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Evaluating Social Protection Programs in Tajikistan

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Hyun H. Son

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Abstract

Following independence from the former Soviet Union, Tajikistan inherited an extensive social protection system that included a range of cash and noncash benefits. While the economy is well into its transition from a centrally planned to a market-oriented economy, its social welfare policies still adhere to the methods and approaches of the Soviet period. This is true for social protection, which has both social insurance and social assistance components, and for which benefits are effectively noncontributory in nature in that no contributions are collected from employees. In this paper, we examine the performance of the country's social protection system—essentially public transfers for the elderly and disabled—in terms of reducing poverty, with the aim of identifying its key problems. Since the government provides such public transfers mainly as pensions (i.e., old-age pension, disabled pension, and survivors pension), it merits an in-depth analysis of whether or not these transfer programs reach the intended beneficiaries; that is, how well do they target the intended beneficiaries? Using data from the Living Standards Measurement Survey conducted in 2007, the study finds that only 43% of poor households are receiving transfers from the government, while 33% of nonpoor households receive transfers. This study argues for applying a targeted approach to public transfer programs, including noncontributory pension schemes aimed at the most vulnerable populations.

I. Introduction

It is commonly perceived that transitional economies have inherited a broad range of public programs, policies, and services addressing a wide variety of social needs. But by and large, these mechanisms have proved to be ill-suited to the needs of a market economy and incapable of addressing the social risks that have emerged during the transition period. In a similar vein, transitional economies face significant challenges in transforming inherited social protection programs to the realities of a market economy.

While many countries prefer benefit structures similar to those of the Organisation for Economic Co-operation and Development (OECD) countries, these may not necessarily be the most appropriate models for economies in transition. The social risks in transition economies are significantly different from those of developed market economies and nontransition developing countries alike. Moreover, cultural and economic differences between transition economies and OECD countries, and even between transition economies themselves, militate against a one-size-fits-all solution.

Yet, in designing social protection programs for transitional economies, a fundamental issue that needs to be addressed is how to evaluate the current programs. How effectively do current programs protect the most vulnerable populations, especially the poor? This paper deals with this issue of evaluating social protection programs that are currently available in a transitional economy, with the ultimate objective of aiding program redesign options in the reform process. This study has selected Tajikistan as a case study, mainly due to data availability and quality, as well as to the lack of studies in this field.

After independence in 1991, Tajikistan inherited a comprehensive system of social protection, including a wide range of cash and in-kind transfers. Both social assistance and social insurance are noncontributory in nature, in that no contributions are collected from employees. Moreover, social protection consists largely of three public transfer programs: old-age pension, disabled pension, and survivors pension. Of the 685.5 million Tajik somoni (TJS) social protection fund in 2009, TJS 601.2 million (87.7% of the budget), was spent for these three pension payments. However, as the government acknowledges, the pension system is financially constrained and inefficiently managed, leading to very low pension benefits and payment arrears that may take months to settle. An important reason behind this is the pension system's continued adherence to Soviet-era social policies under which all citizens are entitled to receive subsidies from the state. Since the pension system is noncontributory and the government shoulders public

transfers, the system merits a critical evaluation as to whether these public transfers benefit those intended, in this case, vulnerable groups such as the elderly and disabled. In this context, this paper analyzes in depth how well such noncontributory transfer programs are targeted to the vulnerable groups. The assessment can help determine if the public transfer programs are helping the vulnerable groups meet a minimum subsistence standard of living.

The paper is structured as follows: Section II describes social protection programs in Tajikistan, focusing on the social pension system. Section III discusses the methodology of measuring targeting efficiency, while Section IV discusses empirical findings. Section V concludes the paper.

II. Social Protection Programs in Tajikistan

Social protection is enshrined in the 1994 Constitution of the Republic of Tajikistan: Article 34 states that mothers and children are entitled to special protection by the state, while Article 39 guarantees social security for the elderly, the disabled, and children who have lost a parent. The law “On Pension Provision of Citizens of Tajikistan” guarantees monthly stipends to the elderly;¹ those living with disabilities;² survivors (i.e., families that have lost their breadwinner); and other special-merit individuals (e.g., World War II veterans, victims of the Chernobyl disaster, Olympic athletes, etc.). In March 1996, the government introduced the cash compensation program (CCP) as a substitute to the Soviet-era system of child allowances and bread subsidies. The CCP is a program that covers children from poor households, children with only one parent, people with disabilities, and students in vocational or tertiary school. Aside from the social pension system and the CCP, other components of Tajikistan’s social protection system include social insurance for those formally employed, unemployment benefits, and fuel subsidies. In 2009, the central government allocated TJS 685.5 million for social protection, representing 11.5% of the total state budget and 3.3% of gross domestic product (GDP).

Despite having a range of social protection programs, majority of the social protection budget is spent on public transfers in the form of pensions: of the total social protection budget in 2009, TJS 601.2 million (or 87.7%) was spent on social pension payments (Ministry of Finance 2009). The State Agency on Social Insurance and Pensions (SASIP) under the Ministry of Labor and Social Protection administers pensions for civilian

¹ Starting in 2003, “elderly” has been defined as 63 for men and 58 for women, from 60 and 55 years old in Soviet times.

² Tajikistani law defines a “disabled person” as someone with physical, intellectual, or mental disability and classifies them into three groups. People in Group I are unable to work because of their disability and require care from other persons; Group II are also unable to work, but are able to take care of themselves; Group III are those with disabilities, but are still considered able-bodied and expected to work.

beneficiaries, which comprise 88% of all social pension payments (the remaining 12% of pensions are for former uniformed personnel).

Social protection in Tajikistan is characterized by financial imbalance, inadequate coverage, poor targeting, limited information, and poor distribution mechanisms (Government of Tajikistan 2010). The government acknowledges that the social pension system is “badly run and ineffective”, benefits are “unacceptably low”, and requires significant reform (Government of Tajikistan 2002). But there has been little progress in overhauling the system and the same problems are cited in their 2007 and 2010 Poverty Reduction Strategy papers (Government of Tajikistan 2007 and 2010). In addition to low benefits, arrears in the payment of social pensions are commonplace due to poor cash management (Ministry of Finance 2009). As such, pensions are released sequentially by location: first in Dushanbe, then in the Region of Republican Subordination (RRS), Gorno-Badakhshan Autonomous Oblast (GBAO), Sughd, and lastly Khatlon. In July 2010, pension arrears reached TJS 18 million, mostly in Khatlon (TJS 7.8 million) and Sughd (TJS 6.7 million), having negative impacts on economic recovery and food security in the regions (UNDP 2010).

As noted earlier, Tajikistan’s social pension system reflects the Soviet-era system of universality, which means that the pension programs are noncontributory, that is, no contributions are collected from employees. While this was appropriate under central planning, this continued adherence to such an approach is a key problem for the current social pension system (Government of Tajikistan 2010). After independence from the former Soviet Union, Tajikistan underwent a period of severe economic dislocation. There are many problems associated with this transition. First, the difficulties of transition and the protracted civil conflict in the 1990s caused GDP to contract and inflation to soar, resulting in severe curtailments in social spending (Asadullaev 2004). Total social spending (which includes expenditures for health, education, and social protection) fell from 19.9% of GDP in 1992 to just 7.2% in 1998 (Falkingham 2000). Despite rapid economic growth in the 2000s, social spending has not returned to its pre-transition levels: in 2009, total state spending on health, education, and social protection was just 3.3% of GDP, far from the average of 20.4% of GDP recorded in 1992–1994 (Ministry of Finance 2009, Falkingham 2000). The resource constraints become more stark if one adjusts for inflation:³ in real terms using 1995 prices, Tajikistan’s social spending was TJS 21.1 million in 1992, but down to TJS 13.9 million in 2009. Per capita real social spending was halved from TJS 3.81 in 1992 to TJS 1.87 in 2009.

Since independence in 1991, although social protection has come under increasing fiscal pressure, entitlement to a social old-age pension remains largely unchanged. Social protection is an integral part of Tajikistan’s poverty reduction strategy, but it requires a targeted approach to achieve its main objectives. As stated, scarce resources need to be stretched across a large population leading to “unacceptably low” benefits. And

³ Price and gross domestic product data from IMF World Economic Outlook 2010 Database.

although social pensions are meant to be regularly adjusted with inflation, this rarely happens, such that the real value of social pensions has fallen over the years and is not enough to meet even basic needs (Falkingham et al. 2009). The lack of administrative capacity to implement targeting in the social pension system is also a symptom of the transition to a market economy. State pensions and subsidies were universal because technically there were no rich or poor households. Thus, the administrative capacity to implement targeted programs—such as legal basis, regulatory framework, institutions, statistical capacity, poverty mapping, and so on—was never developed and is now a key problem (Government of Tajikistan 2010). This lack of targeting can even mean the pension system works against its stated goal of poverty reduction, even though the pension programs are public transfers and are addressed to the vulnerable groups such as the elderly and disabled. For example, given that cash flow is a binding constraint for SASIP, an ideal solution would be to distribute social pensions according to need: poorer pensioners first before richer pensioners. But in practice Dushanbe and RRS—the two *oblasts* (administrative divisions) with the lowest poverty rates—are prioritized in social pension distribution over the poorer *oblasts* of GBAO, Sughd, and Khatlon. Given that the pension programs are noncontributory public transfers, these programs should be designed in a way that benefits the needy much more than those better off.

III. Methodology

A. Deriving the New Targeting Indicator

The first issue to consider in evaluating a poverty reduction program is whether or not it actually reaches the poor. That is, how well does it target the intended beneficiaries? The number of targeted programs has increased in developing countries.⁴ Coady, Grosh, and Hoddinott (2004) listed 85 targeted programs in 36 countries. Because these programs follow different procedures to identify beneficiaries, it is important to know how well different programs perform. Most of these social assistance programs have the sole objective of reducing poverty; thus, measurements of targeting efficiency should be closely related to this objective.

Targeting efficiency is mainly concerned with the selection of beneficiaries into the program. But because targeted programs are usually not based on actual incomes or expenditures of households, there is the danger of committing two types of error in this process. Type I error occurs when someone who deserves the benefits is denied them, and Type II error occurs when benefits are paid to someone who does not deserve them. Often, these errors move in the opposite direction: attempts to reduce Type II errors lead to an increase in Type I errors.

⁴ For an extensive review of cross-country experiences in cash transfer programs, see Subbarao et al. (1997).

To tackle this problem, a new targeting indicator is derived in this paper, which is a function of four factors: percentage of the poor targeted by the program, percentage of population that can be covered by the program, Type I errors, and Type II errors. The indicator is derived using Cramer's *phi* statistic, which measures the association between the poverty status of households or individuals and the selection of beneficiary households or individuals: the higher the value of this indicator, the better the targeting ability of the program. This indicator has also been shown to be closely linked with poverty reduction. The derivation of the new targeting indicator is as follows.

Suppose N is the total population of households, and among them N_p are poor, then the headcount ratio of poverty is given by

$$H = \frac{N_p}{N} \quad (1)$$

Suppose that N_b are the households who benefit from the program, then the probability of selecting a beneficiary household is given by

$$B = \frac{N_b}{N} \quad (2)$$

If there is perfect information about the poor, then all beneficiaries of the program would be poor; however, this is not the case in practice. Suppose among N_b beneficiaries, N_{bp} are poor and the remaining $(N_b - N_{bp})$ are the nonpoor beneficiaries. The probability of selecting a beneficiary among the poor is given by

$$B_p = \frac{N_{bp}}{N_p} \quad (3)$$

Similarly, the probability of selecting a beneficiary among the nonpoor is given by

$$B_n = \frac{(N_b - N_{bp})}{(N - N_p)} \quad (4)$$

If there is no association between the actual poor and selection of a beneficiary, such as when beneficiaries are blindly selected from the population, then the probability of selecting a beneficiary among the poor must be equal to the probability of selecting a beneficiary among the nonpoor, or $B_p = B_n$. This situation may be characterized as having no information as to who the poor are, so everyone has the same probability of being selected into the program. Conversely, a program can be classified as pro-poor if the probability of selecting a beneficiary among the poor is greater than that among the nonpoor, i.e., when $B_p - B_n > 0$.

However, proxy means testing can never identify the poor perfectly because two kinds of errors are committed: Type I error is defined as the probability of not selecting a poor household as beneficiary⁵ and can be written as

$$\alpha = (1 - B_p) \quad (5)$$

Similarly, Type II error is the probability of selecting a nonpoor household as beneficiary and can be expressed as

$$\beta = B_n \quad (6)$$

It is easy to see from equations (2), (3), and (4) that

$$B = HB_p + (1 - H)B_n \quad (7)$$

which on using equations (5) and (6) gives

$$B = H(1 - \alpha) + (1 - H)\beta \quad (8)$$

The first term in the right hand of equation (8) is the proportion of poor beneficiaries and the second term is the proportion of nonpoor beneficiaries in the program.

In the literature, the term “leakage” is commonly used. Leakage (l) is defined as the share of nonpoor beneficiaries in the program and is derived from equation (8) as

$$l = \frac{(1 - H)\beta}{B} \quad (9)$$

To derive the proposed targeting indicator, it will be useful to write

$$(1 - \alpha - \beta) = B_p - B_n \quad (10)$$

A good social assistance program should be designed to be pro-poor; i.e., the poor are more likely to be selected into the program than the nonpoor. The degree of pro-pooriness can be measured by how much higher the probability of selecting a poor person into the program is than the probability of selecting a nonpoor person into the program, which is measured by $(B_p - B_n)$. Thus, the efficiency of the proxy means testing can be measured by the magnitude of $(1 - \alpha - \beta)$.

The association between poverty status and selection of beneficiaries can be measured by Cramer's *phi* statistic as

⁵ Some studies refer to this as Type II error (Ravallion 2009). According to the standard statistical literature, Type I error is the probability of rejecting a null hypothesis. If the null hypothesis is that a household selected is poor, then the probability of not selecting this household in the program should be Type I error. Thus, the statistical convention in defining Type I and Type II errors is followed.

$$\phi = (1 - \alpha - \beta) \sqrt{\frac{H(1-H)}{B(1-B)}} \quad (11)$$

When $\phi = 0$, it implies that there is no association between poverty and selection of beneficiaries; the poor are as likely to be selected into the program as the nonpoor. From the contingency table below (Table 1), it can be seen that $N\phi^2$ is distributed as a χ^2 distribution with 1 degree of freedom. This result allows us to test the null hypothesis of no association between poverty status and selection of beneficiaries.

Table 1: 2 × 2 Contingency Table

	Poor	Nonpoor	Total
Beneficiary	N_{bp}	$N_b - N_{bp}$	N_b
Nonbeneficiary	$N_p - N_{bp}$	$(N - N_p) - (N_b - N_{bp})$	$N - N_b$
Total	N_p	$N - N_p$	N

The larger the value of ϕ , the greater the association between poverty status and selection of beneficiaries. As shown above, this statistic is also related to the degree of pro-pooriness of the program; the larger the ϕ , the greater the pro-pooriness of the program.

In the case of perfect targeting, all the poor are selected as beneficiaries and all nonpoor are completely left out, which can happen only when $\alpha = 0$, $\beta = 0$ and $B = H$, which from equation (11) gives us $\phi = 1$. Conversely, in the case of perfect “anti-poor” targeting where all the poor are left out of the program and all nonpoor are included—i.e., $\alpha = 1$, $\beta = 1$ and $B = 1 - H$ —then $\phi = -1$. Thus, our proposed targeting indicator ϕ lies between -1 and $+1$, and its magnitude gives an indication of how good a given program is in targeting the poor. Any program that gives negative values of ϕ should not be implemented because it is anti-poor (i.e., the poor have less chance of being selected than the nonpoor). On the other hand, ϕ^2 is similar to the coefficient of determination in regression analysis: proportion of total variation that is explained by the proxy means test. In designing a program, one should aim to maximize ϕ^2 .

B. Shapley Decomposition

Suppose there are three programs providing cash income to vulnerable households. Each of these cash transfer programs contributes to poverty reduction in their own way, but the three programs also have a combined impact on poverty. Note, however, the sum of the individual impacts of each program does not add up to the total impact of these three programs because these programs interact with each other. Thus, the Shapley decomposition is used to calculate the net contribution of each program to the total poverty reduction impact of all the programs combined.

Household surveys provide information on the cash benefits received by households under each program; however, the total household expenditure they measure already includes the benefits from such cash transfers. Suppose x is the household expenditure without the program and y is the household expenditure after the household received the cash transfer. Consider a household that receives cash benefits amounting to b , then it is reasonable to assume that

$$y = x + b \quad (12)$$

which implies that the household increases its expenditure exactly equal to the cash benefit it receives from the program. In other words, we assume that the entire amount of cash benefit received from the program is used to enhance household welfare, which is measured by expenditure. On the other hand, it is possible that some households will save a portion of the program benefit; in this case, the entire benefits from the program may not lead to an equivalent increase in household expenditure. Yet present savings means future consumption; as such, it is still reasonable to assume that the welfare value of savings is equivalent to the value of current consumption (i.e., at the utility-maximizing allocation, the marginal utility from current consumption is equal to the marginal utility of discounted future consumption, which is equal to savings).

Aggregate poverty measures such as the headcount ratio, poverty gap ratio, and severity of poverty depend on a vector of household expenditures (or per equivalent adult expenditures) as well as the household poverty line (z). Therefore, poverty measures before and after the program may be written as $\theta(z, \tilde{x})$ and $\theta(z, \tilde{y})$, respectively. The poverty impact of a program with benefit b , say program B , can be measured as

$$\varphi(B) = \log \theta(z, \tilde{y}) - \log \theta(z, \tilde{x}) = \log \theta(z, \tilde{x} + \tilde{b}) - \log \theta(z, \tilde{x}) \quad (13)$$

where \tilde{x} and \tilde{y} are the vectors of expenditures before and after the program, respectively, and \tilde{b} is the vector of benefits received by households from program B . Note that the poverty impact measured by equation (13) is the proportional reduction in poverty due to program B , which will always be negative because the program contributes to additional income (or expenditure) to the households. Equation (13) can be used to calculate the poverty impact of a particular program on any poverty measure. In this study, the three most widely used poverty measures are applied: headcount ratio, poverty gap ratio, and severity of poverty, which are attributed to Foster, Greer, and Thorbecke (1984).

This study defines three programs as B_1 , B_2 , and B_3 , and B is the total impact of the three programs. It should be noted that

$$\varphi(B) \neq \varphi(B_1) + \varphi(B_2) + \varphi(B_3) \quad (14)$$

which informs that the total poverty impact of the three programs is not equal to the sum of the poverty impacts of the individual program. This occurs because the individual programs interact with each other. To capture these interactions, the Shapley (1953) decomposition method that separates the impact of individual programs on poverty is applied. Based on equation (13), the following may be easily defined:

$$\begin{aligned}
 \varphi(B_1) &= \log\theta(z, \tilde{x} + \tilde{b}_1) - \log\theta(z, \tilde{x}) \\
 \varphi(B_2) &= \log\theta(z, \tilde{x} + \tilde{b}_2) - \log\theta(z, \tilde{x}) \\
 \varphi(B_3) &= \log\theta(z, \tilde{x} + \tilde{b}_3) - \log\theta(z, \tilde{x}) \\
 \varphi(B_1, B_2) &= \log\theta(z, \tilde{x} + \tilde{b}_1 + \tilde{b}_2) - \log\theta(z, \tilde{x}) \\
 \varphi(B_1, B_3) &= \log\theta(z, \tilde{x} + \tilde{b}_1 + \tilde{b}_3) - \log\theta(z, \tilde{x}) \\
 \varphi(B_2, B_3) &= \log\theta(z, \tilde{x} + \tilde{b}_2 + \tilde{b}_3) - \log\theta(z, \tilde{x}) \\
 \varphi(B_1, B_2, B_3) &= \varphi(B)
 \end{aligned}$$

The Shapley decomposition is then written as

$$\varphi(B) = \varphi^*(B_1) + \varphi^*(B_2) + \varphi^*(B_3) \quad (15)$$

where $\varphi^*(B_1)$, $\varphi^*(B_2)$, and $\varphi^*(B_3)$ are the net poverty reduction contributions of programs B_1 , B_2 and B_3 , respectively. The net effect of B_1 , B_2 , and B_3 can be expressed as

$$\begin{aligned}
 \varphi^*(B_1) &= \frac{1}{3}[\varphi(B_1) + \varphi(B) - \varphi(B_2, B_3)] + \frac{1}{6}[\varphi(B_1, B_2) - \varphi(B_2) + \varphi(B_1, B_3) - \varphi(B_3)] \\
 \varphi^*(B_2) &= \frac{1}{3}[\varphi(B_2) + \varphi(B) - \varphi(B_1, B_3)] + \frac{1}{6}[\varphi(B_1, B_2) - \varphi(B_1) + \varphi(B_2, B_3) - \varphi(B_3)] \\
 \varphi^*(B_3) &= \frac{1}{3}[\varphi(B_3) + \varphi(B) - \varphi(B_1, B_2)] + \frac{1}{6}[\varphi(B_1, B_3) - \varphi(B_1) + \varphi(B_2, B_3) - \varphi(B_2)]
 \end{aligned}$$

From equation (15), the net contribution of each individual program to the total combined impact of the three programs can be calculated.

IV. Empirical Results

For an empirical analysis, the 2007 Living Standard Measurement Survey (LSMS) for Tajikistan, a nationally representative survey of households and communities, is used. The sampling frame uses a two-stage method based on the 2000 Census of Tajikistan and was conducted by the National Committee for Statistics (*Goskomstat*). The

survey collected data from 4,860 households and 30,778 individuals on (i) household consumption of a wide range of food and nonfood items; (ii) socio-demographic composition of the household and labor market activities, such as participation in the labor force and number of hours worked; (iii) health and education of household members; and (iv) sources of household income such as individual wages, both cash and in kind; and transfers to the household from various sources. The data also contain extensive information on the migration of individual household members as well as remittances and transfers, such as interhousehold and government transfers.

This study focused on three major social pension programs in Tajikistan: old-age pension, disability pension, and survivor's pension due to the loss of breadwinner. This is done for two reasons: (i) as discussed above, much of the social protection in the country is coursed through the pension system; and (ii) in the LSMS data, practically all recipients of government transfers receive one or more of the three social pensions. As pointed out earlier, pension programs in Tajikistan are noncontributory. Moreover, the three pension programs are public transfers addressed to vulnerable groups, such as the elderly and disabled. As such, this merits a critical evaluation of each of these programs in terms of their ability to reach the intended beneficiaries and their impact on poverty reduction (vulnerable groups tend to suffer greater poverty than the general population).

In order to evaluate the programs, aggregate poverty based on per capita household expenditure is first measured. A household is classified as poor if its per capita expenditure is less than the per capita household poverty line; for this study, the per capita poverty line is set at TJS 138.8 per month, which was determined by the World Bank (2008). However, this approach does not account for household needs determined by household size and composition. For large households, it is reasonable to adjust the household size for economies of scale within households. Sharing opportunities are observed in the costs of shelter, economizing services such as food preparation, and savings from bulk purchases of food (Deaton and Paxson 1998, Kakwani and Son 2005). Similarly, clothing can be shared and passed down among family members. These could be viewed as savings that are essential for poor households. Adjusting for household economies of scale gives rise to the number of "equivalent adults" in the household. This study uses an adult-equivalent scale proposed by Kakwani and Lambert (1998).⁶ Thus, household welfare is measured by per equivalent adult household expenditure, defined as household expenditure divided by the number of equivalent adults in the household.

⁶ A brief description of the method by Kakwani and Lambert (1998) is as follows. Let α be the number of adults in the household, c_1 the number of children aged 5 years or less, c_2 the number of children from 6 to 14 years, and c_3 the number of children from 15–17 years, the number N of "equivalent adults" in the household is determined as: $N = (\alpha + 0.2C_1 + 0.4C_2 + 0.7C_3)^{0.8} + 0.1w$ where w is the number of working adults in the household. The exponent of 0.8 is used to take account of economies of scale within households (Buhmann et al. 1988). Since working people have to incur additional costs such as transport, clothing, and babysitting, a 10% cost is added to the household for each working member.

Table 2 provides demographic information on households in Tajikistan. There were about 7 million people in 2007, grouped into 1.1 million households, with a high incidence of poverty at 54.62% below the poverty threshold. The average household was estimated at 6.4 people during the survey period, but the average poor household had 7.2 people.

Table 2: Demographics in Tajikistan, 2007

Household Composition	Poor Households	Nonpoor Households	All Households
Children 0–5 years	1.07	0.68	0.87
Children 6–14 years	1.68	1.11	1.38
Children 15–17 years	0.55	0.49	0.52
Adults 18 years and over	3.92	3.35	3.62
Household size	7.22	5.63	6.40
Equivalent adults	3.88	3.31	3.58
Employed persons	1.87	1.65	1.76
Employed per equivalent adult	0.48	0.50	0.49
Percent of population	54.62	45.38	100.00
Number of households	538,152	579,796	1,117,949
Total population	3,858,047	3,205,753	7,063,800

Source: Author's estimates based on 2007 LSMS.

It is interesting to note from Table 2 that the average number of employed persons in poor households (1.87) is greater than nonpoor households (1.65). This suggests that although more poor individuals are employed in the labor market, their average earnings are lower than the nonpoor, which could be one of the main causes of poverty. Aside from the number of jobs created by economic growth, it is equally important to look into job quality or the creation of productive jobs. It is often claimed that there is a strong link between productivity and decent work, or work that provides a sufficient income and ensures social security, good working conditions, and a “voice” at work. In this respect, the concept of the “working poor” in the developing world adds a new dimension to the study of labor markets by placing decent and productive employment at the forefront of the poverty discussion. The fundamental reason for addressing these issues is based on the simple observation that a substantial share of poor people in the world are already at work. In other words, it is not the absence of economic activity that is the source of their poverty, but the low productivity of those activities. A proposition is that if 555 million employed but poor people were able to earn more from their work, then poverty would decline (ILO 2004). But not just any work can raise people out of poverty—what is needed is productive work.

Table 3 presents the percentage of beneficiaries for three of Tajikistan's social pension programs: old-age pension, disability pension, and survivor's pension. If a household member receives any transfer from any of these programs, then the household is regarded as beneficiary. All people living in beneficiary households are counted as

beneficiaries since benefits are assumed to be shared among household members. According to the estimates, 42.97% of individuals in poor households are beneficiaries of at least one of these three programs, compared with 33.44% among nonpoor households. Of the three major programs, more than 99% of the beneficiaries belong to the old-age pension, with a small proportion of beneficiaries receiving disability pension and/or survivor's pension. The results also reveal that a significant proportion of beneficiaries receive more than one pension: that is, 7.12% of poor and 4.26% of nonpoor households do.

Table 3: Percentage of Beneficiaries for Three Major Social Pension Programs

	Poor Households	Nonpoor Households	All Households
Old-age pension	42.72	33.25	38.42
Disability pension	7.38	4.45	6.05
Survivor's pension (loss of breadwinner)	0.84	0.33	0.61
All three programs	42.97	33.44	38.65
Persons receiving no pension	57.03	66.56	61.35
Persons receiving more than one pension	7.12	4.26	5.82

Source: Author's estimates based on 2007 LSMS.

Due to a lack of financial and administrative resources, governments in developing countries often face several problems in implementing social protection programs, such as inadequate coverage (i.e., many people who qualify do not receive benefits), poor targeting, and a very low level of benefits. Tajikistan faces similar problems (Government of Tajikistan 2010). Despite universal entitlement to social pensions, Table 3 indicates that the poor are more likely to receive social pensions than the nonpoor. However, this cannot be regarded as an indication of the extent to which the system benefits the poor more than the nonpoor. Given the very low level of benefits given to pensioners, the cumbersome process of collecting benefits, and the delays in payment, the pension programs on their own would not be sufficient to provide for a minimum subsistence standard of living.

Based on data from the LSMS, it is found that poverty suffered by households composed of a single pensioner or a pensioner couple is higher than the national average, and, more strikingly, that poverty among households with pensioners and children but no working adults is extremely high. This suggests that changing the current approach toward targeting particular households with higher transfers would be effective in using social protection as the country's poverty reduction strategy. That said, the issue of how well the three noncontributory pension programs target the vulnerable groups is now examined.

The issue of bad targeting is of paramount concern in Tajikistan, especially if it aims to use social pension in its poverty reduction strategy. Table 4 helps evaluate how well (or badly) each of these three programs is targeted to the poor. As stated, exclusion error (Type 1 error) refers to the percentage of individuals belonging to poor households who are excluded from a program; Type 2 error is the percentage belonging to nonpoor households that are included in the program. Leakage measures the proportion of nonpoor individuals who do not qualify for benefits but do receive them, and is expressed in terms of the percentage of all the beneficiaries for a program. The results in Table 4 suggest that 57.28% of poor individuals are not beneficiaries of the old-age social pension program, while 57.03% of the poor do not receive benefits from any of these three programs. These exclusion errors may be used to calculate their corresponding inclusion errors (or Type 2 errors) for the programs: for instance, the Type 2 error for the old-age pension is 33.25%, indicating that 33.25% of nonpoor individuals are included in the benefits scheme. These results suggest that the programs are indeed badly targeted.

This issue is again affirmed by the estimates on leakage, which in this case represents the additional resources that the government could use for poverty reduction if they transformed the pension system into a targeted social pension program. As expected from the results on Type 1 and 2 errors, the estimate of leakage is large, particularly for the old-age pension program: leakage amounts to as much as 47.26% for the pension system, suggesting that more than 47% of the total beneficiaries belong to nonpoor households. As shown earlier in Table 3, over 57% of people from the poor families remain without any monetary assistance from any of these three programs.

Table 4: Exclusion and Inclusion Errors for Three Programs

	Exclusion Error	Leakage	Targeting Index
Old-age pension	57.28	47.27	0.10
Disability pension	92.62	40.18	0.06
Survivor's pension (loss of breadwinner)	99.16	29.71	0.03
All three programs	57.03	47.26	0.10

Source: Author's estimates based on 2007 LSMS.

The targeting index presented in Table 4 indicates the degree of pro-pooriness of the social pension system. The results suggest that the programs are still pro-poor, albeit quite small in coverage. This finding is consistent with the results emerging from Table 3 that poor households still have a greater probability of being included in the programs than their nonpoor counterparts. Yet, the difference is quite dismal.

The findings also support the argument that, given the government's insufficient resources, noncontributory pension programs have a particular need to address the issue of targeting. Targeting is probably the first consideration that governments need to

address when fiscal resources are constrained and needs are great. This is true not only of transition economies such as Tajikistan, but of developed market economies as well. In addition to targeting, other issues are critical to the success of social pension programs. For instance, the size of benefits is an important element to achieve the main objective of social pension—helping the poor. This issue is further investigated in Tables 5–7.

Table 5 shows that the social pension program is highly inequitable in terms of transfers received by poor and nonpoor beneficiaries. The beneficiaries from poor households receive TJS 11.23 per equivalent adult per month on average, while their nonpoor counterparts receive an average monthly pension of TJS 14.78 per equivalent adult. Inequity is consistently observed across the three programs. This inequity is inherent in the social pension system.

Table 5: Average per Equivalent Adult Transfers per Beneficiary

	Poor Households	Nonpoor Households	All Households
Old-age pension	11.23	14.78	12.62
Disability pension	5.71	7.12	6.45
Survivor's pension (loss of breadwinner)	3.02	5.49	3.63
All three programs	12.20	15.81	13.62

Source: Author's estimates based on 2007 LSMS.

Table 6 presents the average benefits per equivalent adult received monthly by poor and nonpoor households. It provides an overall picture of equity in beneficiary selection as well as in transfers received per beneficiary. The results show that poor households receive an average transfer of TJS 4.80 per equivalent adult compared to the average transfer of TJS 4.92 that nonpoor households receive. This finding suggests that while the old-age pension program is inequitable, the disability and survivor's pension programs are equitable. Based on the estimates of poverty correlations in Table 6, these programs are insignificantly correlated with poverty reduction, again indicating that better targeting is needed.

Table 6: Average per Equivalent Adult Transfers (all persons)

	Poor Households	Nonpoor Households	All Households	Poverty Correlation
Old-age pension	4.80	4.92	4.85	–0.0049
Disability pension	0.42	0.35	0.39	0.0126
Survivor's pension (loss of breadwinner)	0.03	0.02	0.02	0.0109
All three programs	5.24	5.29	5.26	–0.0016

Source: Author's estimates based on 2007 LSMS.

Table 7 presents the total costs of the programs excluding administrative costs. The amounts indicate how much is actually transferred to poor and nonpoor beneficiary households. The last column in the table shows leakage, which is the proportion of resources given to those who do not really need government subsidies (i.e., the nonpoor households). For instance, the results show that 48.53% of total transfers under the old-age pension program go to nonpoor households. The corresponding leakage for the disability and survivor's pension programs is relatively smaller than the leakage from the old-age pension scheme.

Table 7: Total Costs in Benefits Received by Poor and Nonpoor Households (TJS millions)

	Poor Households	Nonpoor Households	All Households	Percent Leakage
Old-age pension	10.00	9.42	19.41	48.53
Disability pension	0.88	0.68	1.56	43.26
Survivor's pension (loss of breadwinner)	0.05	0.03	0.09	39.43
All three programs	10.94	10.13	21.06	48.10

Source: Author's estimates based on 2007 LSMS.

The results presented in Table 8 examine the poverty impacts of the three social pension programs. If there is only one program, then we can evaluate its impact on poverty by measuring poverty before and after benefits are received; in this case, the percentage reduction in poverty would be the impact of the program on poverty. However, there are three programs in this study, with some households receiving benefits from more than one program. Interactions across the programs are addressed using the Shaply decomposition method described previously; thus, the results presented in Table 8 have already taken such interactions into account.

Table 8: Impact of Programs on Poverty Reduction Using Shaply Decomposition

	Headcount Ratio	Poverty Gap Ratio	Severity of Poverty
Old-age pension	-3.12	-7.40	-11.02
Disability pension	-0.35	-0.66	-1.12
Survivor's pension (loss of breadwinner)	0.00	-0.03	-0.05
All three programs	-3.47	-8.09	-12.19

Source: Author's estimates based on 2007 LSMS.

Altogether, the three programs reduce the proportion of people living below the poverty line (i.e., headcount ratio) by 3.47%; of the three programs, the contribution of the old-age pension scheme is the largest, amounting to 3.12%. On the other hand, the estimates suggest that the survivor's pension has an insignificant impact on the reduction in the headcount ratio.

As shown in Table 8, the old-age pension program has the largest impact on poverty reduction. Does this mean that this social pension program is superior to the other two programs? To answer this question, we need to evaluate the impact relative to the costs of each program. Given that the old-age pension program is the most expensive of the three, it is more appropriate to evaluate its impact in terms of its efficiency; i.e., dividing the change in poverty due to the pension program by the total costs of the program. Table 9 presents findings on the efficiency of each program, quantifying the magnitude of poverty reduction achieved for every TJK 1 million spent for the program. When the programs are assessed by this efficiency criterion, a very different conclusion is arrived at: of the three, the disability pension program is the most efficient in terms of poverty reduction.

**Table 9: Estimating Efficiency of Three Programs
(poverty reduction achieved per TJS 1 million)**

	Headcount Ratio	Poverty Gap Ratio	Severity of Poverty
Old-age pension	−0.31	−0.78	−0.57
Disability pension	−0.40	−0.98	−0.72
Survivor's pension (loss of breadwinner)	0.00	−0.98	−0.57
All three programs	−0.32	−0.80	−0.58

Source: Author's estimates based on 2007 LSMS.

V. Conclusion

Tajikistan inherited extensive and generous systems of social welfare that rapidly became unsustainable in the economically and socially trying period following independence from the former Soviet Union in 1991. Transition in the 1990s led to contraction in economic output and soaring inflation, contributing to a protracted civil war during 1992–1997. Despite achieving peace and rapid economic growth in the 2000s, real economic output is barely higher than its levels during independence, and per capita social spending is just half of what it was in 1992. On top of all this, poverty remains a severe problem, with more than half of the population living in poverty as of 2007.

Social pension is an important prong in the government's poverty reduction strategy, with the stated aim to provide assistance to the most vulnerable populations. However, Soviet-era social welfare policies of universal entitlement to state subsidies means that meager resources for social pension need to be spread thinly over a large population, leading to very low benefits and delays in receiving pensions. As noted earlier, social assistance and social insurance programs are noncontributory in Tajikistan. Pension programs account for almost 88% of the total budget allocated to social protection. Similarly, the 2007 LSMS shows that beneficiaries of a range of cash and in-kind public transfers by the government are largely recipients of the three pension programs: old-age pension, disabled pension, or survivors pension. In this context, the social protection system in Tajikistan refers to the social pension system. Given that these three pension programs are noncontributory and are public transfers in support of the standard of living of the elderly and disabled, an in-depth analysis is warranted to understand whether the programs reach their intended beneficiaries and whether they are effective in lifting the beneficiaries out of poverty. This study found that only 43% of poor households are receiving transfers from the government, while 33% of nonpoor households receive transfers.

Moreover, limited public resources argue for applying a targeted approach to any public transfer programs, including noncontributory pension schemes aimed at the most vulnerable populations. Even with meager resources, a lot can be done to improve the poverty alleviation impact of the social pension system through better targeting. The findings in the study suggest that the current system of social protection in Tajikistan, although offering an extensive range of programs, makes little contribution to guaranteeing the subsistence minimum standard of living for the vulnerable groups.

References

- Asadullaev, I. K. 2004. *Tajikistan: Guide to Parliamentary Elections 2005*. Dushanbe: Sharki Ozod.
- Buhmann, B., L. Rainwater, G. Schmauss, and T. Smeeding. 1988. "Equivalent Scales, Well-being, Inequality, and Poverty: Sensitivity Estimates across 10 Countries using the LIS Database." *Review of Income and Wealth* 34:115–42.
- Coady, D., M. Grosh, and J. Hoddinott. 2004. *Targeting of Transfers in Developing Countries: Review of Lessons and Experience*. World Bank, Washington, DC.
- Deaton, A., and C. Paxson. 1998. "Economies of Scale, Household Size, and the Demand for Food." *Journal of Political Economy* 106(5):897–930.
- Falkingham, J. 2000. "Country Briefing Paper: Women and Gender Relations in Tajikistan." Asian Development Bank, Manila.
- Falkingham, J., A. Baschieri, M. Evandrou, and G. Grant. 2009. "Left Behind in Transition? The Well-being of Older People in Tajikistan." In J. F. Collett, E. Johns, B. Marin, and P. Vanhuyse, eds., *Reinventing Retirement: Reshaping Health and Financial Security for the EU 27 and Eastern Europe*. Aldershot: Ashgate.
- Foster, J., J. Greer, and E. Thorbecke. 1984. "A Class of Decomposable Poverty Measures." *Econometrica* 52(3):761–66.
- Government of Tajikistan. 2002. *Poverty Reduction Strategy of the Republic of Tajikistan 2002*. ———. 2007. *Poverty Reduction Strategy of the Republic of Tajikistan 2007–2009*. ———. 2010. *Poverty Reduction Strategy of the Republic of Tajikistan 2010–2012*.
- ILO. 2004. *World Employment Report 2004–2005: Employment, Productivity, and Poverty Reduction*. International Labor Organization, Geneva.
- Kakwani, N., and P. Lambert. 1998. "On Measuring Inequity in Taxation: A New Approach." *European Journal of Political Economy* 14:369–80.
- Kakwani, N., and H. H. Son. 2005. "Economies of Scale in Household Consumption: With Application to Australia." *Australian Economic Papers* 44(2):134–48.
- Ministry of Finance. 2009. Budget Performance Report. Republic of Tajikistan.
- Shapley, L. 1953. "A Value for n -person Games." In H. W. Kuhn and A. W. Tucker, eds., *Contributions to the Theory of Games*, Vol. 2. New Jersey: Princeton University Press.
- Subbarao, K., A. Bonnerjee, J. Braithwaite, S. Carvalho, K. Ezemenari, C. Graham, and A. Thompson. 1997. *Safety Net Programs and Poverty Reduction: Lessons from Cross-Country Experience* (Directions in Development). World Bank, Washington, DC.
- UNDP. 2010. Tajikistan Monthly Risk Monitoring & Warning Report. United Nations Development Programme, New York.

About the Paper

Hyun H. Son examines the impacts of Tajikistan's public transfer programs on poverty reduction, with the aim of identifying key challenges. As the government provides these public transfers mainly as pensions, these programs merit an in-depth analysis of whether or not they reach their intended beneficiaries. This study argues for the need to apply a targeted approach to Tajikistan's public transfer programs, including noncontributory pension schemes aimed at the most vulnerable populations.


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