



Poverty & Equity Global Practice Working Paper 221

FISCAL INCIDENCE IN MOLDOVA

A COMMITMENT TO EQUITY ANALYSIS

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ABSTRACT

This paper uses methods developed by the Commitment to Equity Institute and data from the Household Budget Survey to assess the effects of government taxation and social spending on poverty and inequality in Moldova. The paper presents the first detailed distributional analysis of the tax and expenditure sides of the fiscal system, examining, in particular, the contribution of different taxes and transfers to poverty and inequality reduction in Moldova, as well as the cost-effectiveness of different taxes and transfers in achieving these poverty and inequality reduction goals. The analysis finds that the tax-benefit system in Moldova is quite pro-poor and has a significant effect on poverty and inequality, with the poverty reduction effect being stronger for lower poverty thresholds. Pensions provide much of the poverty-reducing effect, which is not surprising, given that in an aging society like Moldova, pensions are the main income source for many households. Direct transfers are also quite effective in reducing poverty and are also efficient, providing a relatively high degree of poverty reduction per dollar allocated to these programs, but their overall effect on poverty is muted by their small budgetary allocations.

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Fiscal Incidence in Moldova: A Commitment to Equity Analysis

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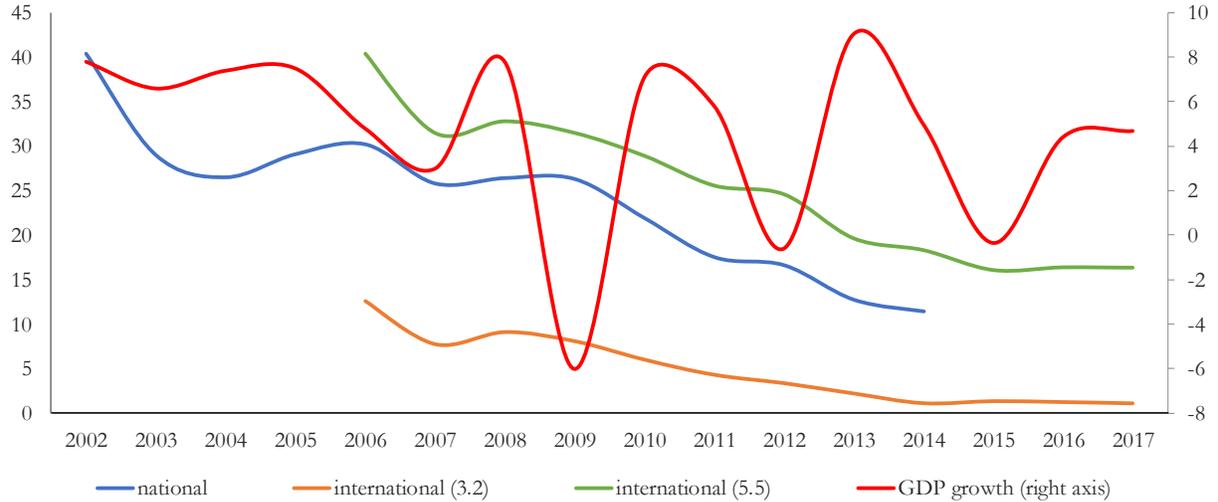
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1. Introduction

Moldova's economy grew strongly during the 2001-2008 period, and in subsequent years periods of fast growth were punctuated by episodes of negative growth in 2009, 2012 and 2015. Over the period 2000-2017 GDP per capita in 2011 US\$ PPP terms more than doubled, the country registered an impressive reduction in the poverty rate – taking the Lower Middle Income country poverty threshold of US\$ 3.2/day in 2011 PPP terms, the share of population below this threshold fell from almost 70 percent in 2000 to just 1 percent of the population in 2017 (Figure 1). According to the national poverty methodology, the poverty headcount fell from 54 percent in 2001 to just below 10 percent in 2015.

Figure 1. Evolution of poverty and GDP growth in Moldova (2002-2017)



Notes:

National - below the national poverty line (1562.8 MDL per month per adult equivalent);

International - below the international line (3.2 USD/day in 2011 PPP or 759.4 MDL per month per capita);

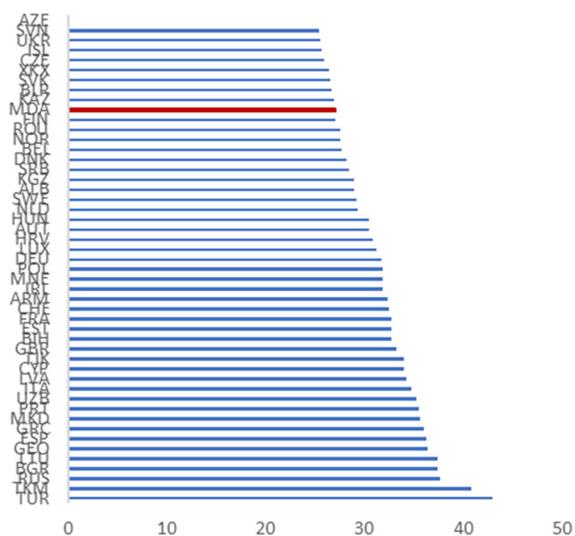
International - below the international line (5.5 USD/day in 2011 PPP or 1305.2 MDL per month per capita).

Source: IMF, World Bank, National Bureau of Statistics of the Republic of Moldova.

The reduction in poverty has also been associated with a steady reduction in the degree of income inequality in Moldova. The Gini index of inequality fell from 0.35 in 2007 to 0.26 in 2017, and is at the lower end of the inequality indices among countries in the ECA region (Figure 2). The fall in the level of inequality registered in Moldova is quite large, by international standards. Panel B of Figure 2 plots the reduction in the Gini index during the 2006-2016 period against the initial level of inequality in 2006. As one would expect, higher initial levels of inequality are associated, on average, with greater absolute declines in the Gini index. However, countries in the ECA region (orange dots) tend to cluster around the regression line, whereas Moldova (and also Kyrgyzstan) register a much higher reduction in inequality, relative to the starting point.¹

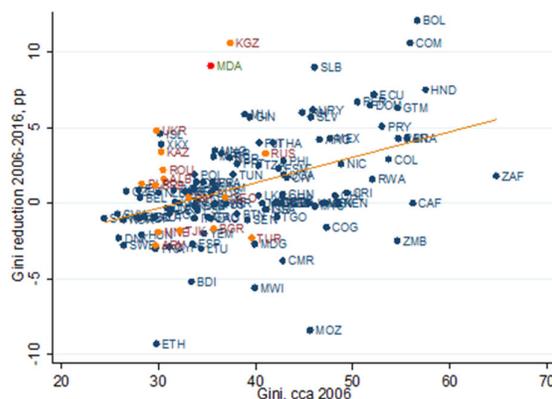
¹ This could, however, be a sign of deteriorating data quality. It would be important to compare the inequality statistics with those coming out of 2019 HBS data, as they rely on a new sample drawn from the 2014 Population Census sampling frame.

Figure 2 Gini index, A comparative perspective
Panel A: Inequality in ECA, latest data



Notes: Gini indices of inequality in ECA, as reported in World Bank's Poverty and Equity data portal.
 Source: Poverty and Equity Data Portal, World Bank.

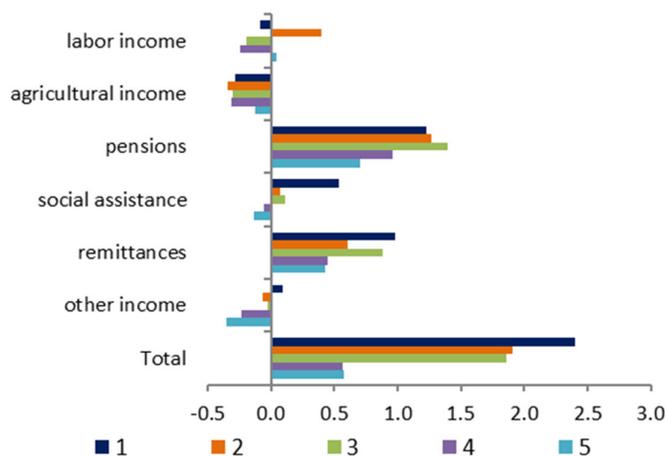
Panel B: Changes in inequality around the world 2006-2016



Notes: The X axis plots the Gini index around 2006 (the value is taken from year 2006 whenever available, and from years 2004-2008 for other countries, with priority given to values closest to 2006); Y axis plots the percentage points reduction between 2006-2016 (negative value means that the Gini index increased), Moldova in red; ECA countries in orange.

What were the main sources of disposable income growth for population groups at different income levels? Pensions and remittances were among the key contributors to overall disposable income growth, both for low income households and for high income households, but especially for the bottom three income quintiles. A similar decomposition done separately for urban and rural areas suggests that both pensions and remittances grew faster in rural areas in absolute terms (and so did overall disposable income), whereas in relative terms growth in remittances and pensions contributed a greater share of the total in urban areas (Cojocaru and Matytsin, 2018). At the bottom of the income distribution, disposable income growth was also supported by social assistance. Whereas for the 2nd-5th quintiles the contribution of social assistance to overall disposable income growth was negligible, for the population in the bottom quintile social assistance also contributed one-fifth of the total disposable income growth (Figure 3).

Figure 3. Shapley decomposition of disposable income growth, by quintile



Source: Authors' estimates based on HBS data.

The relative contributions of various income components to overall disposable income growth are a reflection, in part, of the composition of household income sources, and of the changes in the demographic profile of the population. A recent analysis shows that between 2011 and 2016 the importance of remittances, especially for the bottom 40 percent of the population, increased, while the importance of labor income fell. Meanwhile, among the urban B40 group, the share of pensions in overall disposable income increased from 23 percent in 2011 to 27

percent in 2016, consistent with the notable increase in the age profile of the population pyramid. With high levels of emigration of working age population being an important contributing factor, since independence the average age in Moldova has been increasing more rapidly than in the ECA region overall (Cojocaru and Matytsin, 2018).

The income decompositions described above provide some insight into the contribution of certain parts of the fiscal system (notably, transfers) to inclusive growth. However, it is worth considering more rigorously, to what degree various components of the fiscal system, both taxes and transfers, alleviate poverty and inequality in Moldova. The answer to this question is important both in the context of creating fiscal space for growth enhancing spending while protecting poor and vulnerable groups, and also to be able to assess the distributional impact of the important policy changes such as the tax policy changes that were introduced in 2018. An investigation of this broad question – what is the distributional incidence of each element of the fiscal system, and of the system overall, and how effective (and efficient) each element of the fiscal system is in alleviating poverty and inequality – is the objective of this paper.

In order to answer this question, the paper employs the Commitment to Equity (CEQ) framework – a fiscal incidence analysis that focuses on the poverty and inequality implications of the country’s fiscal system (Lustig and Higgins, 2013). The methodology, described in detail in section 3 of this paper, relies on assigning to each household in a representative household survey sample, various taxes and social transfers (both direct and indirect), based on a set of income concepts that allow for a gradual incorporation of different components of the fiscal system into the household’s income. This setup then allows us to compute a set of poverty and inequality indices before and after the program intervention, which gives the marginal effect of a given program on poverty and inequality. In addition to the poverty and inequality effects, the CEQ setup also enables us to compare across programs their efficiency in reducing poverty and inequality, that is the effect of the program, normalized by the overall budget that the program commands, to account for the fact that the differential impact of different programs on poverty or inequality is a function of, for instance, program targeting, but also of the overall budget that the program wields.

One clear advantage of the CEQ methodology is also the harmonized methodology that has been applied in over 70 countries worldwide, including a number of ECA countries such as Belarus, Poland, Romania, the Russian Federation, and Ukraine. The methodological consistency in the way income concepts are defined, as well as reliance on internationally comparable poverty thresholds in US\$ Purchasing Power Parity (PPP) equivalents allows for relatively straightforward cross-country comparisons and benchmarking of the distributional impacts of various taxes and transfers, and comparisons of program efficiency.

It should be noted at the outset that the CEQ focuses on the poverty and inequality impact of the tax-benefit system, whereas other aspects of fiscal policy are not discussed in detail in the analysis, such as fiscal sustainability or revenue generation. The omission of these issues from the analysis does not deny their importance for overall fiscal equity. However, the primary focus of the CEQ framework is to provide insights on fiscal incidence and impact of taxes and transfers on poverty and inequality. Nevertheless, in section 4 we present a discussion of efficiency of various instruments, that is, their impact of poverty and inequality per dollar allocated to the program, which does provide insights on ways in which the poverty and inequality impact of the fiscal system could potentially be improved, holding the overall envelope constant, or how much money could be saved, for a given poverty or inequality impact, by focusing reforms on parts of the fiscal system that are particularly inefficient in achieving fiscal equity goals, and/or strengthening programs that have a high degree of efficiency.

The main findings emerging from the analysis suggest that the tax-benefit system in Moldova is quite pro-poor, with 60 percent of the population as net recipients, and households at the bottom of the income distribution receiving as much as 96 percent of their final income as net benefits (including old age pensions). The overall distributive effect of the tax-benefit system is significant; the Gini index falls from 0.48 for market income to 0.31 for final income, a 36 percent reduction. Similarly, the poverty rate falls by some 20 to 60 percent from the level associated with market income, depending on the poverty threshold used, with the poverty alleviating effect being stronger the closer one gets to the bottom of the income distribution. The overall redistributive effect of various programs depends in part on its targeting and ability to cover households in need, but it also depends on the program budget – larger programs have greater capacity to alleviate poverty and inequality, at least in principle. Comparing the efficiency of various programs in alleviating poverty and inequality per dollar allocated to these programs, we can see that the targeted social assistance to poor families’ benefits is the most efficient. Of all the types of direct transfers, poverty benefits have the lowest cost of fighting poverty and inequality, even though the overall poverty reduction effect of the program is muted by its small size. Old age pensions, despite not being

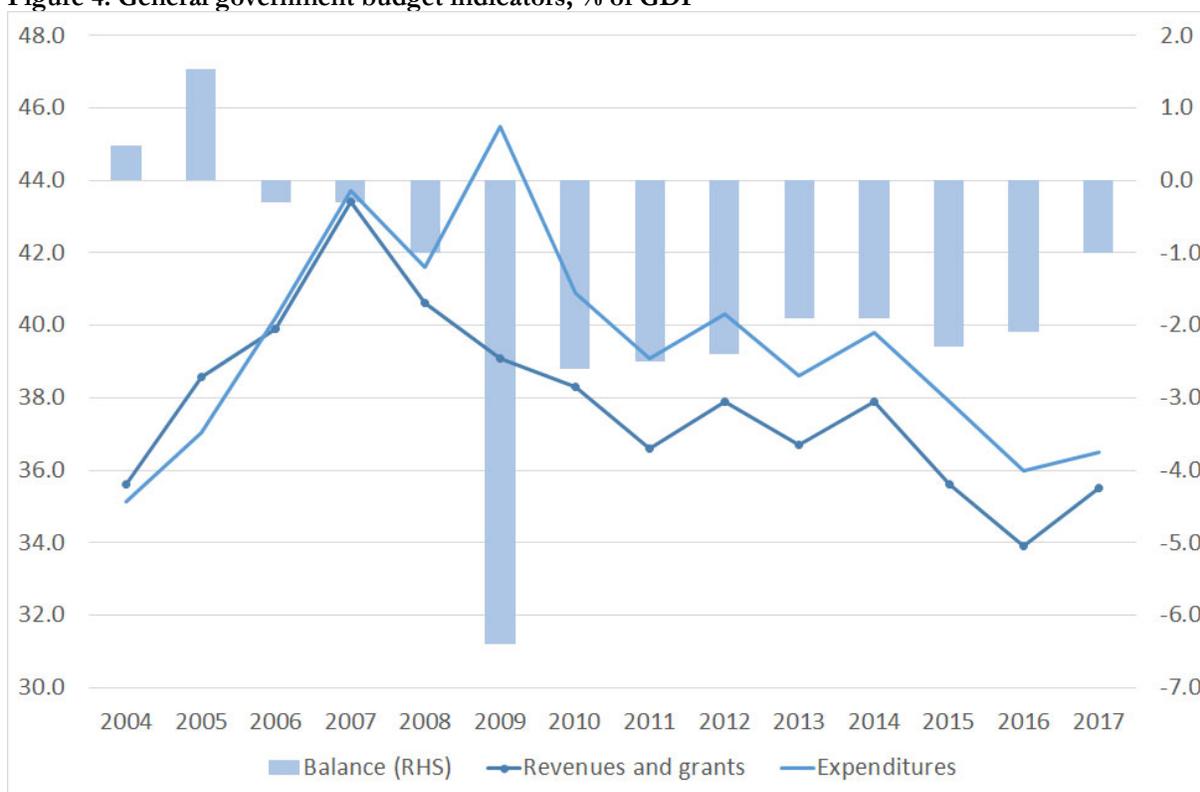
means-tested, are also moderately efficient in reducing poverty and inequality, because in a society strongly affected by population aging, as is the case of Moldova, many households rely on pensions as their main source of income.

The rest of the paper is structured as follows. Section 2 provides a description of the key components of the tax and transfer system in Moldova that the analysis models in subsequent sections. Section 3 introduces in some detail the methodology employed by the CEQ analysis, and the underlying data sources, assumptions and limitations. The main results of the analysis are presented in Section 4. These results are descriptive, in the sense that they describe the incidence and the poverty and inequality effects of various components of the fiscal system, as observed in the data. Section 5 presents some conclusions and policy recommendations.

2. Revenues and expenditures of the general government

Until the mid-2000s, Moldova had a consolidated fiscal position, with the deficit being either positive or in the lower negative digits of up to -0.5 percent of GDP. Expenditures increased from 35.1 percent of GDP in 2004 up to 43.7 percent in 2007, the increase being mirrored by a similar increase in government revenues (Figure 4). In 2008 the situation changed dramatically, following both fiscal reforms such as the introduction in 2008 of zero-rate Corporate Income Tax (CIT) for reinvested profits, and higher spending commitments. In the wake of the financial crisis, total revenues, which declined already in 2008, experienced a much more drastic contraction in 2009, when the economy found itself in a recession. Amid domestic political turbulence, the government was not able to rationalize its expenditures, with a resulting deficit of -6.4 percent GDP in 2009. The situation stabilized after 2011, with the deficit hovering around -2.2 percent. A more drastic consolidation took place in 2017, when the deficit reached -1 percent of the GDP.

Figure 4. General government budget indicators, % of GDP



Source: IMF.

2.1. Main sources of revenues

With a total share of around one third of the total revenues, the Value Added Tax (VAT) is by far the most important revenue source (Table 1). Over the years, the VAT has also been the most stable source of funding.² The VAT system in Moldova is rather complex, and includes 3 different rates. The standard rate is 20 percent. A reduced 8 percent rate applies for supplies of bread and bakery products, a number of medical drugs, natural gas,

² Calculated as standard deviation of the nominal levels for the period 2004-2017 divided by average level for the period.

a number of primary agricultural products, sugar, and biofuel. As of October 1, 2018, a new 10 percent rate has been introduced for hotel, cafeteria and restaurants services. Exemptions and exceptions to the general VAT regime abound and there is also a special VAT treatment regime for investments.

Mandatory contributions to the State Social Insurance Budget are the second most important source of budgetary revenue, with a share of 22 percent of total revenues in 2017; it is also the second most stable source since 2004. The third most important source of revenues is excise taxes, accounting for around 11 percent of total revenues. The list of goods subject to excise taxes include alcoholic beverages, processed tobacco goods, oil and derivatives, caviar and caviar substitutes, perfumes, furs and cars.

The Personal Income Tax (PIT), the CIT and payments for mandatory health insurance account for around 7 percent of total revenues each. For the year 2018, health insurance contribution rates have been maintained at the level of 9 percent of the labor remuneration fund and are split into two equal contributions of 4.5 percent for employees and 4.5 percent for employers. Until October 1, 2018, the PIT was a progressive two-tier system with 7 percent for the portion of annual income up to MDL 33,000 and 18 percent for incomes above that threshold, while the CIT was set at 15 percent. As part of the fiscal reforms package adopted in 2018, a flat income tax rate of 12 percent was introduced. The amount of income exempt from PIT was approved at the level of the official minimum subsistence level (MDL 24,000 per year). Income obtained from farming is taxed at 7 percent. The PIT and CIT were the most volatile sources of budgetary income between 2004 and 2017.

Table 1. General government revenues in Republic of Moldova, year 2017.

<i>Item</i>	<i>Million MDL</i>	<i>% of GDP</i>	<i>% of total revenues</i>
Revenues	53377.6	35.6	100.0
Taxes and fees	34475.8	23.0	64.6
Income tax	7722.8	5.1	14.5
<i>PIT</i>	3648.9	2.4	6.8
<i>CIT</i>	4073.9	2.7	7.6
Taxes on property	546.2	0.4	1.0
Taxes on goods and services	24615.7	16.4	46.1
<i>VAT</i>	16870.1	11.2	31.6
<i>Excises</i>	5950.0	4.0	11.1
<i>Other taxes on goods and services</i>	1795.6	1.2	3.4
Taxes on international trade and transactions	1591.1	1.1	3.0
Contributions and payments on mandatory insurance	15512.4	10.3	29.1
Contributions for mandatory state social insurance	11864.0	7.9	22.2
Payments for mandatory health insurance	3648.4	2.4	6.8
Grants	1008.8	0.7	1.9
Other revenue	2380.6	1.6	4.5
Property income	425.4	0.3	0.8
Sales of goods and services	1394.3	0.9	2.6
Fines and penalties	364.0	0.2	0.7
Voluntary donations	142.2	0.1	0.3
Other revenues not included elsewhere	54.7	0.0	0.1

Note: The National Bureau of Statistics calculated the semi-definite GDP figures for the year 2017 according to the UN System of National Accounts calculation methodology, version 2008 and the European System of Accounts, version 2010 (SNA, UN-2008/SEC-2010). For the sake of comparability, the GDP percentage in this table and elsewhere in the text are calculated using the previous GDP methodology. The difference between GDP calculated based on the updated and previous methodology is +17 percent.

Source: Ministry of Finance of the Republic of Moldova, "Report on execution of the 2017 National Public Budget", <http://mf.gov.md/ro/download/file/fid/12576> and authors' calculations.

Combined, these six revenue sources – VAT, social insurance, excises, CIT, PIT and health insurance contributions - currently generate around 86 percent of the total revenues of the general government budget and the general trend has been that of consolidation of the total budgetary revenue around these core taxes.

2.2. Main types of expenditures

In 2017, total expenditures of the general government in Moldova stood at MDL 54.5 billion, equivalent to 36.3 percent of GDP. The bulk of government expenditures are designated for social area policies (Table 2).

Table 2. General government expenditures by functional classification, and sources of deficit financing, year 2017

Item	Million MDL	% of GDP	% of total expenditures
Expenditures and non-financial assets	54522.4	36.3	100
General public services	5679.1	3.8	10.4
Defense	568.3	0.4	1.0
Public order and safety	4041.5	2.7	7.4
Economic affairs	5424.9	3.6	9.9
Environmental protection	146.7	0.1	0.3
Housing and community amenities	1315.3	0.9	2.4
Health	7268.7	4.8	13.3
Recreation, culture and religion	1333.4	0.9	2.4
Education	9681.3	6.4	17.8
Social protection	19063.2	12.7	35.0
Budgetary deficit (-) / surplus (+)	-1144.8	-0.8	
Sources of financing	1144.8	0.8	
Net acquisition of financial assets other than cash	-271.4	-0.2	
Net incurrence of liabilities	3420.6	2.3	
Net changes in the stock of cash	-2004.4	-1.3	

Source: Ministry of Finance of the Republic of Moldova, "Report on execution of the 2017 National Public Budget", <http://mf.gov.md/ro/download/file/fid/12576> and authors' calculations.

Social protection expenditures account for 35 percent of the total budgetary expenditures, followed by education (17.8 percent) and health protection (13.3 percent). Combined, expenditures on these three spheres account for two-thirds of the total, signaling the social orientation of the budget. As official data for 2017 are still not available, Table 3 presents the details of expenditures for the three sectors for the period 2014-2016. Outpatient services are the costliest item of the health protection budget, accounting for around 40 percent of the total resources, followed closely behind by outpatient health services. In the education sector, secondary education accounts for the largest, albeit declining over time, share of total expenditures (around 45 percent), whereas the pre-primary and primary education absorbs around 28 percent of the total resources.

Table 3. Detailed structure of the social area expenditures for the years 2014-2016, MDL and %

	2014	2015	2016
Total expenditures, MDL million	44480.2	46540.1	48462.6
Health expenditures, MDL million	5890.3	6455.9	6505.5
<i>Including, % of health</i>			
Medical products, appliances, and equipment	0.0	0.0	0.5
Outpatient services	34.7	35.9	39.6
Hospital services	37.4	37.3	45.4
Public health services	20.2	20.0	10.3
R & D Health	0.0	0.0	0.5
Health not elsewhere classified	7.7	6.8	3.5
Education expenditures, MDL million	7823.6	8462.0	8558.7
<i>Including, % of education</i>			
Pre-primary and primary education	27.1	29.2	28.2
Secondary education	51.0	49.3	45.5
Postsecondary nontertiary education	5.6	5.4	10.0
Tertiary education	9.0	8.7	8.9
Education not definable by level	0.2	0.2	5.4
Subsidiary services to education	0.0	0.0	1.1
R & D Education	0.0	0.0	0.0
Education not elsewhere classified	7.1	7.1	0.9
Social protection, MDL million	14145.0	15716.6	17267.7
<i>Including, % of social protection</i>			
Sickness and disability	18.3	13.3	15.2
Old age	48.4	57.9	64.2
Survivors	1.1	1.1	0.7
Family and children	8.9	6.4	9.1
Unemployment	0.5	0.5	0.4
Housing	1.5	0.9	0.0
Social exclusion not elsewhere classified	19.0	9.9	1.4
R & D Social protection	0.0	0.0	0.0
Social protection not elsewhere classified	2.3	9.9	8.8

Source: budgetary executions reports for the years 2014-2016, Ministry of Finance of the Republic of Moldova

Almost two-thirds of the social protection total financial envelope are used for old age pensions, and the share is rapidly growing, following the population aging shifts in the demographic trends, as well as the out-migration of the population, the growth in informal employment and, since 2017, the more generous pension-calculation policy. Sickness and disability-related payments represent about 15 percent of the total resources allocated for social protection in the year 2016, while family and children-related ones, around 9 percent.

The social protection system in Moldova is organized in two pillars: social assistance, which includes social payments and social services, and social insurance. In 2017, the total of transfers made by the social protection system amounted to MDL 17.3 billion, or 13 percent of GDP. Social insurance accounts for around 65 percent of total resources, while social assistance – for the remaining 35 percent. Most of the payments for both social assistance and social insurance are made from or through the State Social Insurance Budget (SSIB) which is managed by the National Chamber of Social Insurance. The amount and structure of expenditures presented in the Table 4 reflects a rather complex system, with many duplicating categories of payments and with many individuals apparently benefiting from multiple benefits.

Table 4. Expenditures for social protection, year 2017

Item	MDL billion	% of ancestor category	Number of beneficiaries, 1 of January 2018	Comments
SOCIAL PROTECTION TOTAL	17.182	100		
Social insurance benefits	12.242	71.3		
<i>Social insurance pensions</i>	10.611	86.7		
<i>Old age pensions</i>	8.577	80.8	532976	
<i>Disability pensions</i>	1.609	15.2	128549	
<i>Other pensions</i>	0.427	4.0	30671	Special pensions for prosecutors, judges, MPs, members of the Government, civic aviation employees.
<i>Social insurance compensations</i>	1.614	13.2	394792	Work-related injuries or sicknesses, work inability, maternal and paternal leaves, unemployment benefits.
<i>Other social insurance benefits</i>	0.017	0.2	3737	Includes mainly payments for sanatorium treatment
Social assistance benefits	4.939	28.7		
<i>Social assistance pensions</i>	1.311	26.6	31828	Pensions to participants of liquidation of consequence of the Chernobyl disaster, MPs, military, prosecutors, etc.
<i>Supplements to the social assistance pensions</i>	0.001	0	Not known	Dependents of the deceased military personnel
<i>Social assistance compensations</i>	0.433	8.8	66215	Includes mainly family and children related benefits and benefits for athletes
<i>Allocations</i>	0.581	11.8	130888	Support to those not meeting conditions to receive state insurance pensions, supplementary social protection of some categories, social benefits to population in the Transnistrian region, support to those with state merits.
<i>Compensations</i>	0.058	1.2	2279	Mainly, compensations to participants of liquidation of consequence of the Chernobyl disaster and their family.
<i>Material aid</i>	0.814	16.5	53000 families	Provision of the means-tested social aid, provision of aid during in the cold period of the year, provision of support for funerals of uninsured persons.
<i>Other social assistance benefits</i>	1.740	35.2	Around 650000 persons.	Closing the gap up to the minimum pension, supplementary pensions to some categories of population, sanatorium treatment, summer camps.

Source: National Chamber of Social Insurance, 2017 Annual Report.

2.3. Social insurance

Social insurance policy is funded from the State Social Insurance Budget (SSIB) which is managed by the National Chamber of Social Insurance. SSIB expenditures related to social insurance are financed from the contributions of insured persons and their employers', however, the SSIB's own revenues cover only a part of the expenditures, the rest being financed by the state budget. According to the financial plan for 2018, out of the MDL 11.1 billion to be spent for old age pensions, MDL 1.0 billion are to be covered from state budget transfers.

Social insurance in Moldova is organized as a pay-as-you-go system. Contributions are paid by both employer and employee. Until the 2018 tax reform, the employer's contribution for mandatory social insurance was 23 percent, which as of October 1, 2018 has been brought down to 18 percent. The employees' share is 6 percent. However, a number of sector-specific regimes apply. In the agricultural sector the employers pay contributions of 22 percent, of which 6 percent are subsidized from the state budget, the employees pay 6 percent. In the civic aviation sector,

the employer's contribution is 33 percent, the employees' share is 6 percent. Very generous conditions apply to employees of the residents of the IT parks. Owners of individual enterprises, notaries, bailiffs, lawyers, authorized administrators and natural persons undertaking independent activities in the retail sector and entrepreneurial patent holders pay annually a lump sum individual contribution (MDL 7,512 in 2017). Persons deriving their income by working on own land may pay a lump sum of MDL 1,920.

Old age pensions are the main component of the social insurance part of the SSIB (70 percent). However, pensions are rather small and the replacement rate is only around 26 percent. Two criteria apply for the person to be entitled to receive an old age pension: retirement age and period of contribution. Until 2017 the standard retirement age was 57 years for women and 62 years for men. A gradual increase and convergence of the retirement ages for men and women has started in 2017, so that it reaches 63 years for men by July 1, 2019 and 63 years for women by July 1, 2028. By 2017, the general period of contributions was 30 years for women and 33 years for men. As in case of the retirement age, the contribution period has been set to increase. It is already 34 years for men, and will reach 34 years for women by July 1, 2024.

As part of the pensions system reform, and with the purpose of increasing the replacement rate, a new formula for calculation of the pension has been introduced:

$$P = 1.35\% * T_t * \frac{\sum \frac{con_i}{C_i} * K_{vi}}{n}$$

Where:

- P - the amount of the pension;
- 1.35% – accumulation rate for the contribution years realized after January 1, 1999;
- T_t – contributions period, years;
- con_i – sum of individual contributions paid for the period i ;
- C_i – individual contribution quota established for the period i ;
- K_i – valorization coefficient established for the period i ;
- n – number of months for which contributions have been calculated and paid.

The part of pension paid from the SSIB is subject to annual indexation on the basis of CPI inflation (until 2017, the indexation rate was calculated based on both CPI and average wage growth).

2.4. Social assistance

The social assistance system in Moldova includes social payments and social services. Social services are not reflected in the SSIB as they are delivered by local social assistants and are funded from local budgets. Social payments are, in general, very small, around MDL 340 according to data from 2015.

One of the key social assistance benefits is material aid (*Ajutorul Social* in Romanian language). The key purpose of the material aid program is to ensure a guaranteed minimum monthly income (GMMI) to disadvantaged families. The material aid (coupled with the aid provided during the heating season) thus represents a means-targeted social benefit. While it reaches mainly the families from the lower income quintiles, it offers only a limited safety net to the families depending on the benefit – it is a rather small amount of money meant to provide only for the most basic needs. Families entitled to material aid also benefit from fully compensated health insurance. Eligibility conditions involve the following:

- The family must have a monthly income below the level guaranteed by the state for that family;
- All adults in the family have either to be employed, officially registered as unemployed (and do not refuse to take part in community works) or are unable to work due to health conditions;
- The family has to pass the wealth test (below 80 points).

The amount of GMMI for each family member is established as follows:

- 100 percent of the GMMI for the solicitor;
- 70 percent of the GMMI for other adults in the family;
- 50 percent of the GMMI for each child;
- Plus 30 percent of the GMMI for every adult with disability;

- Plus 50 percent of the GMMI for every child with disability;
- Plus 10 percent of the GMMI if the adult with disability is the only adult in the family.

When calculating the available global income for the applicant family, a number of sources of income are partly or entirely not accounted for, including:

- State financial support provided to the beneficiaries of social pensions or allocations in the amounts not exceeding MDL 1,500;
- MDL 200 from the wage declared by every employed person in the applicant family;
- MDL 200 from the child benefit for every child in the applicant family;
- Material support provided to the vulnerable persons from the applicant family from the local budgets or from the republican fund for social support of the population;
- For the families composed only of work-unable persons (children, adults with disabilities, persons aged above 75 years (62 for the aid for the cold period of the year)) – income derived from agricultural activities.

As of April 1, 2018, the GMMI has been established in the amount of MDL 1,025, up from MDL 961 in 2017. The increase follows the annual indexation based on the CPI index for the previous year (106.6 percent in 2017).

2.5. In-kind benefits: Health and education³

CEQ's analyses of the distribution of government expenditures on education and healthcare are based on the BOOST databases,⁴ along with other official sources of public finance data (e.g. budget execution reports of the National Health Insurance Fund). The BOOST data represents a comprehensive source of information on the finances of local governments in Moldova. BOOST dataset is compiled based on the raw data extracted from the national Financial Management Information System (FMIS). A typical BOOST consolidates the raw data into one single, coherent database that can be analyzed along various budget dimensions – administrative levels, functions, costing items, activities, programs, budget entities, as well as sources of financing of government expenditures.

About 18% of general government spending in 2017 or MDL 9.681 billion went to the provision of education in the country, while public spending on health care absorbed 13% or MDL 7.268 billion of total government spending in the same period (see Table 5). The lion's share of education expenditures is channeled through the budgets of local governments, which collectively account for more than ¾ of total spending, according to the 2017 sector execution data, with the remainder being channeled through the State budget. On the contrary, health care expenditures are more centralized with 86% of health care spending being directed through the National Health Insurance Company (NHIC). Meanwhile, the State budget accounts for about 12% of total spending on health, with the remaining of 2% going to local governments.

Table 5. General Government Expenditure by Function and Level of Government, 2017.

General Government Expenditure	SSFs	State	Local	Total	
National government functions		4,464,949	1,241,620	5,706,569	10%
Defense		557,406	10,854	568,260	1%
Public order, safety and judicial authority		4,021,082	20,387	4,041,469	7%
Economic activity		4,069,536	1,355,277	5,424,813	10%
Environmental protection activity		92,164	54,514	146,678	0%
Housing and municipal economy		175,962	1,139,399	1,315,360	2%
Healthcare	6,260,800	866,589	141,300	7,268,689	13%
Physical and intellectual development system		497,119	836,333	1,333,453	2%
Education		2,223,457	7,457,922	9,681,380	18%
Social protection and social security system	17,614,500	445,538	1,003,173	19,063,211	35%
Total	23,875,300	17,413,803	13,260,779	54,549,881	100%
<i>healthcare % of GG expenditure</i>	<i>86.1%</i>	<i>11.9%</i>	<i>1.9%</i>	<i>100.0%</i>	
<i>education % of GG expenditure</i>		<i>23.0%</i>	<i>77.0%</i>	<i>100.0%</i>	

Source: Moldova BOOST data.

³ This section was prepared by Irina Capita.

⁴ The analysis relies on two BOOST data sets for Moldova – the core BOOST database available on the Ministry's of Finance website, available at <https://mf.gov.md/en/buget/transparen%C8%9Ba-bugetar%C4%83/baza-de-date-a-cheltuielilor-publice>, and the Health Moldova BOOST data set developed as part of the 2018 Health Public Expenditure Review for Moldova.

Total expenditures are the sum of direct expenditures and intergovernmental expenditures and represent final sector expenditures. All sector expenditures can be broken down into recurrent expenditures used to pay for wages and salaries to employees, purchase goods and services, pay for repairs, utilities, etc., and capital outlay expenditures including spending on capital repairs, purchase of fixed assets, land, etc.

The education and healthcare expenditure figures can be further broken down by sub-functions and rayons. To align better the BOOST/Treasury data with the information available in the Household Budget Survey for Moldova, the analysis allocates regionally disaggregated sectoral spending to custom variables, following the logic of the survey. Each variable in Table 6 can be briefly summarized as follows:

- **“Health: in-hospitals”**: the category covers government spending on in-patient care. The category generally includes government spending on in-patient care services provided in rayons, as well as general and specialized in-patient care services provided in the Municipality of Chisinau. About 63% of overall in-patient care expenditures took place in the capital city, being driven primarily by the budgets of in-patient care providers of republican significance (e.g. national hospitals, institutes, etc.).

- **“Health: out-of-hospitals”**: the category is comprised of government spending on several budget sub-functions, namely – “30 Outpatient specialist care”, “31 Laboratories/diagnostics”, “40 Outpatient primary care”, “41 Home care”, and “70 Emergency care”. About 48% of overall combined expenditures on these sub-functions were spent in the Municipality of Chisinau, largely due to the providers of national significance located in the capital of the country.

- **“Education: preschool”**: the variable captures government spending on pre-school education institutions. About 27% of expenditures on pre-school education in 2017 were spent in the Municipality of Chisinau, mainly due to the greater number of preschoolers residing within the boundaries of the municipality.

- **“Education: school”**: the category captures government spending on primary schools, gymnasiums and lyceums. When combined, these categories can be used as a proxy of school education in Moldova (i.e. grades I-XII), for children from about 7 to 18 years old.

- **“Education: after school (below university)”**: the variable is comprised of government spending on vocational and jobs schools, as well as colleges.

- **“Education: university”**: this variable includes government spending on higher education institutions.

The latter two categories cannot be regionally disaggregated. Since almost all higher education institutions are located in the capital of the country and other big cities, we allocated them to receivers at the national level.

It should also be noted that not all sector expenditures from the BOOST datasets were allocated to the variables identified in the survey. In the case of education, for example, about 9% of overall local government spending on education has not been attributed to any of the variables. Most of the unallocated spending consists of administrative expenditures and other un-allocable items (i.e. capital investments in health care).

The information presented in Table 6 focuses on 2017, the most recent year for which relevant regionally disaggregated sectoral expenditure data were publicly available⁵ when the study was carried out. Since the detailed regionally disaggregated health expenditure data was available only for 2016, the analysis adjusted the regional composition of spending by sub-functions to match the NHIC’s annual budget execution statements for 2017.

⁵ In other words, the more recent year for which BOOST data for Moldova were available.

Table 6. Government spending on selected education and healthcare categories by rayons, 2017.

Rayon name	Health: in-hospital	Health: out-of-hospital	Education: pre-school	Education: school	Education: after school (below university)*	Education: university*
Chisinau	2,076,807,641	1,441,852,550	668,855,693	966,981,087		
Balti	259,915,202	104,610,430	104,758,363	141,548,897		
Anenii Noi	22,591,528	51,719,704	60,918,062	94,487,214		
Basabareasca	9,905,214	16,826,202	19,056,165	27,978,587		
Briceni	20,351,008	48,462,307	43,830,870	89,577,673		
Cahul	56,116,420	55,795,467	93,959,452	147,927,380		
Cantemir	21,627,265	33,871,642	50,628,995	92,703,931		
Calarasi	27,337,597	48,387,375	50,397,057	93,832,413		
Causeni	34,824,975	46,112,381	65,318,539	128,565,667		
Cimislia	22,394,238	33,091,168	35,117,544	63,369,266		
Criuleni	25,091,920	45,420,464	57,795,729	91,188,038		
Donduseni	17,426,586	26,422,559	22,866,175	46,295,380		
Drochia	33,917,845	51,571,574	61,443,765	95,044,266		
Dubasari	-	20,550,477	26,700,361	44,200,661		
Edinet	38,496,529	46,863,833	51,754,393	90,603,035		
Falesti	28,755,028	49,508,736	61,165,229	103,413,389		
Floresti	41,571,606	51,380,931	44,719,894	107,204,000		
Glodeni	24,239,125	38,727,658	39,349,135	73,325,399		
Hincesti	38,368,139	58,050,672	70,894,023	136,848,946		
Ialoveni	15,888,049	56,556,626	86,530,393	120,776,620		
Leova	19,569,760	27,793,828	32,252,325	80,599,575		
Nisporeni	22,177,157	36,314,039	36,741,122	89,035,526		
Ocnita	19,585,740	30,870,384	27,574,563	57,314,753		
Orhei	60,700,959	67,889,463	82,061,959	145,916,263		
Rezina	17,683,663	29,453,808	38,669,058	65,264,577		
Riscani	27,082,118	41,516,540	39,649,525	95,960,225		
Singerei	26,456,715	54,876,713	57,927,284	114,120,399		
Soroca	39,369,132	60,965,404	60,989,476	106,857,791		
Straseni	22,061,495	53,706,036	72,081,589	115,923,886		
Soldanesti	16,889,493	22,717,887	28,141,567	54,957,803		
Stefan-Voda	22,949,131	43,255,753	52,011,574	89,684,517		
Taraclia	14,111,223	25,064,990	30,093,292	50,240,401		
Telenesti	21,024,234	38,188,483	43,429,688	88,037,289		
Ungheni	48,112,320	69,825,832	83,891,369	155,504,589		
ATU Gagauzia	78,529,620	96,334,319	144,924,656	198,653,872		
Total	3,271,928,674	3,024,556,233	2,546,498,882	4,263,943,313	709,864,711	803,200,975

Notes: * - allocated at the national level

Source: authors' calculations using Moldova BOOST data.

3. Methods, data, and key modeling assumptions

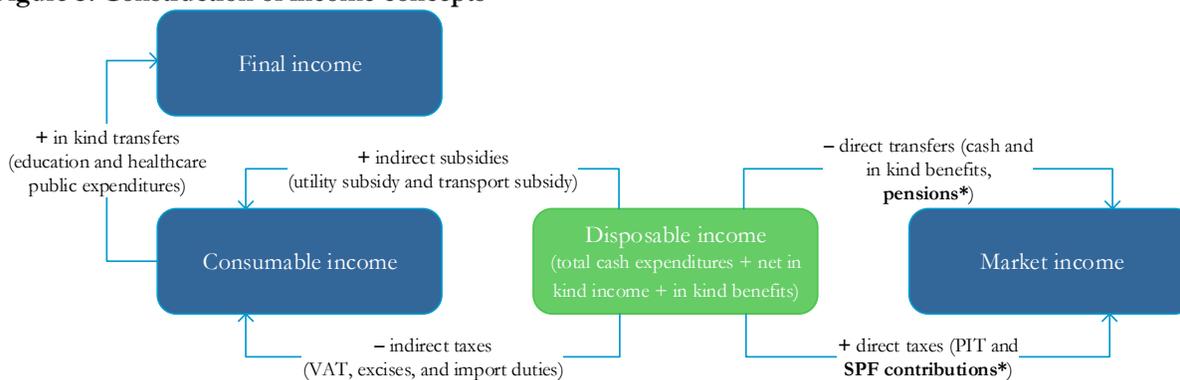
3.1. Construction of the main income concepts

This paper employs the CEQ framework for fiscal incidence analysis to evaluate the impact of fiscal policy on poverty and inequality in Moldova. In order to do this, the methodology requires allocating taxes and benefits (both cash and in-kind) to individuals from a representative sample of the population in a household survey (here, the Household Budget Survey for 2017), such that one can compare incomes before taxes and transfers with incomes after taxes and transfers (Lustig, 2018) and (Figure 5). Because for each separate income concept it is possible to compute statistics such as the poverty rate, or inequality indices, comparisons across different income concepts thus allow for an assessment of marginal contributions of individual taxes and expenditure programs to poverty and inequality alleviation. In addition, because each program and tax is allocated to households in the survey sample, this also allows for insight into the incidence of various taxes and programs across different population groups; in other words, one can construct a profile of contributors and beneficiaries of different programs.

The CEQ methodology relies on four main income concepts (Figure 5). The point of departure is *market income*, i.e. household income before any tax-benefit interventions have taken place. It comprises income from all forms of employment, capital income (rent and dividends) and private transfers. The next income concept can be defined by augmenting market income with pensions, i.e. *market income plus pensions*, which includes contributory pensions

and excludes the respective pension contributions. Continuing from *market income plus pensions*, if we subtract direct taxes and social insurance contributions other than pension ones and add direct cash transfers (and other social benefits except pensions) we arrive at *disposable income*. Disposable income is typically the key income concept in standard analyses of poverty and inequality, and as such, the fiscal analysis typically stops here. However, we compute two further income concepts. By subtracting indirect taxes (VAT and excises) and adding subsidies we arrive at *post-fiscal income*, which reflects the actual amount of market goods and services consumed by households (sometimes this is also referred to as *consumable income*). Finally, we define *final income* as one that includes the cash equivalent of the cost of public health and education services consumed by households.

Figure 5. Construction of income concepts



Note. * Pensions and SPF contributions are included into direct transfers and taxes respectively only within PGT approach.
Source: own elaboration.

Given the significant weight of the pension system, both as a source of revenue and as a component of social spending, it can have an important redistributive effect. The CEQ methodology allows us to consider two extreme assumptions with respect to how pensions are modeled: contributory pensions are treated as direct transfer, contributions to the pension system are subtracted from gross income - *pension as government transfers (PGT) scenario*; and contributory pensions are treated as a part of market income, contributions to the pension system are treated as lifetime earnings and not subtracted from gross income - *pension as deferred income (PDI) scenario*. In reality, the distinction between contributory and non-contributory pensions can be arbitrary, given that pensions are funded, in part, through the state budget. The two scenarios can thus be considered as an upper and a lower bound of a true estimate of the distributional impact of the pension system. The analysis in this paper mostly relies on the PGT scenario (this is also the case in recently completed CEQ analyses for Belarus and Ukraine, for instance), however, the results for the alternative could be easily received if market income plus pensions is considered as initial level.

The CEQ methodology relies on a number of key assumptions that should be kept in mind when interpreting the results of the analysis. For instance, the analysis is based on economic rather than statutory tax incidence, hence, we assume that individual income taxes and contributions (both by employee and employer) are borne by labor in the formal sector and that consumption taxes (on both final goods and inputs, using input-output tables for the latter) are fully shifted forward to consumers. This is equivalent to assuming that the supply of labor and demand for goods and services are perfectly inelastic⁶ (Lustig, 2018). In addition, the welfare indicator used is income per capita in accordance with the national statistical practice. Finally, it is worth noticing that CEQ framework is aimed at incidence analysis using amounts reported in the survey, therefore the annual amounts of tax revenues and social spending do not necessarily coincide with those found in other sources, in particular National Accounts.

One of the objectives of the CEQ is to provide insights into the progressivity / regressivity of taxes and transfers. We rely on common definitions of tax progressivity (see Box 1 for more details), consistent with high-income groups facing a higher average tax rate than low-income groups (relative progressivity). Similarly, cash transfers are considered to be progressive when they account for a larger share of the low income groups' income (Joumard, 2012). In addition, we also compute Kakwani indices of progressivity (Kakwani, 1977; Lustig, 2018) – a positive

⁶ The economic incidence, strictly speaking, depends on the elasticity of demand and/or supply of a factor or a good, and the ensuing general equilibrium effects. In essence, the accounting approach implicitly assumes zero demand price and labor supply elasticities, and zero elasticities of substitution among inputs, which may not be far-fetched assumptions for analyzing effects in the short run, especially when changes are small (Lustig, 2018).

value of the Kakwani index corresponds to a progressive tax or transfer, while for regressive taxes or transfers the index takes on negative values. Deciles are defined based on disposable income plus taxes for direct taxes, disposable income minus transfer for direct transfers and pensions, and pure disposable income in other cases.

Box 1: Progressivity of taxes and transfers – main principles

One of the ways of determining the effectiveness of different programs in reducing inequality is through the analysis of *progressivity* of programs. In this analysis, the degree of progressivity is determined by the share of benefits (or taxes) going to different population groups (such as deciles) relative to their respective share of income. Thus, a program can be deemed to be progressive if the share of benefits (as a proportion of pre-fiscal income) decreases with income; a tax can be deemed to be progressive if the share of tax (or the tax rate) increases with income. Progressivity, thus defined, is known as *relative* progressivity. Alternatively, a program can be deemed to be *absolutely* progressive if the per capita amount decreases as income rises.

The CEQ analysis relies mainly on the concept of relative progressivity, which is also consistent with the principle that a transfer or tax is progressive (regressive) if applying that tax or transfer alone results in, conditional on no re-ranking, a less (more) unequal distribution than that of pre-fiscal income.

One of the (relative) progressivity indicators is the *Kakwani* index, defined as the difference between the concentration coefficient of the tax and the Gini for market income in the case of taxes, and as the difference between the Gini for market income and the concentration coefficient of the transfer in the case of transfers (Kakwani, 1977). Thus, the Kakwani index will be positive (negative) if a tax is globally progressive (regressive), where global progressivity (regressivity) is in terms of the concentration curve associated with the particular tax lying everywhere below (above) the prefiscal income Lorenz curve. Similarly, in the case of transfers, a transfer is globally progressive (*in relative terms*) if its concentration curve lies everywhere between the prefiscal income Lorenz curve and the 45-degree line. If the concentration curve of a transfer lies everywhere above the 45-degree line, the transfer is globally progressive *in absolute terms*.

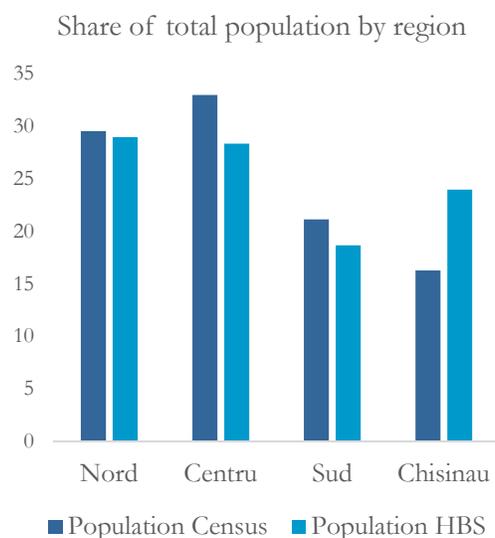
Source: Lustig (2018)

3.2. Data and consistency between administrative and survey information

The analysis is based on the Household Budget Survey (HBS) for 2017 -- the latest year of microdata available at the time of analysis. This is the official survey conducted by the National Bureau of Statistics of the Republic of Moldova for purposes of poverty and inequality monitoring, among other desiderata. The HBS survey sample covers the whole of Moldova's territory, with the exception of the Transdnistria region. The statistical population includes households / individuals who are citizens of Moldova, including persons absent for long periods of time (exceeding 1 year) if they maintain family ties to the households from which they originate. The HBS sample is drawn from the master sample based on the 2004 Population Census, comprised of 129 localities grouped in 150 primary sampling units. The sample is stratified based on geographic criterion (North, Center, South regions), town size and type of area (urban/rural). In 2017, the survey sample covers 5,149 households or 11,772 individuals and is representative at the national and regional levels.

One of the implications of the HBS sample being based on the 2004 Population Census, and not on the 2014 Population Census (the new sampling frame, taken from the 2014 Population Census, will start being used from the 2019 HBS round onward), is that there are some discrepancies between the weighted population distribution in the HBS, and the population distribution from the 2014 Census. In addition to the difference in the estimate of the population total between the two data sources, the distribution of the population across regions also differs between the HBS and the 2014 Population Census, with a somewhat higher share of the population in the HBS being from Chisinau, and relatively smaller shares from the other statistical regions for the same year (Figure 6). These differences stem primarily from the fact that Moldova's demographics have been affected by significant migration flows, which complicates capturing population dynamics during the ten-year intercensal periods. It is difficult to speculate on the precise ways in which the CEQ analysis in particular may be affected by the sample discrepancies, and an update of the analysis based on HBS data from 2019, based on the new sample frame, would be instructive in this regard.

Figure 6: Population differences between 2014 Census and 2014 HBS



Source: Authors' estimates based on HBS and Population Census data.

The HBS questionnaire includes multiple questions about incomes, expenditures of households, as well as some social, demographic and labor market characteristics. The CEQ analysis relies as much as possible on information about social transfers and taxes reported in the survey. If the survey does not include questions on certain items, the values were either simulated or imputed. The numbers on total fiscal revenues and expenditures were taken from the administrative data provided by Ministry of Finance, Ministry of Health, Labour and Social Protection and National Bureau of Statistics of the Republic of Moldova.

In the analysis we include all existing social contributions and almost all direct taxes applied to households (this amounts to about 93 percent of total revenue collection for these types of taxes). For indirect taxes the coverage is also very high – 97 percent of total indirect taxes are reflected in the analysis. For social policy this ratio is 91 percent and for in-kind health and education services – 86 percent.

Most of the programs included in the analysis match the administrative numbers fairly well (Table 7). Direct taxes and social contribution cover 82-87 percent of the aggregate administrative numbers for those items. Some mismatch could be explained by the natural bias in the survey sample and some income misreporting at the top of the distribution. Contributory pensions are overestimated quite significantly, while other direct transfers show lower numbers than in aggregate statistics. This could be explained by some flaws in the sample frame, that does not fully reflect the current demographic structure of the population. Indirect taxes included in the analysis represent only half of the total collection from these sources. However, this is not a signal of underestimating those aggregates, because not all VAT and especially import duties fall onto consumers and that is why these numbers are not expected to match completely. The in-kind health and education benefits were scaled down intentionally using the ratio between total expenditures in HBS and National Accounts as it is advised by the CEQ methodology (Lustig, 2018).

Table 7. Comparison of numbers from administrative statistics and calculated in the CEQ analysis.

	administrative data (a), total in the analysis (b), ratio (b)/(a),		
	mln MDL	mln MDL	percent
Wages	40,159	39,040	97
Social insurance contributions (employee's part)	2,488	2,670	107
Medical assistance contributions (employee's part)	1,771	1,601	90
Social insurance contributions (employer's part)	9,373	7,030	75
Medical assistance contributions (employer's part)	1,771	1,375	78
Total social contributions	15,404	12,677	82
Personal income tax	3,649	3,234	89
Withhold income tax	n/a	10	n/a
Property tax	194	87	45
Patent tax	55	73	134
All direct taxes excl SSC	3,897	3,404	87
Labor pensions	8,577	15,459	180
Other contributory pensions	2,034	2,859	141
Total contributory pensions	10,611	18,318	173
Social pensions	1,311	345	26
Material aid	814	1,051	129
Unemployment benefits	1,795	840	47
Scholarships	30	15	49
Children and maternity benefits	115	234	203
Other benefits	2,622	1,986	76
All direct transfers (excl. pensions)	6,686	4,471	67
Value added tax	16,870	8,967	53
Import tariffs	5,950	1,684	28
Excise tax	1,068	705	66
Total indirect taxes	23,888	11,356	48
In-hospital health	3,272	2,079	64
Out-of-hospital health	3,025	1,922	64
Total health	6,296	4,001	64
Primary education	2,546	1,618	64
Secondary education	4,264	2,709	64
Post-secondary education	710	451	64
Higher education	803	510	64
Total education	8,324	5,289	64

Source: Ministry of Finance, National Office for Social Insurance, authors' calculations using HBS-2017 data.

Main summary statistics on household and income structure are presented in Table 8. As can be seen, the families with lowest incomes before any interventions are families with children and pensioners, that do not have much of market incomes. These categories as well as rural residents also rely on remittances and incomes from agriculture more than other groups of population.

Table 8. Family and income structure by deciles and types of households.

	average number of people in the household			Average net market income,	average share of (in percent)		
	total	children	pensioners	leu per person per month	wages	remittances	incomes from agriculture
deciles by market income							
1	2.0	0.2	1.0	49	0.2	3.6	92.5
2	2.6	0.6	0.8	281	6.7	11.8	76.2
3	3.2	1.1	0.5	608	23.7	22.4	43.2
4	3.5	1.2	0.3	916	37.8	23.3	26.6
5	3.6	1.2	0.3	1202	47.9	22.0	18.3
6	3.5	1.1	0.2	1514	54.8	19.5	13.7
7	3.2	0.9	0.2	1828	60.6	17.4	10.0
8	3.1	0.9	0.1	2219	65.3	13.3	7.7
9	2.9	0.6	0.1	2863	74.0	12.9	3.7
10	2.2	0.3	0.1	4695	76.7	11.2	2.3
deciles by market income plus pensions							
1	4.0	1.7	0.2	385	21.4	18.0	50.3
2	3.4	1.2	0.3	658	29.5	16.8	44.1
3	3.1	0.9	0.5	758	30.0	17.8	43.7
4	2.9	0.8	0.6	846	38.6	10.2	43.6
5	3.0	0.8	0.5	1094	44.0	13.9	31.3
6	3.1	0.8	0.5	1327	47.8	16.7	26.5
7	2.9	0.7	0.3	1708	51.7	18.5	17.1
8	2.8	0.7	0.3	2118	58.2	16.5	11.3
9	2.5	0.4	0.2	2752	67.6	16.3	7.0
10	2.1	0.2	0.2	4533	70.1	16.1	3.2
types of households							
two adults (or more) and 1 child	3.7	1.0	0.2	1759	59.8	15.9	15.2
two adults (or more) and 2 children	4.4	2.0	0.1	1475	54.8	15.3	17.5
two adults (or more) and 3+ children	5.8	3.4	0.2	1008	36.1	15.0	31.4
one adult and child(ren)	2.8	1.8	0.0	1726	27.4	51.1	12.5
only working age adults	2.1	0.0	0.0	2278	53.3	13.3	23.6
only pensioners	1.5	0.0	1.5	568	9.7	12.3	69.1
mixed adults, no children	2.5	0.0	1.2	1067	42.3	9.8	41.0
types of location							
big cities	2.8	0.7	0.3	2272	74.2	10.6	2.5
small towns	2.9	0.8	0.4	1659	53.8	15.9	14.7
rural	3.1	0.9	0.4	1324	32.5	18.3	41.7
geographic zones							
north	2.9	0.8	0.4	1377	35.8	16.9	37.0
center	3.1	0.9	0.3	1398	40.0	17.9	31.6
south	3.1	0.9	0.4	1377	36.4	20.5	35.5
Chisinau	2.8	0.7	0.3	2361	75.0	9.0	3.9

Source: authors' calculations using HBS-2017 data.

4. Results and discussion

4.1. Main results – incidence of the tax benefit system

Most households contribute and benefit from the system at the same time, but the net effect is not the same for all. On average, households are net receivers from the tax-benefit system in Moldova - they receive 5 percent of their final income as net benefits from the system (Table 9, Figure 7).⁷ The most important components of the benefit system are pensions (21 percent). Other direct transfers, in-kind education and health benefits are relatively less important (5, 6 and 5 percent of final income respectively). The average burden of social contributions and

⁷ This section relies on the scenario when pensions are treated as transfers. The redistribution effect of the tax-benefit system in Moldova is much smaller in the alternative case when pensions are treated as deferred income. The magnitude of redistribution power under that case could be received from Table 12, if market income plus pension is considered as initial level.

indirect taxes is similar (15 and 13 percent of the final income respectively), while direct taxes are on average account for 4 percent of final income.

The tax-benefit system is quite pro-poor in Moldova in the sense that 60 percent of the population are net recipients and only 40 percent are net payers into the system. However, the degree of reliance on the system varies a lot with income levels. The poorest decile depends almost entirely on transfers and other benefits. Households in this income group get as much as 96 percent of their final income as net benefits. For the second decile this share is almost 80 percent of the total and even in the third decile one receives more than half of one's final income as net benefits (Table 9, Figure 7). Meanwhile, the top two deciles contribute 26 and 36 percent of their final income as net taxes into the redistributive system in Moldova.⁸

The relative importance of each intervention also varies significantly by income groups. Pensions and other direct transfers are highly progressive in the sense that their shares in final income decrease with market income level. Lower deciles defined by market income rely on these two interventions – their shares in the final income for the bottom decile are almost 91 and 64 percent respectively (Table 9, Figure 7). For the top decile, their role is much smaller – together they account for less than 6 percent of the final income. In-kind health benefits are also more important for the lower part of the original income distribution. The middle of the distribution benefits most of all from in-kind education transfers. They account for 15 and 13 percent of final income for the third and fourth deciles respectively and only 2 percent of final income for the bottom and top deciles. Direct taxes and pension contributions are highly progressive in the sense that higher deciles pay a much higher share of their income for these types of taxes, while indirect taxes (mainly VAT) are regressive – lower deciles pay up to 20 percent of their final income, while top deciles only 10 percent.

Table 9. Incidence of main components of tax benefit system by deciles, share of final income, percent.

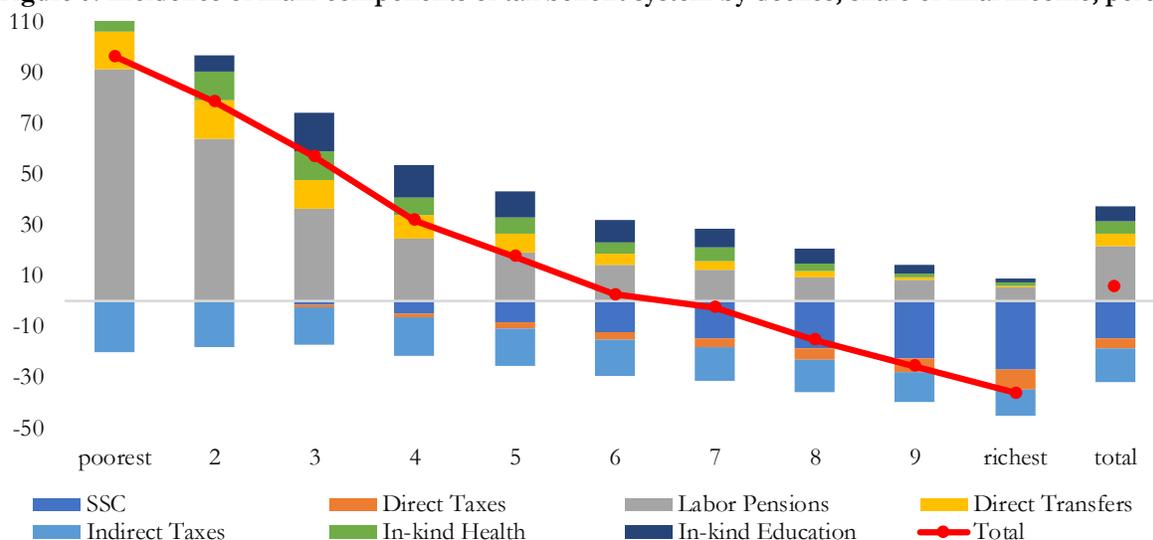
decile	SSC	Direct Taxes	Labor Pensions	Direct Transfers	Indirect Taxes	In-kind Health	In-kind Education	Total
poorest	0.0	-0.2	91.3	14.8	-19.8	8.0	2.2	96.2
2	-0.1	-0.3	63.6	15.5	-17.7	11.4	6.1	78.5
3	-1.6	-0.7	36.5	11.2	-14.9	11.1	15.2	56.8
4	-4.8	-1.5	24.6	9.4	-15.2	6.8	12.5	31.9
5	-8.6	-2.2	19.0	7.4	-14.6	6.7	9.9	17.6
6	-12.4	-3.1	14.1	4.7	-13.8	4.4	8.5	2.5
7	-14.9	-3.4	12.5	3.3	-12.9	5.1	7.7	-2.7
8	-18.5	-4.7	9.4	2.5	-12.5	2.8	5.7	-15.3
9	-22.6	-5.5	8.2	1.3	-11.6	1.4	3.3	-25.5
richest	-27.1	-7.9	5.5	0.4	-9.9	1.2	1.6	-36.1
total	-14.8	-4.0	21.4	5.2	-13.3	4.7	6.2	5.4

Note: deciles are defined based on market income.

Source: authors' calculations using HBS-2017 data.

⁸ Because of the survey bias the top deciles do not fully cover the richest class in Moldova as in many other countries.

Figure 7. Incidence of main components of tax benefit system by deciles, share of final income, percent.



Note: deciles are defined based on market income.
Source: authors' calculations using HBS-2017 data.

If we examine the incidence of main components of the tax benefit system separately for some representative household types, there are three categories of net payers, while other four benefit from the system (Table 10, Figure 8). The three categories of net payers are households with no children, and no pensioners, and families that consist of two working age adults and one or two children. They do benefit from the system through direct transfers, in-kind health and education, but the amount of their contributions through direct and indirect taxes is higher than the benefits they receive. On net they contribute 5-12 percent of their final incomes. These types of families are among the least vulnerable.

The main beneficiaries are retirees-only households that get 68 percent of their final income as net benefits from the system, mainly through pensions (73 percent) and other direct transfers (17 percent). The households in this category are also the main beneficiaries of the health system in relative terms (8 percent of their final income is coming from this source). However, for obvious reasons, they do not benefit from the education system. Families without children, but with pensioners and working adults are also among net beneficiaries, receiving on average 34 percent of their final income mainly through pensions.

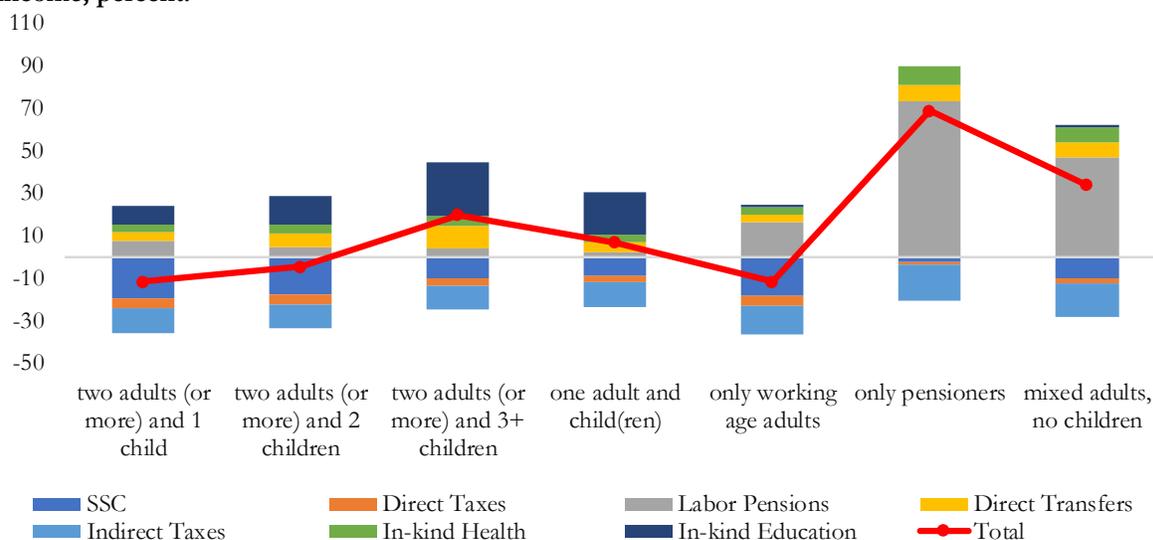
Another important category of beneficiaries includes families with three or more children and incomplete families with one adult and children (Table 10, Figure 8). These two vulnerable groups are benefiting 20 and 7 percent of their final income respectively. It mostly comes in the form of in-kind education and to a less extend direct transfers. In-kind education transfers account for 20-25 percent of their final income, 5-10 percent coming through direct transfers and 3-5 percent through in-kind health services.

Table 10. Incidence of main components of tax benefit system by types of households, share of final income, percent.

	SSC	Direct Taxes	Labor Pensions	Direct Transfers	Indirect Taxes	In-kind Health	In-kind Education	Total
two adults (or more) and 1 child	-19.4	-4.8	7.3	4.2	-11.7	3.7	9.0	-11.8
two adults (or more) and 2 children	-17.6	-4.9	4.7	6.4	-11.2	4.1	13.5	-4.8
two adults (or more) and 3+ children	-9.8	-3.9	3.8	10.7	-11.2	4.9	25.3	19.8
one adult and child(ren)	-8.7	-2.9	2.1	5.1	-12.2	3.0	20.3	6.7
only working age adults	-18.3	-4.7	16.3	3.4	-13.3	3.8	1.2	-11.6
only pensioners	-2.5	-1.0	72.9	8.1	-17.3	8.4	0.0	68.6
mixed adults, no children	-9.9	-2.7	46.9	6.9	-15.4	6.9	1.2	33.8

Source: authors' calculations using HBS-2017 data.

Figure 8. Incidence of main components of tax benefit system by types of households, share of final income, percent.



Source: authors' calculations using HBS-2017 data.

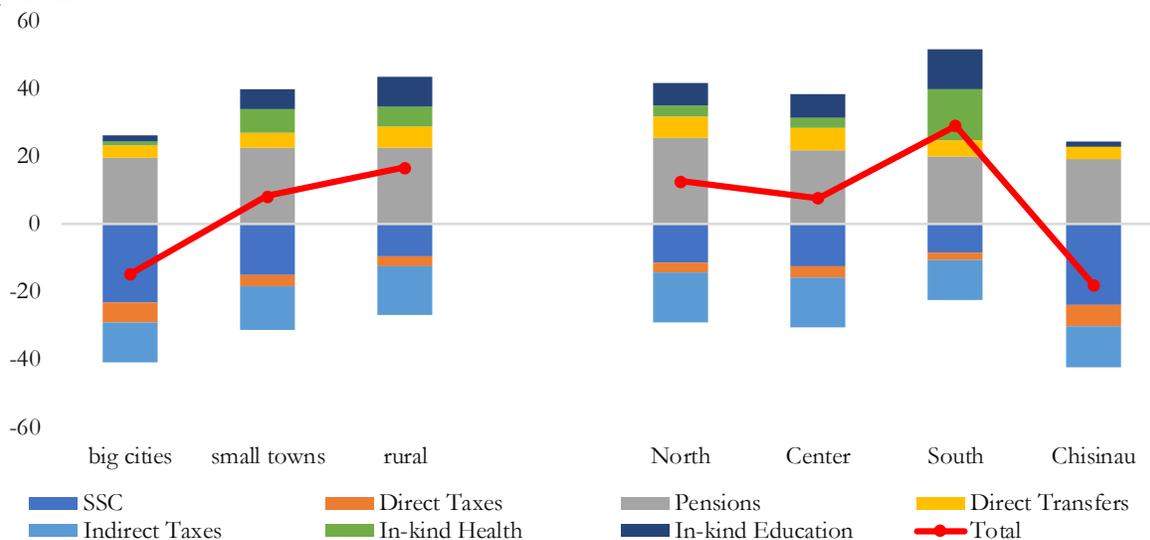
Geographically, the main beneficiaries are concentrated in rural areas and small towns, while those who live in big cities are net payers on average (11, Figure 8). The rural and small town residents receive 17 and 8 percent of their final income as net benefits. It comes mainly in the form of pensions (22 percent). Other three components of benefit system (direct transfers, in-kind health and education services) have similar shares between 4 and 8 percent of the final income. While residents of big cities, including Chisinau, are net payers to the system on average, mainly because they benefit less from in-kind transfers and pensions, while pay much more through direct taxes and especially social contributions.

Table 11. Incidence of main components of tax benefit system by types of location, share of final income, percent.

	SSC	Direct Taxes	Pensions	Direct Transfers	Indirect Taxes	In-kind Health	In-kind Education	Total
big cities	-23.2	-6.1	19.3	3.8	-11.8	1.1	2.1	-14.9
small towns	-15.1	-3.4	22.3	4.4	-12.9	6.9	6.0	8.1
rural	-9.6	-2.9	22.3	6.4	-14.3	5.9	8.7	16.6
North	-11.3	-3.1	25.2	6.3	-14.6	3.6	6.5	12.4
Center	-12.5	-3.4	21.7	6.6	-14.7	2.7	7.0	7.5
South	-8.4	-2.4	19.8	4.8	-11.8	15.0	11.8	28.8
Chisinau	-24.0	-6.3	19.1	3.5	-12.0	0.2	1.5	-18.0

Source: authors' calculations using HBS-2017 data.

Figure 7. Incidence of main components of tax benefit system by types of location, share of final income, percent.



Source: authors' calculations using HBS-2017 data.

4.2. Distributional impact and marginal contributions of fiscal interventions

The tax benefit system in Moldova significantly reduces income inequality. The Gini index falls from 48 percent for market income to 31 percent for final income (Table 12) or by 17 percentage points, equivalent to a 36 percent reduction. The biggest decline of inequality comes on account of pensions – the Gini at the level of market income plus pensions is 14 percentage points or 29 percent lower than at the original level. After direct taxes and transfers the Gini index falls further by 4 percentage points or another 10 percent. However, the next layer – indirect taxes is dis-equalizing in the sense that these components increase the Gini index marginally by 2 percentage points. After in-kind transfers, the Gini index falls further by another 1 percentage point.

Poverty declines rapidly after tax-benefit interventions in Moldova. Depending on the poverty line, the poverty headcount falls by 20-60 percent from market income to consumable income⁹ (Table 12). The effect is stronger for the lower poverty lines – for the international line of 3.2 USD/day in 2011 PPP the poverty rate goes down by 64 percent. For the international line of 5.5 USD/day in 2011 PPP and national lines the effect is less pronounced, but still high and reaches 20 percent. Like in the case of inequality, the biggest relative reduction of poverty happens through pensions. Direct transfers minus direct taxes still contribute to a notable absolute reduction in poverty incidence (Table 12).

The results for the alternative scenario, when pensions are treated as deferred income, are much more moderate. The Gini index falls from market income plus pensions to final by 2 percentage points or 3.4 percent. The poverty headcount under national and international lines actually increases by 16 percentage points due to the strong effect of indirect taxes, which overcompensates the positive contribution from direct transfers minus direct taxes.

Table 12. Poverty and inequality at various levels of income in Moldova.

		Income concept				
		market	market + pensions	disposable	consumable	final
Inequality	Gini index	48.0	34.1	30.5	32.0	30.9
	National	39.4	25.2	18.6	30.5	
Poverty	International (3.2 USD/day)	28.0	9.1	6.0	9.9	
	International (5.5 USD/day)	43.2	27.9	22.2	33.3	

Notes:

National - below the national poverty line (1562.8 MDL per month per adult equivalent)

International - below the international line (3.2 USD/day in 2011 PPP or 759.4 MDL per month per capita)

International - below the international line (5.5 USD/day in 2011 PPP or 1305.2 MDL per month per capita)

Source: authors' calculations using HBS-2017 data.

⁹ The poverty is usually not reported at the level of final income in the CEQ studies.

Pensions and direct transfers are the most progressive component of the tax-benefit system in Moldova with the Kakwani index of 0.81 and 0.8 respectively (Table 13). They are followed by in-kind health and education benefits. Direct taxes and pension contributions are also slightly progressive, while indirect taxes (mainly VAT) are the only regressive component of tax-benefit system in Moldova. Pensions also have the highest marginal contribution to poverty and inequality reduction followed by other direct transfers.¹⁰ Obviously, all benefits positively contribute to poverty reduction. In the case of inequality, the results are similar - direct taxes, pension contributions and in-kind benefits reduce inequality, while indirect taxes increase inequality.

Table 13. Progressivity and redistributive effect by types of interventions.

	Progressivity		Marginal contributions, p.p.		
	Kakwani index	to Gini index	to national poverty	to international poverty (3.2)	to international poverty (5.5)
SSC	0.132	2.8	-2.1	-0.3	-3.1
Direct Taxes	0.135	0.8	-0.7	0.0	-1.0
Pensions	0.812	13.2	18.5	20.4	21.2
Direct Transfers	0.803	3.1	7.1	4.1	8.3
Indirect Taxes	-0.372	-1.4	-10.2	-1.6	-9.0
In-kind Health	0.660	-0.7	2.8	0.8	3.0
In-kind Education	0.487	1.4	5.2	4.5	5.6

Notes:

Kakwani index is the measure of progressivity. The higher the value is the more progressive is the program.

Marginal contributions are measured at the level of final income.

National - below the national poverty line (1562.8 MDL per month per adult equivalent)

International - below the international line (3.2 USD/day in 2011 PPP or 759.4 MDL per month per capita)

International - below the international line (5.5 USD/day in 2011 PPP or 1305.2 MDL per month per capita)

Source: authors' calculations using HBS-2017 data.

At the level of specific direct transfers, the most progressive transfers are social assistance to poor families (Table 14). However, all other analyzed direct transfers are also highly progressive. The highest effect on inequality and poverty reduction comes from pensions – labor and social, assistance to poor families and other benefits. Despite a very high level of progressivity, social assistance transfers to poor families have a moderate effect on poverty – on their own they decrease poverty by 1.5-2.5 percentage points; this is 2 times lower than social pensions and 10 times smaller than labor pensions. This moderate effect is mainly explained by the relatively small size of the program.

Table 14. Progressivity and redistributive effect by direct transfers.

	Progressivity		Marginal contributions, p.p.		
	Kakwani index	to Gini index	to national poverty	to international poverty (3.2)	to international poverty (5.5)
Labor pensions	0.829	8.6	17.6	15.5	18.9
Other contributory pensions	0.718	1.4	3.8	2.3	4.0
Non-contributory pensions: social	0.770	0.2	0.7	0.2	0.5
Social assistance to poor families	1.011	0.9	2.4	1.4	1.8
Child and family benefits	0.521	0.5	0.7	1.0	1.1
Unemployment benefits	0.763	0.0	0.0	0.0	0.0
Scholarships	0.440	0.1	0.2	0.2	0.5
Other benefits	0.860	0.9	3.9	0.8	3.1

Notes:

Kakwani index is the measure of progressivity. The higher the value is the more progressive is the program.

Marginal contributions are measured at the level of final income.

National - below the national poverty line (1562.8 MDL per month per adult equivalent)

International - below the international line (3.2 USD/day in 2011 PPP or 759.4 MDL per month per capita)

International - below the international line (5.5 USD/day in 2011 PPP or 1305.2 MDL per month per capita)

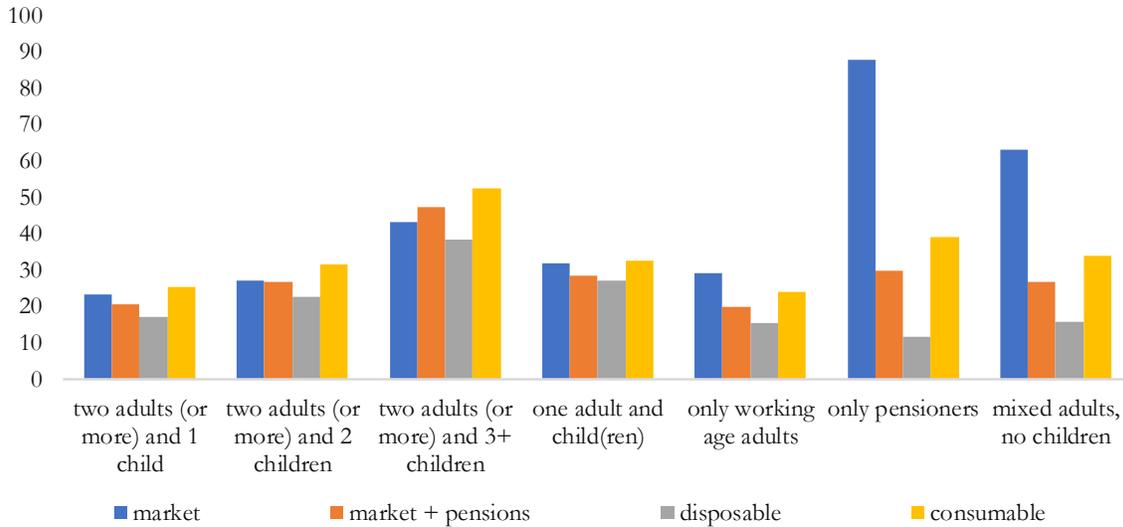
Source: authors' calculations using HBS-2017 data.

As most of the redistribution in Moldova comes from pensions, the group that benefits from the biggest poverty reduction is pensioner only households. Poverty at the level of disposable income for this group is 7.5 times lower than at the level of market income (Figure 8). While all families without children have poverty rates at the level of consumable income lower than at the level of market income, families with children actually experience an increase in poverty rates after tax-benefit interventions in Moldova. And the most vulnerable in this sense are families with

¹⁰ Marginal contributions are calculated as difference between poverty or inequality (Gini) with and without intervention.

two or three children. For these categories, poverty at the level of consumable income is 16-20 percent higher than at the level of market income. Families with three or more children have also highest post-intervention poverty rates – more than half of households in this category are poor at the level of consumable income if the national poverty line is used (Figure 8).

Figure 8. National poverty rates inequality at various levels of income in Moldova by types of households, percent.

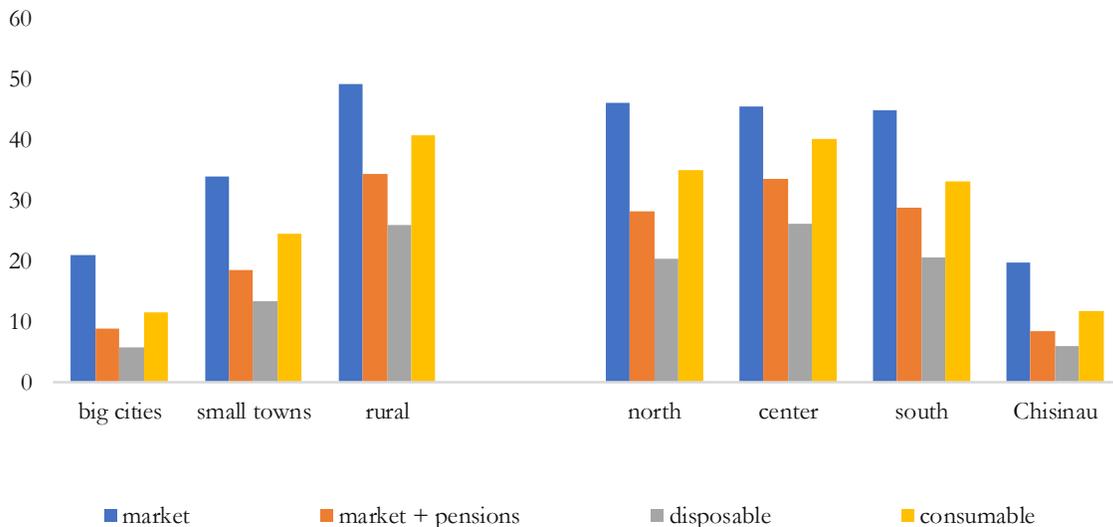


Notes: poverty rates at the national poverty line (1562.8 MDL per month per adult equivalent).

Source: authors' calculations using HBS-2017 data.

While poverty reduction across locality types is similar in absolute terms, in relative terms rural households, which are much poorer than urban ones and remain poorer also after the interventions, register the lowest degree of poverty reduction. Poverty at the level of consumable income for rural households is only 17 percent lower than at the level of market income, while for small towns this number is 28 and for big cities, including capital it is 44 percent (Figure 9). The relative reduction in poverty rates is of the same magnitude across geographical regions, however, the central part of the country has slightly less poverty reduction after the main interventions (Figure 9).

Figure 9. National poverty rates inequality at various levels of income in Moldova by types of location, percent.



Notes: poverty rates at the national poverty line (1562.8 MDL per month per adult equivalent).

Source: authors' calculations using HBS-2017 data.

4.3. Efficiency of taxes and transfers

While absolute effects of the programs matter, a policy maker would also be interested in their cost and cost efficiency. We calculate the cost of reducing poverty by 1 percent through each transfer program, and we also calculate tax collections per each percent of generated poverty for taxes. We also look at how well the programs are targeted by looking at the shares of the program going to (or taxing) the poor; to the bottom 40 percent; and to the top 10 percent in income. We focus only on direct transfers and pensions for the expenditure side, as their primary goal is to alleviate poverty and inequality. Health and education expenditure pursue other goals, and hence we cannot evaluate their efficiency based only on the effects on poverty and inequality.

Table 15. Measures of efficiency of transfers in Moldova.

	Cost of 1 p.p. reduction of Gini and poverty (by lines)					Targeting: share of program budget that goes to		
	Gini	national	international (3.2)	international (5.5)	poverty gap	Bottom 10	Bottom 40	Top 20
Pensions	1,809	872	979	823	1,245	28	65	11
Labor pensions	1,794	878	996	819	1,258	32	67	11
Other pensions	2,091	750	1,217	722	1,566	30	65	13
Direct Transfers	1,574	602	1,145	656	1,392	20	64	6
Social pensions	1,393	522	1,467	689	1,478	18	74	6
Social assistance to poor families	1,117	437	777	575	893	40	83	1
Child and family benefits	1,562	1,222	816	787	1,899	20	70	1
Unemployment benefits	2,056	n/a	2,229	n/a	n/a	n/a	n/a	0
Scholarships	1,973	1,536	1,239	513	1,909	19	55	10
Other benefits	2,286	505	2,626	651	2,186	6	51	11

Notes: costs are in mln. MDL

National - below the national poverty line (1562.8 MDL per month per adult equivalent)

International - below the international line (3.2 USD/day in 2011 PPP or 759.4 MDL per month per capita)

International - below the international line (5.5 USD/day in 2011 PPP or 1305.2 MDL per month per capita)

Income deciles were defined on the basis of disposable income without the transfer or pension

Source: authors' calculations using HBS-2017 data.

Labor pensions, while non-conditional on income by construction, are moderately efficient in reducing inequality and poverty at the lower lines but become very inefficient in reducing the poverty at the higher line. Since many of the retirees rely on pensions as the only or major source of income, labor pensions, despite high cost, generate large marginal effects. Hence, the cost of reducing the extreme poverty rate and the poverty gap at the national line as well as inequality through labor pensions is relatively low. Pensions are also quite well targeted despite the absence of the targeting mechanism in the design: 65 percent of labor pensions go to bottom 40 percent of the distribution (defined before pensions), and only 11 percent goes to the top income quintile (Table 15).

The targeted social assistance to poor families benefits are the most efficient. Of all the types of direct transfers, poverty benefits have the lowest cost of fighting poverty and inequality (Table 15). This type of intervention has also the best targeting results – up to 40 percent of the program budget goes to bottom decile and almost 80 percent goes to the bottom 40 percent of the distribution, while only one percent goes to the top quintile (Table 15). Social pensions and child and family benefits are also relatively well targeted, but mostly focused on the bottom 40 percent of the distribution, while bottom decile receives twice lower share of the budget than social assistance to poor families (Table 15).

Table 16. Measures of efficiency of taxes in Moldova

	Tax collection per 1 p.p. increase by poverty lines				Targeting: share of tax budget paid by		
	national	international (3.2)	international (5.5)	poverty gap	Bottom 10	Bottom 40	Top 20
SSC	7,582	13,491	4,371	25,830	1	8	58
SIC employee	4,795	6,839	2,186	13,336	1	14	48
MIC employee	6,791	6,093	2,326	17,319	1	12	52
SIC employer	8,596	16,089	4,439	30,697	1	7	59
MIC employer	10,640	75,804	4,563	27,086	1	10	56
Direct taxes	5,945	6,357	3,484	17,863	1	11	57
Personal income tax	9,437	8,032	4,096	21,921	1	10	59
Land tax	1,173	1,997	1,355	2,498	9	41	14
patent tax	5,865	2,153	1,248	8,142	4	22	31
Indirect taxes	953	2,898	1,022	3,304	4	26	33
VAT	921	2,724	971	3,162	4	26	33
Import duties	767	2,546	627	2,220	5	29	29
Excise	1,195	2,096	951	2,779	5	25	37

Notes: revenues are in mln. MDL

SIC – social insurance contributions, MIC – medical insurance contributions/

National - below the national poverty line (1562.8 MDL per month per adult equivalent)

International - below the international line (3.2 USD/day in 2011 PPP or 759.4 MDL per month per capita)

International - below the international line (5.5 USD/day in 2011 PPP or 1305.2 MDL per month per capita)

Income deciles were defined on the basis of disposable income plus tax for direct taxes and SSC and disposable income for indirect taxes.

Source: authors' calculations using HBS-2017 data.

Direct taxes and social contributions are more efficient in tax collection considering the poverty and inequality increase effects (Table 16). PIT is the most efficient direct tax in terms of redistribution effects among the direct taxes. PIT decreases inequality and has the highest tax collection for one point of poverty increase. In other words, it causes the lowest increase in poverty per one dollar collected. It also has the largest share of collections paid by the top income quintile (59 percent), while the bottom 40 percent of the income distribution contribute only 10 percent.

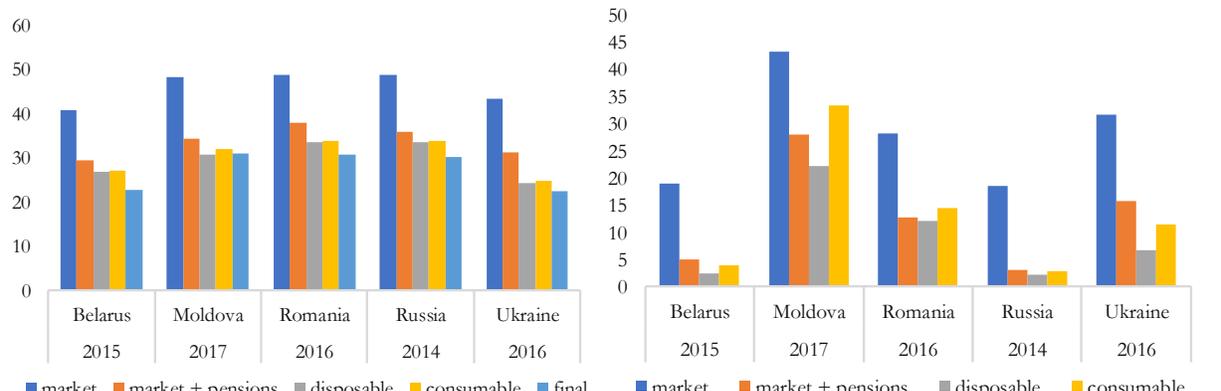
Indirect taxes are significantly less efficient in terms of redistribution. All indirect taxes increase inequality and have relatively low collection levels per one percentage point increase in poverty. They are also quite poorly targeted in the sense that large share of tax revenues comes from the low part of the distribution. VAT, for example, generates 26 percent of collections from the bottom 40 percent of the income distribution; while the top income quintile only contributes 33 percent of collections. Indirect taxes are inferior to direct taxes in terms of redistribution efficiency.

4.4. Cross-country comparisons

In order to place the Moldova analysis in the international context, the results were compared to similar CEQ analysis in four peer countries of the same region and with similar tax-benefit system: Belarus (Bornukova et al., 2017), Romania (Inchauste et al., 2018), Russia (Popova et al., 2018) and Ukraine – (Bornukova et al., 2019).

The redistribution effect of Moldova's tax-benefit system is similar to other countries in the region. Inequality at market income level is higher than in Belarus and Ukraine, but slightly lower than in Romania and Russia (Figure 10, left panel). The redistributive effect of the welfare system is also similar – the Gini index in Moldova falls by 17 percentage points – just slightly lower than in peer countries (around 18 percent in Belarus, Romania and Russia and 21 percent in Ukraine). The inequality reduction at the level of disposable income in Moldova is the second highest after Ukraine in this set of countries. Indirect interventions increase the Gini index in all five countries, but most of all in Moldova (by 1.5 percentage points vs 0.2-0.6 percentage points in other countries). and the effect of in-kind transfers in Moldova is smaller than in peer countries. Poverty rates are relatively higher in Moldova than in neighboring countries, but the relative poverty reduction effect of main interventions is similar (Figure 10, right panel).

Figure 10. Gini indices (left) and international poverty rates (right) in Moldova and peers by income levels, percent

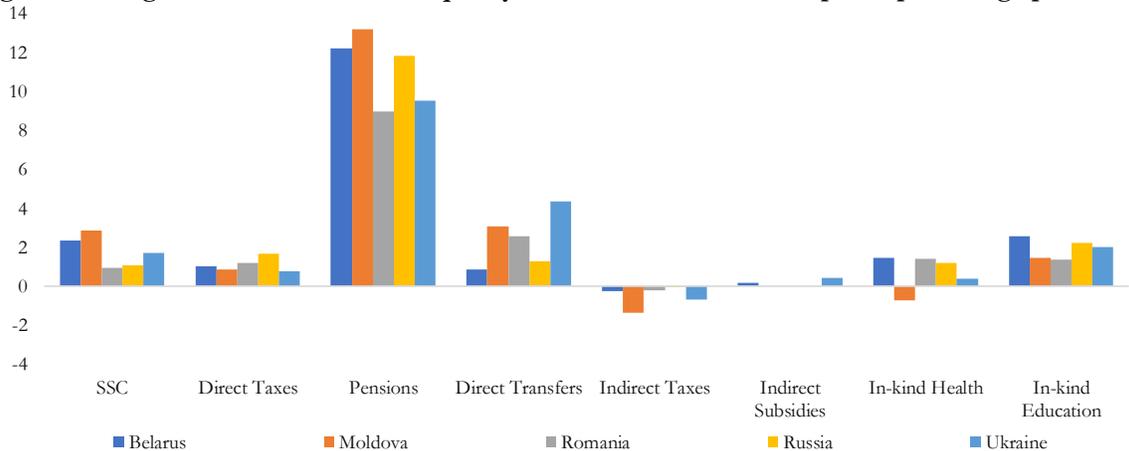


Note: The international poverty line: Belarus – 10 USD/day in 2005 PPP, Moldova – 5.5 USD/day in 2011 PPP, Romania – 5.5 USD/day in 2011 PPP, Russia – 4 USD/day in 2005 PPP, Ukraine – 5.5 USD/day in 2011 PPP.

Source: authors' calculations using HBS-2017 data for Moldova and respective CEQ analysis for other countries: Belarus – Bornukova et al., 2017; Romania - Inchauste et al., 2018; Russia – Popova et al., 2018, Ukraine - Bornukova et al., 2019.

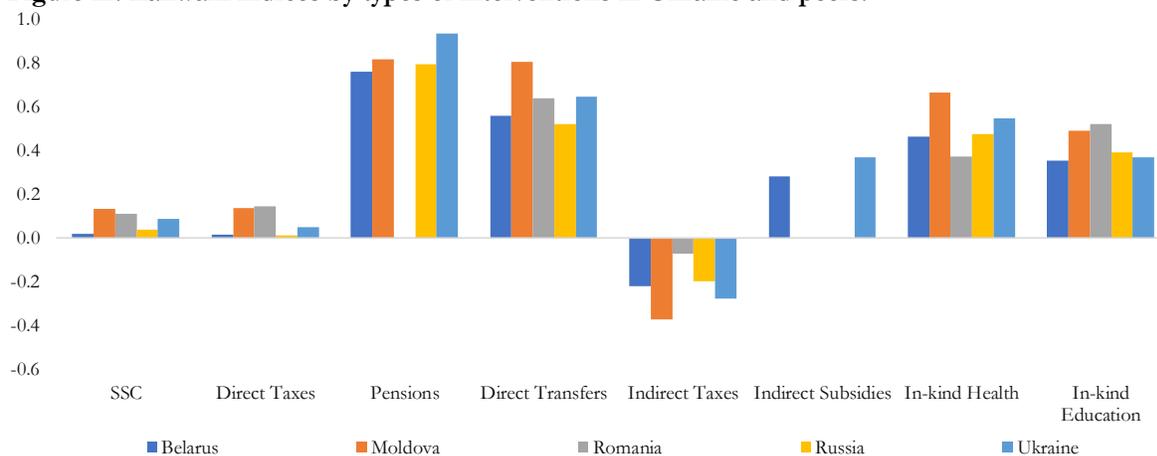
As in other countries, among the various fiscal interventions, pensions in Moldova are the main contributor to inequality reduction (Figure 11). Moreover, this effect is the highest among the five countries. While progressivity of pensions is in line with other countries for which data are available, the highest contribution is explained by highest relative size of the pensions in Moldova comparing to other countries. (Figure 12). Social contributions also have the highest equalizing effect in Moldova and direct transfers are the second highest after Ukraine (Figure 11). Indirect taxes have the highest negative marginal contributions to inequality reduction (they actually increase inequality in Moldova more than in other countries (Figure 11). In terms of progressivity, most interventions are similar in Moldova, Belarus, Romania, Russia and Ukraine, however the indirect taxes are most regressive in Moldova (Figure 12).

Figure 11. Marginal contributions to inequality reduction in Ukraine and peers, percentage points.



Note: Some numbers on this chart are estimated using backward calculations from the original source and might be not fully precise. Source: authors' calculations using HLCS-2016 data for Ukraine and respective CEQ analysis for other countries: Belarus – Bornukova et al., 2017; Poland - Goraus and Inchauste, 2016; Russia – Popova et al., 2018.

Figure 12. Kakwani indices by types of interventions in Ukraine and peers.



Note: Kakwani index is a measure of progressivity. The higher the value is the more progressive is the transfer.

Source: authors' calculations using HLCS-2016 data for Ukraine and respective CEQ analysis for other countries: Belarus – Bornukova et al., 2017; Poland - Goraus and Inchauste, 2016; Russia – Popova et al., 2018.

5. Conclusions

This paper examined the fiscal incidence of the tax-benefit system in Moldova and its contribution to poverty and inequality reduction. The analysis reveals that the tax-benefit system in Moldova is quite pro-poor – 60 percent of the population are net recipients and only 40 percent are net payers into the system. Households at the bottom of the income distribution rely almost entirely on transfers – they receive as much as 96 percent of their final income as net benefits (including old age pensions); the top two deciles contribute 26 and 36 percent of their final income respectively into the redistributive system in Moldova. Across different household types, families with three or more children, as well as single-parent families and retirees-only households are among the key beneficiaries. The system also allows for some smoothing of spatial inequalities, as the main beneficiaries are concentrated in rural areas and small towns, while those living in big cities are net payers on average.

The overall redistributive effect of the tax-benefit system is significant. The Gini index falls from 0.48 for market income to 0.31 percent for final income, a 36 percent reduction. The main redistributive effect is on account of pensions – just comparing the level of inequality in the space of market incomes with that associated with market income plus pensions reveals a 14 percentage points reduction in the Gini index of inequality. Indirect taxes are dis-equalizing, but given the relatively more uniform distribution of indirect taxes across the population, the effect is only a 2 percentage points increase in the Gini index when going from disposable income to consumable income.

In addition to its equalizing effect, the fiscal system also contributes to a notable reduction in poverty. Depending on which poverty threshold is used, the poverty headcount falls by some 20-60 percent from the level associated with market income alone, before fiscal interventions, to consumable income, inclusive of direct and indirect taxes and transfers. Notably, the poverty reduction effect is stronger for lower poverty lines, suggesting that the protective effect of the safety net gets stronger as we move towards the lower end of the income distribution. Like in the case of inequality, pensions are the transfers that contribute to poverty reduction the most, but direct transfers also contribute a notable reduction in poverty incidence.

In terms of overall progressivity, pensions and direct transfers are the most progressive components of the tax-benefit system in Moldova, followed by in-kind health and education benefits. Direct taxes and pension contributions are also marginally progressive, while indirect taxes (primarily VAT) are the only regressive component of the tax-benefit system in Moldova.

What is of greatest interest to policy makers, however, is the efficiency of various programs, or the magnitude of their impact (on poverty and inequality, in our case), per unit of budget allocated to that program. The CEQ analysis reveals that the targeted social assistance benefits to the poor families are the most efficient. Of all the types of direct transfers, poverty benefits have the lowest cost of fighting poverty and inequality. This type of intervention has also the best targeting results – up to 40 percent of the program budget goes to bottom decile and almost 80 percent goes to the bottom 40 percent of the distribution, while only 1 percent goes to the top quintile. Social pensions and child and family benefits are also relatively well targeted, but mostly focused on the bottom 40 percent of the distribution, while the bottom decile receives a twice lower share of the budget than social

assistance to poor families. However, despite the highest degree of efficiency of the social assistance for poor families program, its overall effect on poverty reduction is relatively small, which is due to the relatively small budget allocated to this program.

Labor pensions, even though they do not represent a means-tested transfer, are also found to be moderately efficient in reducing inequality and poverty, because many of the retirees rely on pensions as their main source of income; as such, marginal effects of pensions are high despite high overall cost. This is also accentuated by demographic characteristics of the population, population aging being a salient feature.

On the tax side, the PIT was found to be the most efficient direct tax in terms of redistribution effects among all of the direct taxes, in other words, it causes the lowest increase in poverty per one dollar of tax collected. It should be noted, however, that these features of the PIT are prior to the recent tax reform, which modified the PIT design from being a progressive transfer to being a flat transfer, but with a higher non-taxable exemption. One of the key analyses for future research would be to examine how the incidence of the PIT, and its degree of efficiency with respect to poverty and inequality changed as the result of the changes in its design.

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7. Annexes

7.1. Detailed description of main taxes and social benefits in Moldova

This annex outlines, for each tax and benefit considered in the analysis, the main program parameters. In the case of taxes, this includes, for each tax separately, the tax base, the tax rates, as well as various deductions or exemptions, as appropriate. In the case of transfers, this includes eligibility, payment amounts, and, where available, the number of beneficiaries, according to administrative records.

TAXES

Direct taxes

Personal income tax

Tax base

Global annual income from the following sources:

- Income from employment and benefits paid by employers, except mandatory payments to state social insurance budget and medical insurance funds;
- Income from professional or entrepreneurial activity;
- Capital gains;
- Income from rent;
- Other taxable sources of income.

Global taxable income does not include:

- Pensions and other annuity payments paid from the state social insurance budget;
- Social assistance benefits paid from the state budget;
- Benefits for work-related accidents and occupational illness;
- Benefits for temporary lack of working capacity (health leaves);
- Scholarships received by persons studying in public educational institutions;
- Nominal social compensations received by vulnerable groups;
- Donations and inheritances;
- Income obtained by physical persons holding entrepreneurial patents;
- Other non-taxable sources of income.

Tax rates

- 7% for total income up to MDL 31140;
- 18% for total income exceeding MDL 31140.

Note: as of October 1, 2018, Moldova introduced a 12 percent flat tax rate on personal income.

Deductions from global income and allowances:

- Payments for medical insurance and individual social security contributions;
- Personal deduction – 10,620 MDL;
- Increased personal deduction – 15,840 MDL, applicable in case of persons who:
 - Acquired and suffer from actinic disease or other diseases caused by the Chernobyl disaster;
 - Are parents or spouses of persons who died or were missing in military actions for the defense of the territorial integrity of the Republic of Moldova and military actions in the Afghanistan Republic;
 - Acquired disability following military actions for the defense of the territorial integrity of the Republic of Moldova and military actions in the Afghanistan Republic;
 - Have disabilities caused by war, by congenital diseases or have severe or accentuated diseases;
 - Are rehabilitated victims of political repressions;
- Personal and increased personal deductions attributable to non-working spouse – 10,620 MDL and 15,840 MDL accordingly;
- Personal deduction for each dependent (other than those having congenital diseases or disabilities from childhood) – 2,340 MDL;
- Personal deduction for each dependent having congenital diseases or disabilities from childhood – 10,620 MDL;

- Only 50% of the capital gain is considered for tax purposes.

Tax on the income from agricultural activity

Tax base

Income obtained by agricultural enterprises legally registered as physical persons.

Tax rates

7% of the income.

Withhold income tax

Tax base

Dividends, interest, royalty paid.

Tax rates

12% (unless reduceable in case of dividends paid to non-residents under an applicable tax treaty).

Property tax

Tax base

The tax base is the estimated value of the immovable property of all types and land. Depending on the type of property, the market or accounting value of the property is determined based on the method of comparative analysis of sales, method of income or method of costs.

Tax rates

Property tax is a local tax. The Tax Code and related legislation stipulate maximal and/or minimal rates, whereas relevant local public authorities set concrete tax rates. In case of only maximal rates defined by the national legislation, the concrete tax rate cannot be lower than 50% of the maximal rate.

- Maximum tax rates for agricultural land, other than pastures and meadows:
 - With evaluated cadastral indices – 1.5 MDL / ha*degree
 - Without evaluated cadastral indices – 110 MDL / ha
- Maximum tax rates for land under pastures and meadows:
 - With evaluated cadastral indices – 0.75 MDL / ha*degree
 - Without evaluated cadastral indices – 55 MDL / ha
- Maximum tax rates for land under water bodies:
 - 115 MDL / ha of water area
- Tax rates for land under constructions within built-up areas:
 - In rural areas – 1 MDL/100 sq.m.
 - In towns – 2 MDL/100 sq.m.
 - In Chisinau and Balti municipality – 10 MDL/100 sq.m.
 - In other municipalities and district centers – 4 MDL/100 sq.m.
- Tax rates for agricultural land owned by agricultural enterprises within built-up areas:
 - In Chisinau and Balti municipality – 30 MDL/100 sq.m.
 - In other settlements – 10 MDL/100 sq.m.
- Tax rates for land outside built-up areas:
 - Land under constructions and buildings, mines, and land destroyed following production activities, not evaluated by cadaster authorities 350 MDL/ha
 - For other land – 70 MDL/ha
- Tax rate for residential property, garages and land under garages, and plots of land in fruit-growing associations and constructions on these plots in urban settlements:
 - Maximum rate – 0.4% of the tax base
 - Minimum rate – 0.05% of the tax base
- Tax rate for residential property in rural settlements:
 - 0.1% of the tax base

- Tax rate for agricultural land with constructions:
 - Maximum rate – 0.3% of the tax base
 - Minimum rate – 0.1% of the tax base
- Tax rate for other immovable property:
 - 0.3% of the tax base
- Tax rate for residential property with total living and main constructions area above 100 sq.m.:
 - For area from 100 sq.m. to 150 sq.m including, the concrete rate is increased 1.5 times
 - For area from 150 sq.m. to 200 sq.m including, the concrete rate is increased 2.0 times
 - For area from 200 sq.m. to 300 sq.m including, the concrete rate is increased 10 times
 - For area above 300 sq.m. the concrete rate is increased 15 times.

Patent tax

Tax base

The patent tax is used for fiscal taxation of holders of patent of entrepreneur. Only physical persons are entitled to undertake economic activity under the patent of entrepreneur. The patent tax includes income tax, market tax, territorial improvement tax. In addition, the patent holders must contribute to the state social and medical insurance budgets. The patent tax is set as monthly lump sums which depend on type of the economic activity for which the patent has been issued and on the type of settlement. The biggest number of patents is issued for the retail trade activity. Besides, there are 48 personal or household-related services allowed to be provided under the patent of entrepreneur regime. The official policy regarding the patent of entrepreneur is to gradually substitute it, starting 2019, with another fiscal regime called independent activity.

Monthly tax amount for patent

The monthly tax amount for the patent is detailed in the Table A1.

Table A1. Monthly tax for the patent for entrepreneur, by domains of activity and types of settlements, MDL

Domain of activity	Municipalities of Chişinău, Bălţi, Bender and Tiraspol	Other municipalities and towns	Villages
Retail trade of food and other local perishable goods, under the condition of meeting sanitary requirements for their housing, storage and trade	700	500	200
Logopedic services	80	40	20
Massage, patient care services and other medical services provided by lower level medical professionals	140	70	35
Veterinary, zootechnical services	150	50	20
Typing services, including by use of computer	150	50	25
Haircut and cosmetic services	200	80	30
Sewing, knitting and repair of clothing and headgear and marketing	100	50	25
Shoe making and repair and marketing	90	45	30
Washing services	90	45	30
Foreign languages teaching (individual or group training for up to 20 people)	140	70	35
Teaching and meditation of different disciplines, except for music, choreography and plastic arts (individual training or groups of up to 20 people)	100	50	30
Teaching and meditation of music, choreography and plastic arts (individual training or groups of up to 20 people)	100	50	30
Organization of different sections on interests, including physical culture, for children up to 16 years (in groups of up to 20 persons)	70	35	20
Organization of different sections on interests, including physical culture, for adults (in groups of up to 20 people)	100	50	25
Baggage storage services	100	50	25
Maintenance and fitting out of dwellings and related sectors	100	60	30
Vulcanization of tires	200	75	30
Housing repair services	180	90	45
Construction of dwelling houses and garages in rural areas	-	-	70
Adjustment and repair of furniture	100	50	35
Repair of household appliances, instruments and mechanisms, watches	130	65	30
Repair of microwave ovens and other household electric heaters	100	50	25
Repair of TV sets, audio and video equipment for household use	150	75	40
Repair of photographic equipment, cameras and other optical instruments or instruments	90	45	30
Repair of musical instruments	110	55	30
Photographing, making and selling photos made individually, video services	200	100	50
Placing of placards, advertisements, artistic presentation	160	80	40
Manufacture of handicraft craft and handicrafts sales, except for sale at exhibitions and auctions	110	55	30
Musical services of ceremonial events	230200	120100	6550
Plowing and other cultivation works of soil by technical means, plant protection against diseases and pests	50	50	50
Governess services	80	40	20
Welding services, sanitary-engineering works	120	60	30
Organization of speeches	600	300	30
Execution and sale of wooden, metal, gypsum, clay, cement, and carpentry services	10080	6045	4030
Making and renting theatrical properties for various ceremonies and marketing them	150	80	50
Copying, multiplying and binding books	150	75	30
Tanning, leather processing, fur and leather production and marketing	200	120	100
Collection and marketing of glass packaging	100	75	50
Shepherding	60	40	25

Source: Law no.93 of 15/07/1998 on patent of entrepreneur.

Mandatory contributions

Mandatory contribution for social insurance

Tax base

Gross wage or related bases.

Employer's contribution

- 23% of the gross wage bill and other compensations for the following contributors:

- For persons employed through individual labor contract, following administrative decision or other civil contracts;
- For citizens of the Republic of Moldova employed in international projects, institutions and organizations in case that international treaties do not except payments of the social insurance contributions;
- For persons undertaking activities in elected functions or are appointed in executive authorities;
- For judges, prosecutors and ombudspersons;
- 33% of the gross wage bill and other compensations for the persons employed in the civic aviation sector;
- 23% of the 2 average wages forecast per economy as adopted by the government for persons employed in the military and security bodies.
- 54.7% of the unique tax paid by the residents of the IT parks; the unique tax is set at 7% of the sales volume, but not less than 30% of the forecast average wage per economy calculated per employee.
- 16% of the wage bill for employers in agricultural sector + 6% subsidy paid from the state budget;
- 7,512 MDL per year as individual insurance paid by the following physical persons:
 - Owners of individual enterprise;
 - Legally registered notaries, bailiffs, and lawyers;
 - Authorized administrators of succession, insolvency and judicial dissolution procedures;
 - Physical persons undertaking economic activity in the domain of the retail trade, except trade in excisable goods.
- 7,512 MDL per year, but not less than 1/12 of this installment monthly, depending on the duration of the activity:
 - Holders of the patent of entrepreneur, except pensioners and persons with disabilities.

Employee's contribution

- 6% of the gross wage.

Mandatory contribution for medical assistance

Tax base

Gross wage or lump sum.

Employer's contribution

- 4.5% of the gross wage.

Employee's contribution

- 4.5% of the gross wage.

Annual contribution paid in lump sum of 4,056 MDL by the following contributors:

- Owners of plots of land with agricultural destination, except gardens and plots under vegetables, indifferently of leasing or not the land;
- Owners of individual enterprises;
- Tenants of the plots of land with agricultural destination, except gardens and plots under vegetables;
- Holders of the patent of entrepreneur;
- Physical persons undertaking individual activity in the domain of retail trade except the trade in goods with excisable goods;
- Physical persons leasing transport units, rooms, equipment and other physical goods;
- Legal mediators, notaries, bailiffs, judicial experts, translators, authorized administrators registered in line with legal provisions;
- Persons undertaking independently the profession of family doctor registered in line with legal provisions;
- Other persons not employed and not insured by the government.

Persons insured by the government

- Children under the age of 18;

- Pupils and students enrolled in the levels 3-8 of the educational system, including those studying abroad;
- Pregnant, parturient and postpartum women;
- Persons with severe, accentuated or medium-severity disabilities;
- Pensioners;
- Unemployed persons registered with the National Employment Agency;
- Persons giving care at domicile of another person with severe disability requiring permanent care and/or supervision from another person;
- Persons from disadvantaged families entitled to social aid.

Indirect taxes

Value Added Tax

Tax base

This is the key component of the fiscal revenues in the Republic of Moldova. Domestic sales and import of goods and services are subject to VAT with their values representing the base for the VAT. Export supplies are taxed at 0%, which means that exporters are entitled to VAT deductions. Supplies in free economic zones and customs warehouses, income from interest of the leaser, goods and services sold for promotion or for advertising purposes, and property transmitted as part of the reorganization procedure of an economic agent are not subject to VAT.

Tax rates

- 20%, standard rate;
- 8% for the following goods and services:
 - bread and bakery products, except products for children which are not subject to VAT;
 - a list of medicaments, medical devices and sanitary goods as approved by Governmental decisions;
 - natural and liquified natural gas and services for gas transportation and distribution;
 - livestock, crops and gardening products in natural form;
 - sugar from sugar-beet;
 - solid biofuel and raw material for production of solid biofuel;
- 0% for the following goods and services:
 - exported goods and services;
 - international transport of passengers and goods and all related services;
 - electric energy, thermal energy and hot water supplied to residential buildings;
 - diplomatic and consular services, on mutual basis;
 - goods and services imported by and / or supplied to donor-funded technical and investment projects;
 - goods and services supplied in free economic zones;
 - services of the enterprises in the light industry for processing of raw materials forwarded by non-resident owners of the raw material;
 - duty free goods.

VAT exemptions

- housing, land, and related rent and lease services, except fees for related transactions;
- a number of goods for children, including food;
- privatized property and property transmitted free of charge by public authorities;
- education and related services;
- social assistance services and some of the related goods;
- medical services;
- financial services;
- postal services;
- gambling;
- burial and cremation services for human or animal bodies;

- housing services;
- domestic passenger transportation services and related services;
- books and printed periodicals;
- tractors for agricultural works and other agricultural equipment;
- aircrafts;
- other services and goods.

Excise tax

Tax base

- Physical quantity / volume of the good for the cases when the excise rates are established per physical unit;
- Value of good except excise and VAT for ad valorem established excise rates;
- Customs value of the imported good including all customs duties except excise and VAT.

Tax rates

The Table A2 details the excise rates for general goods, whereas the Table A3– the rates for cars, by cylinder displacement and term of service of the imported car.

Table A2. Excise rates for general goods

Classification code	Name of good	Unit of measurement	Excise rate
160431000	Sturgeon caviar	value in MDL	25%
160432000	Caviar substitutes	value in MDL	25%
220300	Malt beer	liter	2.50 MDL
2205	Vermouth and other grape natural wines, with the addition of vegetable or aromatic substances	liter	12.96 MDL
220600	Other fermented beverages (honey drink); mixtures of fermented beverages and mixtures of fermented beverages and non-alcoholic beverages, not elsewhere specified or included, with the exception of cider and perry	Liter	12.96 MDL
220600310	Cider and perry, carbonated	Liter	2.50 MDL
220600510	Non-carbonated cider and perry, in containers of 2 liters or less	Liter	2.50 MDL
220600810	Non-carbonated cider and perry, in containers of more than 2 liters	Liter	2.50 MDL
2207	Undenatured ethyl alcohol with an alcohol concentration of 80% by volume or more; ethyl alcohol and other alcoholic tinctures, denatured, of any concentration of absolute alcohol	Liter of absolute alcohol	90.12 MDL
2208	Undenatured ethyl alcohol with an alcohol concentration of less than 80% by volume; spirit tinctures, liqueurs and other alcoholic beverages	Liter of absolute alcohol	90.12 MDL
240210000	Cigars, cigars with cropped ends and cigarillos containing tobacco	value in MDL	41%
240220	Cigarettes containing tobacco:		
	– with filter	1000 pieces / value in MDL	360 MDL + 12%. but not less than 480 MDL
	– without filter	1000 pieces	120 MDL
240290000	Other cigars and cigarillos containing tobacco substitutes	value in MDL	41%
2403	Other manufactured tobacco and manufactured tobacco substitutes; tobacco "homogenized" or "restored"; tobacco extracts and essences	kilogram	130 MDL
270720100	Toluene for use as fuel	tonne	4560 MDL
270730100	Xylene for use as fuel	tonne	4560 MDL

270750	Other mixtures of aromatic hydrocarbons, 65% by volume or more (including losses) are distilled at 250 ° C according to ASTM D 86 method	tonne	4560 MDL
270900100	Natural gas condensate	tonne	4560 MDL
271012110– 271019290	Light and medium distillates	tonne	4560 MDL
271019310– 271019480	Gasoil, including diesel, and other heating fuel	tonne	1926 MDL
271019510	Liquid fuel for specific processing	tonne	409 MDL
271019620 – 271019680	Liquid fuel with sulfur content	tonne	409 MDL
271020110– 271020190	Gasoil	tonne	1926 MDL
271020310– 271020390	Liquid fuel	tonne	409 MDL
271112	Propane	tonne	2875 MDL
271113	Bhutan	tonne	2875 MDL
271114000	Ethylene, propylene, butylene and butadiene	tonne	2875 MDL
271119000	Other liquified gases	tonne	2875 MDL
280430000	Nitrogen	tonne	3006 MDL
280440000	Oxygen	tonne	3322 MDL
290110000	Acyclic saturated hydrocarbons	tonne	4560 MDL
искл.290124000	Buta-1,3-diene	tonne	4560 MDL
290129000	Other acyclic unsaturated hydrocarbons	tonne	4560 MDL
290211000	Cyclohexane	tonne	4560 MDL
290219000	Other cycloalkanes, cycloalkenes and cycloterpenes	tonne	4560 MDL
искл.290220000	Benzene for use as a fuel or heating material	tonne	4560 MDL
290230000	Toluene	tonne	4560 MDL
290244000	Mixtures of xylene isomers	tonne	4560 MDL
290290000	Other cyclic hydrocarbons	tonne	4560 MDL
290511000– 290513000	Saturated monoalcohols (methanol, propanol, butan-1-ol)	tonne	4560 MDL
290514	Other butanols	tonne	4560 MDL
290516	Octanol (Octyl alcohol) and its isomers	tonne	4560 MDL
искл.290519000	Pentanol (amyl alcohol)	tonne	4560 MDL
2909	Ordinary ethers, etheric spirits, etherphenols, etherspiritphenols, peroxides of alcohols of ordinary ethers and ketones (of a certain or indeterminate chemical composition) and their halogenated, sulphonated, nitrated or nitrosated derivatives	tonne	4560 MDL
330300	Perfumes	value in MDL	30%
381400900	Other organic solvents and thinners are complex, not elsewhere specified or included; prefabricated paint and varnish removers	tonne	4560 MDL
381700500	Alkylbenzene linear	tonne	4560 MDL
381700800	Other alkylbenzenes	tonne	4560 MDL
430310	Garments of mink, arctic fox, fox, sable	value in MDL	25%
711311000	Jewelry and parts thereof of silver, whether or not electroplated, clad or not clad with other precious metals	gram	2.59 MDL
711319000	Jewelry and parts thereof from other precious metals, whether or not electroplated, whether or not clad with precious metals	gram	39.27 MDL
711320000	Jewelry and parts thereof of base metal clad with precious metals	gram	39.27 MDL

Source: Fiscal Code of the Republic of Moldova.

Table A3. Excises for passenger cars and other motor vehicles intended primarily for the transport of people by car displacement and years of operation

Classification code	Name of the good	Term of vehicle operation, years						
		from 0 to 2	from 3 to 4	from 5 to 6	7	8	9	10
	– vehicles with internal combustion engine with spark ignition with reciprocating piston, other:							
870321	– – with engine cylinder capacity not exceeding 1000 cm ³	9.56	10.00	10.23	10.45	11.50	12.19	12.89
870322	– – with a cylinder capacity of more than 1000 cm ³ , but not more than 1500 cm ³	12.23	12.67	12.90	13.12	14.49	15.17	16.33
870323	– with a cylinder capacity of more than 1500 cm ³ , but not more than 2000 cm ³	18.90	19.34	19.57	19.79	21.62	23.23	24.39
870323	– – with a cylinder capacity of more than 2000 cm ³ , but not more than 3000 cm ³	31.14	31.58	31.81	32.03	35.20	37.03	38.88
870324	– – with a cylinder capacity of more than 3000 cm ³	55.60	56.04	56.27	56.49	58.66	58.89	59.13
	– vehicles with reciprocating internal combustion engines with compression ignition (diesel or semi-diesel) other:							
870331	– – with a cylinder capacity of the engine is not more than 1500 cm ³	12.23	12.67	12.90	13.12	14.49	15.17	16.33
870332	– – with a cylinder capacity of the engine more than 1500 cm ³ but not more than 2500 cm ³	31.14	31.58	31.81	32.03	35.20	37.03	38.88
870333	– – with a cylinder capacity of the engine more than 2500 cm ³	55.60	56.04	56.27	56.49	58.66	58.89	59.13
8703	Retro-car	222400 MDL per car						

Source: Fiscal Code of the Republic of Moldova.

Import tariff

Moldova has a relatively low import tariff. Its total MFN average applied in 2017 was 5.3%, here including 11.1% for agricultural goods and 4.4% for non-agricultural goods. The Table A4 highlights the tariffs and imports by key product groups.

Table A4. Moldova's import tariffs and import by product groups

Product groups	WTO final bound duties				MFN applied duties			Imports	
	AVG	Duty-free, %	Max	Binding, %	AVG	Duty-free, %	Max	Share in total, %	Duty-free, %
Animal products	17.2	1.1	30	100	11.9	13.3	24	0.8	13.0
Dairy products	14.3	0	35	100	13.6	1.0	34	0.8	0
Fruit, vegetables, plants	14.3	0	20	100	12.8	5.0	20	2.6	5.6
Coffee, tea	10.6	0	15	100	10.6	0	15	1.2	0
Cereals & preparations	13.2	0.6	20	100	11.0	14.1	15	2.9	21.9
Oilseeds, fats & oils	10.7	2.7	20	100	9.9	9.1	20	1.5	3.0
Sugars and confectionery	56.3	0	75	100	15.0	0	15	0.7	0
Beverages & tobacco	14.4	0	61	100	13.4	0	59	2.8	0
Cotton	0.0	100.0	0	100	0.0	100.0	0	0.0	100.0
Other agricultural products	8.9	10.4	20	100	7.6	14.9	20	0.7	22.8
Fish & fish products	4.3	57.9	15	100	4.0	59.4	15	1.1	73.3
Minerals & metals	3.4	59.1	20	100	2.7	66.3	20	17.1	79.8
Petroleum	0.0	100.0	0	100	0.0	100.0	0	9.1	100.0
Chemicals	4.5	25.8	10	100	3.8	28.8	7	15.5	48.3
Wood, paper, etc.	5.9	32.6	15	100	4.5	41.6	15	5.6	47.2
Textiles	7.9	1.5	20	100	5.2	29.5	20	7.0	34.1
Clothing	12.0	0	12	100	11.9	0	12	2.3	0
Leather, footwear, etc.	8.4	5.5	15	100	7.8	6.3	15	3.2	4.7
Non-electrical machinery	7.9	16.6	15	100	2.2	68.8	10	7.7	59.0
Electrical machinery	6.0	30.6	10	100	5.6	21.9	10	8.5	32.3
Transport equipment	4.3	19.6	10	100	2.3	56.5	10	5.7	52.4
Manufactures, n.e.s.	5.8	31.1	15	100	5.8	29.4	15	3.0	56.0

Source: World Trade Organization.

Benefits

Social insurance pensions

Old-age pensions

The pensions system in Moldova is organized as a PAYG system. The contributions are paid on the account of both employer and employee. Until the 2018 tax reform, the employer's contribution for mandatory social insurance was 23%, which since 1 of October 2018 has been brought down to 18%. The employees' share is 6%. Due to the large number of beneficiaries (533 thousand end of 2017), the old-age pensions are the main item of the social insurance part of the SSIB (70%). Moreover, the growth rate of the number of pensioners has been much smaller than in 2016, mainly due to the increase in the retirement age and mandatory contribution period.

The monthly pension is rather small (around 85 USD, see Table A5) and the pension-wage replacement rate is only 26%. Compared to general old-age pension, there are a number of privileged categories receiving much higher pensions.

Table A5. Dynamic of the number of social insurance pensions beneficiaries and of the average pension, by type, in the period 2015-2017, end of period

Title of the payment	Number of beneficiaries, persons			Average pension, MDL. / month		
	2015	2016	2017	2015	2016	2017
TOTAL	677150	688574	692196			
Old age pensions	518837	531801	532976	1191.83	1301.14	1456.86
Anticipated pension for old age			8377			2793.71
Disability pensions	133713	132920	128549	933.42	1018.30	1149.35
Successor pensions	15229	14242	12964	603.20	670.33	755.04
Pension for work seniority	92	71	67	677.53	738.37	787.69
Pensions to some categories of employees in the civic aviation sector	622	617	598	6289.65	6929.70	7437.53
Pensions to MPs	270	271	260	4048.26	4367.39	4690.77
Pensions to members of the Government	74	69	69	5458.83	5914.13	6172.91
Pensions to public officials	7063	7323	7094	1806.46	2011.09	2177.86
Pensions to local elected officials	703	719	695	2171.50	2376.91	2550.65
Pensions to customs officers	14	13	13	2604.30	2899.27	3096.42
Pensions to prosecutors	238	238	233	2828.27	3160.58	3512.09
Pensions to judges	268	264	274	6160.76	7177.60	7860.76
Pensions to some employees in the culture sector	27	26	27	563.28	635.19	672.82

Source: 2017 Annual Report of the National Office for Social Insurance.

Two criteria apply for the person to be entitled to receive old age pension: retirement age and period of contribution.

Until 2017 the standard retirement age was 57 years for women and 62 years for men. A gradual increase and convergence of the retirement ages for men and women has started in 2017, so that it reaches 63 years for men by 1 of July 2019 and 63 years for women by 1 of July 2028.

By 2017, the general period of contribution was 30 years for women and 33 years for men. As in case of the retirement age, the contribution period has been set to increase. It is already 34 years for men, and will reach 34 years for women by 1 of July 2024.

As part of the pensions system reform and with the purpose of increasing the replacement rate, a new formula for calculation of the pension has been introduced:

$$P = 1.35\% * T_t * \frac{\sum \frac{con_i}{C_i} * K_{vi}}{n}$$

Where:

- P - the amount of the pension;
- 1.35% – accumulation rate for the contribution years realized after 1 of January 1999;
- T_t – contributions period, years;
- con_i – sum of individual contributions paid for the period i ;
- C_i – individual contribution quota established for the period i ;
- K_i – valorization coefficient established for the period i ;
- n – number of months for which contributions have been calculated and paid.

The part of pension paid from the SSIB is subject to annual indexation on the basis of CPI inflation (until 2017, the indexation rate was calculated based on both CPI and average wage growth). In 2017, the average old pension increased 6.8% in nominal terms, thanks to both indexation and legislative amendments.

Starting with 2017, as provided by the pensions reform, the persons can retire before reaching the minimal retirement age, but not earlier than 3 years before reaching the retirement age. According to the National Office for Social Insurance annual report, all of the 8,377 persons receiving anticipated pensions are men who retired early.

Disability pensions

After the old-age pensions, the disability pensions represent the second most important item of the social insurance pensions in Moldova. The total number of beneficiaries in 2017 was around 128,000, in a steady decline compared to previous years (133,700 in 2015 and 132,900 in 2016). The decline can be explained by two factors: 1) the health conditions reevaluation policy initiated by the Government with the aim of stopping the practice of unwarranted attribution of the disability pension to persons not meeting the medical conditions; and 2) increase in the minimal contribution period.

The average pension in 2017 was 1,149 MDL, which is almost 13% more than previous year in nominal terms. The increase has been due to indexation of the pension, valorization of the average insured income and application of the new formula for pension calculation. In 2017 there have been two rounds of valorization: starting with April 1st 2017, the pensions established in the period 2001-2008 for 15,632 beneficiaries increased by almost 19% to reach 1,432 MDL, while starting with November 1st 2017, the pensions established in 2009-2011 for 9,049 beneficiaries increased almost 38% to reach almost 1,419 MDL.

The disability is established by the National Council for Determining Disability and Work Capacity and can be of severe degree, accentuated degree and medium degree. According to the legal provisions, the minimal amount of the pension established for severe disability should be 75% of the minimum old-age pension; the minimal amount is 70% for accentuated disability and 50% for the medium degree disability. The law requires minimal contribution period for the person to be entitled to disability pension, as shown in the Table A6. In case of a disability caused by a work accident or professional disease, the pension is established with no regard to the contribution period.

Table A6. Minimal contribution period for attribution of disability pension

Age when the disability was established	Contribution period (years)
Until 23 years	2
23-29 years	4
29-33 years	7
33-37 years	10
37-41 years	13
Above 41 years	15

Source: Law nr.156 of 14/10/1998 on public pensions system.

The amount of the pension is established according to the following formulas:

- Pension for severe disability:

$$P = 0,42 \times V_{av} + \frac{T_t}{T_{max}} \times V_{av} \times 0,1;$$

- Pension for accentuated disability:

$$P = 0,35 \times V_{av} + \frac{T_t}{T_{max}} \times V_{av} \times 0,1;$$

- Pension for medium disability:

$$P = 0,20 \times V_{av} + \frac{T_t}{T_{max}} \times V_{av} \times 0,1,$$

where:

- P – amount of the pension;
- V_{av} – valorized insured monthly income, but not more than double amount of the average wage per economy for the year preceding the year of establishing disability;
- T_t – total contribution period;
- T_{max} – maximal potential contribution period from the year of 18 until the retirement age, but not more than 40 years.

Social insurance benefits

In 2017 the National Office for Social Insurance paid 13 types of benefits (indemnities) to almost 395,000 beneficiaries annually (Table A7).

Table A7. Dynamic of the number of social insurance benefits, by type, in the period 2016-2017, end of period

Title of payment	Number of beneficiaries, persons		Average benefit, MDL / month	
	2016	2017	2016	2017
Social insurance benefits	396383	394792		
Support to insured persons for raising the child until the age of 3	46511	47758	1234.29	1348.09
Protection of the persons in case of temporary working incapacity following a work accident	998	1076	1587.38	1543.69
Protection of the persons in case of temporary loss of working capacity (health leave)	281138	279129	1238.63	1407.75
Support to families during pregnancy	20301	20051	17229.12	19373.25
Support to the father of the new-born child through paternal leave benefit	60	2559	4162.35	4074.13
Support to persons in case of disability following a work accident or professional disease	316	317	1550.36	1655.92
Support in case of the death following a work accident	13	14	19486.54	33150.30
Support in case of death of the beneficiary of the social insurance pensions	35158	35147	1100.00	1100.00
Support in case of death of employed persons	6082	4285	1100.00	1100.00
Unemployment benefit	5805	4456	1324.07	1375.85
Indemnity for lack of working capacity	89	66	975.12	995.48
Motherhood indemnity	37	23	5721.49	4315.04

Source: 2017 Annual Report of the National Office for Social Insurance.

Support to insured persons for raising the child until the age of 3

Support to insured persons for raising the child until the age of 3 is the biggest program, for which in 2017 have been spent around 750 million MDL. There were almost 48,000 beneficiaries receiving the support as of end-2017. The average amount of the benefit was 1,348 MDL / monthly, with the concrete amount depending on the income of the insured person. According to the national legislation, the benefit is established at 30% of the average monthly income of the insured person, but not less than 540 MDL per child.

(The non-insured persons are also entitled to a similar benefit, of smaller amount, paid as social assistance, until the child reaches the age of 2.)

Protection of the persons in case of temporary loss of working capacity

The benefit for protection of the persons in case of temporary loss of working capacity (the health leave) is dominant in terms of number of beneficiaries (around 280,000), whereas the total amount spent has been almost 393 million MDL.

The benefits are established and paid by the employers. The base for calculation is the average income of the insured person in the previous 12 months. The concrete percentage depends on the contribution period / type of disease:

- 60% of the calculation base for those contributing up to 5 years;
- 70% of the calculation base for those contributing between 5 and 8 years;
- 70% of the calculation base for those contributing more than 8 years;
- 100% of the calculation base for the persons whose temporary lack of working capacity has been caused by tuberculosis, HIV/AIDS or oncological disease, independently of the contribution period.

Support to families during pregnancy

Employed women and pregnant wives who depend on the insured husbands are entitled to this benefit if they are entitled to maternity leave. For the employed women, the right to this benefit does not depend on the contribution

period. For the pregnant wives who depend on the insured husbands, a minimal contribution period of 3 years applies. The calculation base is the average wage in the previous 12 months before establishing the entitlement with the amount of benefit representing 100% of the base. The benefit is paid in one installment at the 30th week of pregnancy, for a period of 126 calendar days (140 days in case of complicated deliveries or in case of delivering two or more children). As of end-2017, there were 20,051 beneficiaries of the indemnity of an average amount of 19,373 MDL.

Social assistance benefits

With an effectively executed amount of 4.9 billion MDL, the social assistance benefits represent around 29% of the total social payments paid by the National Office for Social Insurance. The social assistance benefits are funded by transfers from the state budget.

Social assistance pensions

By encompassing 14 types of different payments, the social assistance pensions have a share of 27% in total social assistance benefits. They cover such items as: pensions and disability pensions for military, pensions for the loss of breadwinner, pensions to the participants of the liquidation of the consequences of the Chernobyl disaster and / or supplements to pensions paid to some categories from the state social insurance budget. The Table A8 provides details on the number of beneficiaries and typical amount of pension.

Table 8. Number of beneficiaries of the social assistance pensions and average amount of pension, the year 2017

Type of social assistance pension	Number of beneficiaries, persons	Average monthly amount, MDL
Financial support to the disabled persons from among the security forces	1000	3205.22
Old age pensions for persons from among the security forces		
Pensions for work experience for persons from the among the security forces	18742	4425.83
Support to the persons who lost their breadwinner. from the among security forces	1589	2097.92
Pensions to term militaries and their family members	794	1377.00
Pensions to participants to the liquidation of the consequences of the Chernobyl disaster	1802	3039.94
Pensions for MPs	260	2502.29
Pensions for members of the Government	69	2736.08
Pensions for public officials	7094	1345.51
Pensions for locally elected officials	695	1460.96
Pensions for customs officers	13	446.19
Pensions for prosecutors	233	2385.40
Pensions for judges	274	7860.75
Pensions for employees from the culture sector	27	519.06

Source: 2017 Annual Report of the National Office for Social Insurance.

Social assistance benefits (indemnities)

The total amount of the social assistance benefits (indemnities) in 2017 was roughly 433 million MDL. Among other expenditures, this category includes birth benefits (paid to all) and benefits for raising the children until the age of 2 for non-insured persons. Together, they account for 98% of the social assistance benefits paid in 2017. Other benefits include support to families giving birth to duplets and more children and life-long support to athletes.

The birth benefit represents one-off payment provided to all families following the birth of the new-born children. In 2017 there were 32,400 beneficiaries, each entitled to receive a benefit of 5,300 MDL. The amount of payment is set on discretionary basis by governmental decision and is regularly increased (in 2016 the amount of payment was 3,100/3,400 MDL).

The annual amount of benefits for raising the children up to the age of 2 for non-insured persons totaled 230 million MDL. There were 32,800 beneficiaries, each one receiving 540 MDL on monthly basis (440 MDL in 2016).

Allocations

Allocations totaled 582 million MDL.

The main part of the money (309 million MDL) was spent for financial support of the persons not meeting conditions for receiving state social insurance pensions. This refers to both old-age and disability pensions. There were 60,200 entitled persons, for an average amount of allocation of 436.61 MDL. The size of the allocation is established annually, and depends on the evolution of the minimum pension for old age and disability in the social insurance system.

Additionally, persons with disabilities are entitled to a supplementary allocation. There were 15,000 beneficiaries of this allocation averaging 768.29 MDL.

The allocations also include other types of payments, such as supplementary social support to persons from among security forces (6,215 beneficiaries, 134.86 MDL on average per month), monthly allocations to the population living on the left-bank of the Nistry river (6,483 persons, 513 MDL/month), support to the persons with particular state merits, i.e. holders of state orders and medals (15,613 persons, 88.21 MDL/month), support to the persons with particular state merits from among the security forces (1,582 beneficiaries, 117.45 MDL).

Material aid

In 2017 a total amount of 814 million MDL was spent as material aid. The 1) social aid to some categories of the population and 2) the support to some categories of the population during the winter period represent two key items in the material aid, with 557 million MDL and 252 million MDL, accordingly. Material aid is also provided for covering burial costs of the non-insured persons and those who worked in the security bodies.

The social aid to some categories of the population reached 53,000 families in 2017. The key purpose of the program is to ensure a guaranteed minimum monthly income (GMMI) to disadvantaged families. The social aid (coupled with the aid during in the winter period of the year) represents a means-targeted social benefit. While it reaches mainly the families from the lower income quintiles, it offers only a limited safety net to the families depending on the benefit – it is a rather small amount of money (around 800 MDL/monthly) meant to provide only for the most basic needs. Families entitled to material aid also benefit of fully compensated health insurance. Eligibility conditions involve the following:

- The family must have a monthly income below the level guaranteed by the state for that family;
- All adults in the family have either to be employed, officially registered as unemployed (and do not refuse to take part in community works) or are unable to work due to health conditions;
- The family has to pass the wealth test (with a ranking below 80 points).

The amount of GMMI for each family member is established as follows:

- 100% of the GMMI for the solicitor;
- 70% of the GMMI for other adults in the family;
- 50% of the GMMI for each child;
- Plus 30% of the GMMI for every adult with disability;
- Plus 50% of the GMMI for every child with disability;
- Plus 10% of the GMMI if the adult with disability is the only adult in the family.

When calculating the available global income for the applicant family, a number of sources of income are partly or entirely not accounted for, including:

- State financial support provided to the beneficiaries of social pensions or allocations in the amounts not exceeding 1,500 MDL;
- 200 MDL from the wage declared by every employed person in the applicant family;
- 200 MDL from the child benefit for every child in the applicant family;
- Material support provided to the vulnerable persons from the applicant family from the local budgets or from the republican fund for social support of the population;

- For the families composed only of work-unable persons (children, adults with disabilities, persons aged above 75 years (62 for the aid for the cold period of the year)) – the income derived from agricultural activities;

For 2017 the GMMI was established in the amount of 961 MDL. The GMMI is subject to annual indexation based on the CPI index for the previous year.

Other social assistance benefits

In 2017 this category spent 1.74 billion MDL. It covers a vast number of different benefits, including subsidized tickets for treatment in balneary stations, summer camp vacations for children from vulnerable families, pension supplements up to the level of the minimal pension, and others.

However, the dominant item is the “supplementary financial support to some beneficiaries of pensions and social allocations”. The annual amount spent was approximately 1 billion MDL in 2017. Total number of beneficiaries was roughly equal to 560,000 persons, with the average supplement slightly more than 140 MDL / month.

With an annual amount of 557 million MDL, the pensions supplements up to the level of the minimal pension ranks the second in the category of other social assistance benefits. Slightly more than 153,000 persons were entitled to receive the supplement, which averaged 300 MDL.

Students’ scholarships and subsidies

Students from superior and VET education are entitled to education scholarships (stipends). There are three types of public scholarships: the general education scholarships, the merit scholarships and the social scholarship. Scholarships can be provided to up to 70% of the local students enrolled in public-funded programs in educational establishments. Within this limit, scholarships can be provided both to budget-funded students and to those paying tuition fees. Details on the general education scholarships for different educational levels are provided in the Table A9, A10, and A11.

Table A9. General education scholarships for the tertiary education – cycle 3 (PhD program), resident doctors, clinical secondary doctors and post-doctoral students.

Nr. crt.	Categories of scholarship	Amount of the monthly scholarship, MDL
1.	PhD students in the 1 year of study enrolled immediately after the graduation of the faculty and those with work experience less than 3 years.	1155
2.	PhD students in the 2 nd year of study enrolled immediately after the graduation of the faculty and those with work experience less than 3 years.	1280
3.	PhD students enrolled in the 3 rd year of study mentioned in the rows 1 and 2 above and PhD students who before admission had work experience more than 3 years.	1325
4.	Resident doctors in 1 st years of residency	1155
5.	Resident doctors in 2 nd and 3 rd years of residency	1280
6.	Resident doctors in 4 th and 5 th years of residency, clinical secondary doctors enrolled in secondment program immediately after graduating the faculty.	1325
7.	Clinical secondary doctors enrolled in secondment program with work experience as doctors.	The position wage
8.	Post-doctoral students working on the thesis for the title of “doctor habilitat”	Average wage received before admission to post-doctoral studies, but not more than average wage per economy last year.

Source: Annex 1 of the Regulatory framework for provision of student scholarships..., Government Decision no.1009 of 1 of September 2006.

Table A10. Amounts of scholarships for the students enrolled in tertiary education (cycle 1, cycle 2, integrated studies, medical and pharmaceutical education) and those enrolled in post-secondary and non-tertiary post-secondary professional-technical education and secondary professional-technical education, MDL/month

Nr. crt.	Categories of scholarship	In tertiary level	In postsecondary level
I.1.	Category I	880	690
I.2.	Category II	750	575
I.3.	Category III	690	530
II.	Social	465	405
III.	Cycle II	945	n.a.

Source: Annex 1 of the Regulatory framework for provision of student scholarships, Government Decision no.1009 of September 1, 2006.

Table A11. Amounts of scholarships for students enrolled in secondary professional education

Category of students	Category of scholarships	Amount of scholarship, MDL
All students except those studying in classes for deaf and hearing-impaired persons	Category I	510
	Category II	430
	Category III	360
Students studying in classes for deaf and hearing-impaired persons		390

Source: Annex 1 of the Regulatory framework for provision of student scholarships..., Government Decision no.1009 of September 1, 2006

Students having permanent residence outside the city where the educational establishment functions are entitled to 50% subsidy for two trips per year to their hometown and back. Also, they are reimbursed 50% of the regular accommodation and per diem expenditures during their mandatory internship practices and 100% of the related travel expenditures.

Students from some social groups (orphans, parents are persons with disabilities, families with many children, persons who are teachers) benefit of free accommodation in the student dormitories owned by educational institutions where they are enrolled.

Transport subsidies

A number of social categories are entitled to free travel in the public transport units in the municipality of Chisinau, including:

- Local elected officials
- Employees in the security and law-enforcing bodies;
- Veterans of war and holders of high-rank state orders and medals;
- Honorable citizens of the Chisinau municipality (a title awarded by municipal authorities to distinguished persons)
- Blood donors;
- Victims of political repression in the Soviet times.

According to the municipal sources, a total number of 20,000 persons are entitled to free of charge travel in the public transportation system of the municipality of Chisinau.¹¹

Pensioners of age and persons with disability are also entitled to compensated annual tickets. In 2018, the local authorities in Chisinau allocated 68 million MDL for transport compensation.

Besides, the municipal council adopted a set of lower transportation fees for pupils and students, including those from vulnerable families. For a normal monthly fee of 180 MDL, the pupils and students are entitled to pay only 70 MDL, whereas students from vulnerable families – only 50 MDL.

¹¹ <https://www.timpul.md/articol/20-de-mii-persoane-calatoresc-gratuit-cu-transportul-public-in-chiinau-131461.html>.

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