	7.6	8.5	6.9	6.3	10.5	7.3	7.0	8.5	6.4	9.4	30.8
Only social insurance and labor programs	0.2	0.2	0.2	0.3	0.0	0.2	0.2	0.2	0.2	0.2	0.3	0.0	0.0
Social assistance and other programs	4.5	4.9	4.4	5.1	4.7	3.4	5.2	4.3	4.6	4.4	3.9	5.4	8.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Social assistance and other programs = (SA+SI) + (SA+LM) + (SA+LM+SI).

Figure AA. 1: Lorenz Curves and Venn Diagrams

Note: Tables AA.21–AA.24 are based on pre-transfer benefit incidence analyses, and the results are based on consumption counterfactual equal to (consumption - transfers) (expressed in per-adult equivalent).

Table AA. 21: Coverage (Based on pre-transfer welfare)

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption, Net of each Social Protection Transfer					Poverty Status		Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBiH	RS	Brcko
All Social Protection	49.7	76.4	55.6	44.2	41.2	31.1	71.7	41.5	50.0	49.5	47.8	52.8	61.3
All Social Insurance	40.0	65.1	44.1	35.1	31.8	24.1	60.6	32.9	42.1	38.7	38.6	43.3	30.1
Veterans' Pensions	1.9	2.4	2.2	1.8	1.6	1.4	2.6	1.7	1.8	1.9	2.1	1.4	2.2
Family Survivor Pension	11.7	22.0	10.7	9.7	9.5	6.4	21.9	9.1	10.9	12.1	11.2	12.9	5.3
Old-age Pension	21.0	38.1	23.6	17.3	14.9	11.2	37.1	16.4	23.6	19.4	20.3	22.5	18.8
Work Disability Pension	8.2	14.7	8.6	6.4	6.2	5.1	14.9	6.6	8.6	8.0	7.6	9.5	5.3
All Labor Market Programs	2.0	3.8	2.5	1.4	1.0	1.4	3.9	1.6	1.2	2.6	3.1	0.1	0.4
Civilian and Veteran Unemployment Benefits	2.0	3.8	2.5	1.4	1.0	1.4	3.9	1.6	1.2	2.6	3.1	0.1	0.4
All Social Assistance	12.4	20.0	13.0	11.3	9.2	8.6	20.2	10.6	11.6	12.9	10.4	14.7	39.2
Veteran: Military Invalids' and Survivor Benefits	6.5	9.2	6.4	6.3	5.0	5.5	9.4	5.8	5.7	7.0	5.8	7.8	4.7
Civilian: Child Protection Allowance	4.7	8.2	4.5	4.1	3.9	2.9	8.2	3.9	4.8	4.6	2.9	6.3	34.3
Civilian: CSW Benefits incl. SA, NWI, CVW	2.2	4.5	2.8	2.0	0.9	0.8	4.5	1.7	2.2	2.2	2.4	1.8	4.6

Notes:
Program coverage is the portion of population in each group that receives the transfer.
Specifically, coverage is: (Number of individuals in the group who live in a household where at least one member receives the transfer)/(Number of individuals in the group).
Program coverage is calculated setting as expansion factor the household expansion factor multiplied by the household size.
Tables are produced using pre-transfer welfare, where pre-transfer level is defined as per capita consumption net of EACH social protection transfers.

Table AA. 22: Distribution of Beneficiaries (Based on pre-transfer welfare)

Direct and Indirect Beneficiaries

	Total	Quintiles of Consumption, Net of each Social Protection Transfer					Poverty Status		Area of Residence		Regions		
		Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBiH	RS	Brcko
All Social Protection	100.0	30.7	22.4	17.8	16.6	12.5	39.1	60.9	39.4	60.6	61.7	35.9	2.4
All Social Insurance	100.0	32.5	22.1	17.5	15.9	12.0	39.1	60.9	41.2	58.8	61.9	36.6	1.5
Veterans' Pensions	100.0	25.4	23.0	19.4	16.9	15.4	25.4	74.6	38.3	61.7	72.3	25.5	2.2
Family Survivor Pension	100.0	37.7	18.4	16.6	16.3	10.9	37.8	62.2	36.6	63.4	61.6	37.6	0.9
Old-age Pension	100.0	36.2	22.5	16.5	14.2	10.7	39.7	60.3	44.0	56.0	62.1	36.2	1.7
Work Disability Pension	100.0	35.9	21.0	15.5	15.1	12.5	35.3	64.7	40.9	59.1	59.5	39.2	1.3
All Labor Market Programs	100.0	37.0	25.1	13.9	9.8	14.2	35.1	64.9	23.2	76.8	97.6	2.0	0.3
Civilian and Veteran Unemployment Benefits	100.0	37.0	25.1	13.9	9.8	14.2	35.1	64.9	23.2	76.8	97.6	2.0	0.3
All Social Assistance	100.0	32.2	21.0	18.2	14.9	13.8	31.3	68.7	36.6	63.4	53.7	40.2	6.2
Veteran: Military Invalids' and Survivor Benefits	100.0	28.5	19.7	19.6	15.4	16.8	27.3	72.7	34.3	65.7	57.8	40.7	1.4
Civilian: Child Protection Allowance	100.0	34.8	19.0	17.6	16.4	12.2	32.2	67.8	40.0	60.0	40.3	45.5	14.2
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	40.7	25.6	18.5	7.9	7.3	37.5	62.5	39.6	60.4	69.1	26.8	4.0

Notes:
Beneficiaries' incidence shows the proportion of beneficiaries in each group.
Specifically, beneficiaries' incidence is: (Number of individuals in the group who live in a household where at least one member receives the transfer)/(Total number of direct and indirect beneficiaries).
Beneficiaries' incidence is calculated setting as expansion factor the household expansion factor multiplied by the household size.
Tables are produced using pre-transfer welfare, where pre-transfer level is defined as per capita consumption net of EACH social protection transfers.

Table AA. 23: Distribution of Benefits (Targeting Accuracy) (Based on pre-transfer welfare)

	Total		Quintiles of Consumption, Net of each Social Protection Transfer			
		Q1	Q2	Q3	Q4	Q5
All Social Protection	100.0	44.6	21.1	13.4	11.7	9.1
All Social Insurance	100.0	44.4	21.6	13.6	11.5	8.9
Veterans' Pensions	100.0	51.2	18.7	11.6	11.4	7.0
Family Survivor Pension	100.0	34.3	25.5	15.6	14.8	9.8
Old-age Pension	100.0	47.5	20.7	12.8	10.5	8.4
Work Disability Pension	100.0	47.1	19.4	13.5	10.3	9.7
All Labor Market Programs	100.0	28.8	27.4	19.6	10.5	13.6
Civilian and Veteran Unemployment Benefits	100.0	28.8	27.4	19.6	10.5	13.6
All Social Assistance	100.0	47.0	17.5	12.0	13.4	10.1
Veteran: Military Invalids' and Survivor Benefits	100.0	47.8	16.9	11.4	13.9	10.0
Civilian: Child Protection Allowance	100.0	35.0	17.7	17.8	15.5	14.1
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	56.1	20.3	9.1	8.1	6.5

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Table AA. 24: Distribution of Benefits (Targeting Accuracy)

(Based on pre-transfer welfare)

		Quintiles of Consumption, Net of each Social Protection Transfer					Poverty Status		Area of Residence		Regions		
	Total	Q1	Q2	Q3	Q4	Q5	MP	NP	Urban	Rural	FBiH	RS	Brcko
All Social Protection	100.0	34.8	21.4	16.0	15.2	12.7	42.5	57.5	47.4	52.6	66.4	31.7	1.8
All Social Insurance	100.0	36.1	20.6	16.1	14.9	12.4	42.0	58.0	48.8	51.2	66.7	31.9	1.4
Veterans' Pensions	100.0	27.6	22.3	19.9	17.6	12.7	27.6	72.4	40.5	59.5	72.1	25.8	2.1
Family Survivor Pension	100.0	38.3	19.0	15.3	16.5	10.8	38.5	61.5	41.6	58.4	69.0	30.2	0.8
Old-age Pension	100.0	39.2	20.8	14.7	14.1	11.2	42.1	57.9	52.5	47.5	66.5	31.9	1.6
Work Disability Pension	100.0	38.6	19.4	15.2	12.8	14.0	37.9	62.1	47.5	52.5	63.1	35.8	1.1
All Labor Market Programs	100.0	36.8	24.7	13.6	9.4	15.5	34.6	65.4	32.6	67.4	96.1	3.2	0.7
Civilian and Veteran Unemployment Benefits	100.0	36.8	24.7	13.6	9.4	15.5	34.6	65.4	32.6	67.4	96.1	3.2	0.7
All Social Assistance	100.0	32.9	23.0	14.3	12.4	17.5	32.2	67.8	39.1	60.9	62.9	32.4	4.7
Veteran: Military Invalids' and Survivor Benefits	100.0	32.2	22.2	13.9	12.1	19.5	31.2	68.8	37.4	62.6	65.7	33.7	0.6
Civilian: Child Protection Allowance	100.0	32.0	19.6	16.9	17.8	13.8	30.4	69.6	42.4	57.6	40.8	36.7	22.5
Civilian: CSW Benefits incl. SA, NWI, CVW	100.0	35.7	30.8	17.5	5.6	10.3	34.8	65.2	44.2	55.8	76.5	18.6	4.9

Notes:
Benefits' incidence is the transfer amount received by the group as a percent of total transfers received by the population.
Specifically, benefits' incidence is: (Sum of all transfers received by all individuals in the group)/(Sum of all transfers received by all individuals in the population).
Aggregated transfer amounts are estimated using household-size-weighted expansion factors.

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ANNEX B: SPENDING ON NON-INSURANCE SOCIAL PROTECTION CASH TRANSFERS

In millions of KM

	2005	2006	2007	2008[a]	Ministry[b]	Type[c]
Federation of BH						
Veteran-related benefits						
Mil. invalids' allowance	151	151	172.3	113.9	*Veterans*	R
Survivor dependents' benefit	150	150	152.8	221.2	*Veterans*	R
Demob. soldiers' allowance	0	0	60.7	0[d]	*Labor/Cantons*[e]	R
Medal holders' allowance	0	17	17	19	*Veterans*	R
Miscellaneous	0	4.5	0	2.5	*Veterans*	R
Total	301	322.5	402.8	356.6		
Civilian benefits						
Social assistance	33.8	31.9	24.7	39.3	*Cantons*	M
Child benefits	30.8	33.1	35.8	41.9	*Cantons*	M
Non-war invalids	0	30	124.8	157.7	*Labor*	R
Civilian victims of war	0	9	42.3	40	*Labor*	R
Miscellaneous	0	25	0	0	*Labor*	
Total	64.6	129	227.6	278.9		
Grand Total for FBH	**365.6**	**451.5**	**630.4**	**635.5**		

	2005	2006	2007	2008	Ministry	Type
Republika Srpska						
Veteran-related benefits						
Mil. invalids' and survivor benefit	106.6	112.5	130	127	*Veterans*	R
Special supplement	0	0	10	12	*Veterans*	R
Medal holders' allowance	0	0	0.4	1.9	*Veterans*	R
Miscellaneous	5.5	5.3	4.8	3.3	*Veterans*	
Total	112.1	117.8	145.2	144.2		
Civilian benefits						
Social assistance	10.4	10	7.5	8	*Welfare/Municipality*	M
Child benefits	25.1	37.5	38.4	39.5	*Welfare/Fund*[f]	M
Miscellaneous	0	1.5	0	0	*Welfare*	
Total	35.5	49	45.9	47.5		
Grand Total for RS	**147.6**	**166.8**	**191.1**	**191.7**		

a. 2008 data refer to the planned/budgeted amounts. Data for all other years refer to the amounts executed.

b. Relevant Institutions: Ministry of Labor and Social Policy (FBH), Ministry of Labor and Veterans' Affairs (RS), Ministry of Veterans' Affairs (FBH), and Ministry of Health and Social Welfare (RS).

c. Type: Right-based benefit (R), Means-tested benefit (M).

d. While FBH Budget makes no reference to this line item, it has been estimated that KM170 million would be needed to finance obligations created by the relevant law that introduced this benefit in 2006.

e. This item has been jointly financed by FBH Government and FBH and Cantonal extra-budgetary Employment Funds.

f. This item has been jointly financed by the extra-budgetary Child Protection Fund with supports from RS Government.

ANNEX C: DETAILS OF THE SOCIAL PACT IN
THE FEDERATION OF BOSNIA AND HERZEGOVINA (FBH)

The FBH Government has recently taken several important steps toward rationalizing its safety net, with the announcement of the "Social Pact," which essentially sets out a commitment by key stakeholders to push for reforms to rationalize the safety net on a number of different fronts, including improved targeting, fiscal restraints, improved registries, oversight and controls, improvements to the Medical Examinations Institute (responsible for overseeing certification for disability benefits), and so forth. Specifically, the Social Pact makes a political commitment on a number of areas including:

- Section IV: Social partners (institutions listed above), are committed to adjusting the budget spending for social protection of **invalids and civil victims of war**, with **realistic financial possibilities** (meaning available resources). In this regard, social partners support reforms in this sector that will ensure that the protection is primarily **targeted to lower-income beneficiaries**. Misuse of these benefits should be prevented by strengthening supervision.

- Section V: Regarding **veterans and war invalids**, social partners confirm their commitment that this protection be organized in accordance with a **unified set of regulation** (war invalids, demobilized soldiers, medal holders) and **improved targeting** toward beneficiaries in the need. Budget spending for these purposes should be adjusted to **financial possibilities**.

- Section VI: Social partners support ongoing **reforms of the pension and invalid insurance** that will ensure compliance with European Union standards. It is necessary to widen the scope of the insurance coverage to include categories that were left out heretofore (farmers, and so forth). Favorable conditions for obtaining pensions should be used very carefully and in accordance with available resources.

- Section VII: **Employment**—social partners agree to support employment in the production sector, of invalids, older individuals, and other hard-to-employ groups. Job brokerage services should include private service providers.

While the social pact has no legal standing, it is an important political commitment—on the part of a range of stakeholders—to a much-needed course of reforms. Another measure, the draft Social Protection Law in the Federation, which is in the final stages of approval, also formalizes the introduction of targeting for disabilities and other measures.

ANNEX D: DATA DESCRIPTION AND PAST PROXY-MEANS-TESTING (PMT) MODELS

Data Description

The Household Budget Survey (HBS) was designed to be representative of both the national and the entity level and the urban/rural dimensions. For the 2007 HBS, data collection lasted all year, divided into 12 monthly samples. A total of 9,019 households were interviewed of which 7,468 completed interviews were retained. The survey instruments included: a diary of purchases (with a 14-day recording period); a self-consumption booklet (products produced and consumed by the household); and a final interview, covering topics such as non-food expenditure, socioeconomic and demographic characteristics of household members, ownership of durable goods, and housing. Data collection consisted of three visits by enumerators to each household: the first, at the beginning of the reference period, to deliver the diary; the second, at some point in the middle of the reference period, to ensure that the procedure was understood and carried out; and the third, at the end of the reference period, to conduct the final interview. A monthly list of households was provided to each enumerator.

The 2007 HBS was the second HBS conducted in Bosnia and Herzegovina (BH) following the 2004 HBS. Prior to 2004, the main source of information on household living standards was a national survey conducted in 1997 (Bisogno and Chong 2001) and the 2001 Living Standards Measurement Survey (LSMS). Three more waves of the LSMS were conducted each year after 2001, though only the 2004 wave included a consumption module. Thus, the first HBS was conducted just as the panel LSMS was winding down. A new round of the HBS was conducted in 2007.

Past PMT Models

The four previous documented efforts to calibrate proxy means-testing included Bisogno and Chong (2001), Braithwaite (2003), Schreiner and others (2004), and CEPOS (2006). Though they each had specific objectives—for example, Bisogno and Chong (2001) were interested in designing a more efficient use of foreign-aid programs flowing into BH in the late 1990s following the 1995 Dayton Peace Agreement, while CEPOS (2006) was exploring alternative means of alleviating the poverty and social consequences of the introduction of the value-added tax (VAT) in 2005—these calibration exercises were all an effort to identify a limited set of variables that: (a) can be easily measured and verified, and (b) can be used to predict per capita consumption with a reasonable degree of accuracy. These variables, in turn, could, in principle, be used to improve the targeting of social assistance.

These BH calibration exercises used various household survey data available at the time the exercise was conducted: Bisogno and Chong (2001) used a national "vulnerability survey"[13] of about 7,000 households conducted in 1997, Braithwaite (2003) used the 2001 LSMS covering some 5,400 households; and CEPOS (2006) used data from the 2004 LSMS on some 3,000 households. Following the literature on proxy means-testing (PMT), exercises invariably identified a set of variables related to the following: demographic characteristics, educational

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[13] The survey is otherwise known as the Food Security Assessment Vulnerability Survey.

attainment, and labor market activities of members of the household; housing characteristics; and ownership of selected durable goods (for example, cars).

The choice of variables was also determined by the availability of relevant information in a given household survey. The agriculture module in the LSMS, for example, allowed the use of variables related to livestock ownership in Braithwaite (2003) and CEPOS (2006). Bisogno and Chong (2001), on the other hand, made substantial use of war-related variables (for example, whether the household lost any of its possessions during the war), while Braithwaite (2003) had one war-related variable. Braithwaite (2003) also used information on receipt of disability, survivors, and war veterans pension, and on the geographic location of the respondent's birthplace.

Though none of these PMT models were subsequently made operational, though they were based on household surveys that are different from the survey used in this note, their key results nonetheless provide a useful benchmark.

ANNEX E: ANALYSIS OF THE UNDERESTIMATION OF INCOME

Income reported in the Household Budget Survey (HBS) data is greatly underestimated compared to reported consumption, which is the best approximation of the theoretical concept of "permanent income." We thoroughly looked at the following aspects of income to determine whether the income data were underreported:

- Non-response by quintile and income source
- Median and means by quintile and by income source
- Income source by type of profession, sector of employment, and type of contract.

The most telling indicator seems to be the ratio of income to consumption—if we think of consumption as a reflection of the true welfare of the household and want to estimate whether income is underreported.

We found that public sector employees and permanent contract employees tend to have a higher total income-to-consumption ratio (Table AE.1). Public sector incomes are more regular and more easily verifiable and thus more easily recalled and reported to the HBS enumerator. Some other results remain unclear. For instance, the ratio of salary income for private sector employees is slightly higher than for public sector employees, which could reflect better wages, not necessarily better income reporting to the HBS enumerators. Overall, the quality of the income data is poor.

Table AE. 1: Income/Consumption Ratio in 2007 HBS Data

Quintile	
1	0.43
2	0.36
3	0.33
4	0.31
5	0.27
Professional Status	
Employer	0.35
Self-employed	0.27
Employee	0.34
Unpaid worker	0.27
Apprentice	0.19
Other	0.28
Type of Work Contract or Activity	
Permanent	0.35
Temporary with contract	0.30
Temporary no contract	0.30
Payment	0.27
Seasonal	0.26
n.a. (Not available)	0.27
Sector	
Public sector	0.34
Private sector	0.32
Mixed ownership	0.34
NGO	0.35
Total	**0.33**

Looking at the household response rates to a yes/no question of "does your household receive income/pension/benefit" also points out the poor quality of income data. Over 90 percent of households reported not receiving any income during the last 12 months from the following sources: income from own company, property income, and remittances (Table AE.2). Only 56 percent of households reported receiving salaries at local employers in the last 12 months. On average, less than 10 percent of all households reported receiving social insurance or social protection transfers such as war veteran pensions, war disability pensions, work-related disability pensions, pensions from abroad, child benefits, benefits from the Center for Social Work, allowances, and unemployment benefits.

Table AE. 2: Percent of Households Reporting NO to Receiving Income/Pension/Benefit	
Income from (full- and part-time) employment:	
Salaries of employees at local employers	44%
Meal allowance and transport to and from work at local employers	84%
Salaries of the employees at foreign employers (international employers)	98%
Allowance for living in other town and fees for management board members	100%
Other income from employment (leave pay, bonuses, severance)	94%
Income from own company, craft, agricultural holdings	67%
Property income:	
Interest from savings and dividends	100%
Rents from renting land	100%
Rents from renting residential premises	99%
Rents from renting business premises, garages, etc.	100%
Rents from renting equipment, cattle, etc.	100%
Remittances and receipts from abroad (except pensions)	94%
Receipts in cash from relatives, friends, etc., in-country	95%
Pension and social transfers:	
War veterans pensions	99%
War disability pensions	92%
Survivor pensions	87%
Old-age pensions	77%
Work-related disability pensions	90%
Pensions from abroad	97%
Child benefits	94%
Benefits received from the Center for Social Work	98%
Allowances (temporary and permanent)	100%
Unemployment benefits	100%

Source: Authors' calculations using the 2007 HBS data.

Table AF. 1: Baseline Model

Stepwise regression Results
(Dependent variable: natural log of per capita consumption)

	2004 Baseline All HH	2004 Poorest 50%	2004 Poorest 40%	2007 Baseline All HH	2007 poorest 50%	2007 poorest 40%
Household Characteristics						
# of household members	-0.23***	-0.11***	-0.10***	-0.17***	-0.10***	-0.08***
	-39.99	-19.75	-17.74	-26.51	-14.96	-14.21
# of children under 14				0.10***	0.06***	0.05***
				-10.06	-6.91	-6.73
# of children, 14-24				0.03***	0.02***	
				-2.94	-2.61	
# of elderly 65+	0.03***					
	-2.66					
household head with postgrad education	0.14***			0.13***	0.09***	0.08***
	-5.43			-5.8	-3.06	-2.6
household with female head	0.09***					
	-5.84					
# of employed members	0.08***	0.06***	0.06***	0.09***	0.06***	0.05***
	-8.49	-7.51	-6.43	-11.6	-7.66	-6.31
Housing Characteristics (dummy variables)						
hot water	0.10***					
	-4.92					
central heating	-0.10***	-0.24***	-0.26***			
	-2.92	-4.91	-6.42			
self-provided heating		-0.18***	-0.20***			
		-3.73	-4.93			
single equipment heating		-0.21***	-0.23***	-0.07***		
		-4.99	-8.71	-4.67		
garage	0.06***					
	-3.98					
balcony	0.05***	0.04***				
	-3.65	-2.98				
garden	0.07***			0.05***	0.06***	0.05***
	-4.2			-3.81	-5.17	-4.16
kitchen		0.04***	0.05***			
		-2.82	-3.01			
attic				-0.04***		
				-2.96		

(Table AF.1 continued)

Ownership of Durables (dummy variables)

video recorder	0.07*** -4.58					
car	0.23*** -15.12	0.16*** -11.8	0.14*** -10.46	0.26*** -20.42	0.12*** -10.45	0.10*** -7.84
refrigerator	0.10*** -2.92	0.10*** -3.6	0.09*** -2.98		0.09*** -2.64	0.09*** -2.77
computer	0.13*** -6.53			0.08*** -5.17		
phone	0.05*** -3.04		0.05*** -3.22	0.12*** -8.3	0.11*** -8.19	0.11*** -8.39
dish washer	0.21*** -7.39			0.15*** -8.15		
vacuum cleaner	0.07*** -3.88			0.07*** -3.18		0.07*** -3.9
firewood & coal stove	-0.11*** -4.17					
sewing machine	0.10*** -6.17	0.07*** -4.4	0.05*** -2.79	0.07*** -4.86	0.07*** -5.24	0.05*** -3.68
mobile phone	0.15*** -10.46	0.08*** -6.01	0.07*** -4.75	0.19*** -13.99	0.11*** -8.19	0.11*** -8.09
washer		0.06*** -3.76	0.07*** -4.34	0.12*** -6.45	0.08*** -5.39	
HI-FI systems				0.19*** -5.05		
satellite dish				0.06*** -3.92		
electric & gas cookers				0.10*** -5.09	0.08*** -4.01	0.08*** -3.9
secondary home	0.21*** -6.87	0.14*** -3.09				

Location (dummy variable)

Republika Srpska	-0.11*** -4.56	-0.08*** -2.96	-0.11*** -4.06			0.04*** -2.94
FBiH	-0.13*** -6.38	-0.11*** -4.35	-0.14*** -5.34			

Affordability of selected expenditures

log of utility expenditures	0.20*** -20.16	0.11*** -11.4	0.09*** -9.46	0.31*** -29.12	0.21*** -20.37	0.21*** -18.67

Income Source (dummy variable)

receives pension income	0.04*** -3.06	0.07*** -5.16	0.06*** -4.54	0.05*** -4.69	0.05*** -4.81	0.04*** -4.14
Constant	5.22*** -85.72	5.25*** -86.5	5.27*** -108.92	4.63*** -78.56	4.71*** -77.16	4.62*** -71.64
Observations	7220	3173	2486	7440	3686	2950
R-squared	0.5	0.3	0.29	0.5	0.34	0.33

Robust t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table AF. 2: Entity-level Models

Stepwise Regression Results by Entity
(Dependent variable: Natural log of per-adult-equivalent consumption)

	FBH	RS	Total BIH
Household Characteristics			
Number of household members	-0.27***	-0.26***	-0.27***
	[0.01]	[0.01]	[0.01]
Number of children under 14	0.05***	0.05***	0.05***
	[0.01]	[0.02]	[0.01]
Number of children, 14–24	0.06***	0.05***	0.05***
	[0.01]	[0.02]	[0.01]
Head of household: female	0.10***		0.08***
	[0.02]		[0.02]
Head of household: has postgrad education	0.17***	0.12***	0.14***
	[0.03]	[0.04]	[0.02]
Head of household: employed		-0.07***	-0.04***
		[0.02]	[0.02]
Number of employed members	0.09***	0.07***	0.08***
	[0.01]	[0.01]	[0.01]
Housing Characteristics (dummy variables)			
Dwelling has sanitary connection	0.22***		0.11***
	[0.05]		[0.03]
Dwelling has central heating	-0.14***		-0.08***
	[0.03]		[0.03]
Dwelling uses single equipment heating		-0.21***	-0.08***
		[0.04]	[0.02]
Dwelling has a heating source	0.10***	-0.09***	
	[0.02]	[0.03]	
Indoor toilet and bathroom	0.10***		0.09***
	[0.02]		[0.02]
Dwelling has a garage			0.03***
			[0.01]
Dwelling has a balcony	0.09***	0.06***	0.06***
	[0.02]	[0.02]	[0.01]
Multifamily residential building		-0.08***	
		[0.03]	
Age of the dwelling	0.00***		0.00***
	[0.00]		[0.00]
Secondary home	0.20***	0.28***	0.22***
	[0.03]	[0.07]	[0.03]
Ownership of Durables (dummy variables)			
Phone	0.09***	0.13***	0.10***
	[0.02]	[0.02]	[0.01]
Washer	0.15***	0.17***	0.12***

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	(1)	(2)	(3)
	[0.03]	[0.03]	[0.02]
Vacuum cleaner			0.07***
			[0.02]
Satellite dish			0.05***
			[0.02]
Sewing machine	0.09***		0.07***
	[0.02]		[0.01]
Computer		0.10***	0.06***
		[0.03]	[0.02]
Car	0.26***	0.28***	0.25***
	[0.02]	[0.02]	[0.01]
Electric and gas cookers		0.15***	0.09***
		[0.03]	[0.02]
Firewood and coal stove	-0.08***		-0.07***
	[0.03]		[0.02]
Dishwasher	0.20***	0.17***	0.18***
	[0.02]	[0.04]	[0.02]
Video recorder	0.09***		0.07***
	[0.02]		[0.01]
HI-FI systems		0.07***	
		[0.02]	
Mobile phone	0.09***	0.13***	0.11***
	[0.02]	[0.02]	[0.02]
Affordability of Selected Expenditures			
Log of utility expenses	0.20***	0.16***	0.18***
	[0.01]	[0.01]	[0.01]
Income Source (dummy variable)			
Receives pension income	0.06***		0.04***
	[0.02]		[0.01]
Constant	5.09***	5.55***	5.28***
	[0.07]	[0.08]	[0.05]
Observations	4491	2602	7435
R-squared	0.52	0.5	0.51

Robust standard errors in brackets
* Significant at 10%; ** Significant at 5%;
*** Significant at 1%

Table AF. 3: PMT Regression by Urban and Rural Areas

Dependent Variable	PMT Urban	PMT Rural
Number of household members	-0.20***	-0.15***
	[0.01]	[0.01]
Number of children under 14	0.11***	0.06***
	[0.01]	[0.01]
Number of children, 14-24		
Number of elderly 65+		
Head of Household: female		
Head of Household: has postgrad education	0.15***	0.14***
	[0.03]	[0.05]
Head of Household: employed		
Head of Household: unemployed		
Number of employed members	0.09***	0.06***
	[0.01]	[0.01]
Employed spouse		
Dwelling has sanitary connection		0.10***
		[0.03]
Dwelling has central heating	-0.09***	
	[0.03]	
Dwelling uses self-provided heating		
Dwelling uses single equipment heating		-0.10***
		[0.03]
Dwelling has hot water		
Dwelling has a heating source	0.10***	
	[0.02]	
Dwelling has a kitchen		
Dwelling has a boiler		
Indoor toilet and bathroom		0.09***
		[0.02]
Dwelling has a garage		
Dwelling has an attic		
Dwelling has a balcony	0.08***	0.06***
	[0.02]	[0.02]
Dwelling has a garden		
Multifamily residential building		
Age of the dwelling		
Primary home		
Secondary home	0.18***	0.32***
	[0.03]	[0.05]
Dwelling is rented		
Refrigerator		
Phone	0.11***	0.12***
	[0.02]	[0.02]
Washer	0.17***	0.14***
	[0.04]	[0.02]
Vacuum cleaner		0.09***
		[0.02]

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Satelite dish		
Sewing machine	0.09***	0.05***
	[0.02]	[0.02]
Computer	0.11***	0.07***
	[0.02]	[0.02]
Car	0.25***	0.29***
	[0.02]	[0.02]
Electric & gas cookers		0.09***
		[0.02]
Firewood & coal stove		
Dish washer	0.21***	0.16***
	[0.03]	[0.03]
Video recorder		
HI-FI systems	0.23***	0.11***
	[0.06]	[0.04]
Mobile phone	0.17***	0.17***
	[0.02]	[0.02]
FBiH	0.06***	
	[0.02]	
Republika Srpska		
Rural area (dummy)		
Log of utility expenses	0.21***	0.19***
	[0.01]	[0.01]
Receives pension income		0.05***
		[0.01]
Constant	5.39***	5.25***
	[0.08]	[0.05]
Observations	3096	4339
R-squared	0.458	0.46

Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.1

ANNEX G: NUMBER OF BENEFICIARIES AND AVERAGE BENEFIT LEVELS IN FBH – ADMINISTRATIVE AND HBS DATA

The main difference between the Household Budget Survey (HBS) data results and the administrative data results stems from the different definitions of the benefit programs used in the survey. Thus, the HBS questionnaire defined the categories of benefit programs in a way that was much more aggregated and did not reflect the full plethora of benefits that is captured in the administrative data for FBH. Conversely, the only exception to this had been the Child Protection Allowance, and this has meant that both the HBS estimate and the administrative data are almost the same. Therefore, had the questionnaire included the disaggregated categories of different benefit types, it is reasonable to assume that any differences between the HBS and administrative data on these counts would have been minor. For the purposes of illustration, Table AG.1 indicates discrepancies between HBS definitions of benefit types and the actual benefit names.

Table AG. 1: Comparison of HBS Estimates and Administrative Data on Actual Beneficiaries

	Administrative	HBS 2007
Number of Beneficiaries		
Veteran: Military Invalids' and Survivor Benefits	243,703	129,253
Civilian: Child Protection Allowance	72,782	65,087
Civilian: CSW benefits incl. SA, NWI, CVW	181,731	52,583
Average Transfer Value		
Veteran: Military Invalids' and Survivor Benefits	263	115
Civilian: Child Protection Allowance	70	33
Civilian: CSW benefits incl. SA, NWI, CVW	180	56

CSW = Center for Social Work.
CVW = Civilian Victims of War.
NWI = Non-War Invalids' Benefit.
SA = Social Assistance.

Table AG. 2: Comparison of HBS Questionnaire Definitions and the Actual Benefit Titles

Current HBS Code	HBS Names in Bosnian	HBS Translation	Actual Benefit Titles
6.1	Boračke penzije	War veterans pensions	Veterans' Pensions
6.2	Ratne invalidnine	War disability pensions	Veteran: Military Invalids' and Survivor Dependent Benefits
6.3	Porodične penzije	Survivor pensions	Family survivor pension
6.4	Starosne penzije	Old-age pensions	Old-age pensions
6.5	Invalidske penzije	Work-related disability pensions	Work disability pension
6.6	Penzije iz inostranstva	Pensions from abroad	Same
6.7	Dječiji dodaci (uključujući porodiljske naknade i dopuste i dječije pakete)	Child benefits (including newborn baby packages, maternity leave, and arrears)	Civilian: Child Protection Allowance
6.8	Naknade primljene od Centara za socijalni rad	Benefits received from Center of Social Work	CSW benefits incl. SA, NWI, CVW
6.9	Dodaci (za napredovanje u poslu, privremeni i trajni)	Allowances (careers, temporary and permanent)	Social Assistance
6.10	Naknade za nezaposlene	Unemployment benefits	Veteran and Civilian Benefits

CVW = Civilian Victims of War.
NWI = Non-War Invalids' Benefit.
SA = Social Assistance.

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